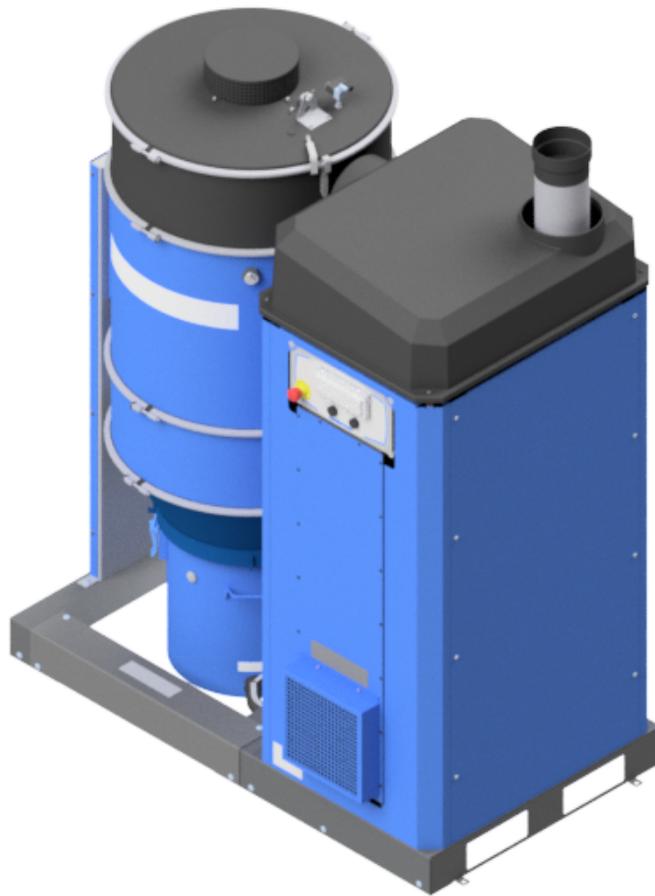


Compact dust collectors

FlexPAK

Software 2181472-E



Original plc settings manual

EN PLC SETTINGS MANUAL

Table of contents

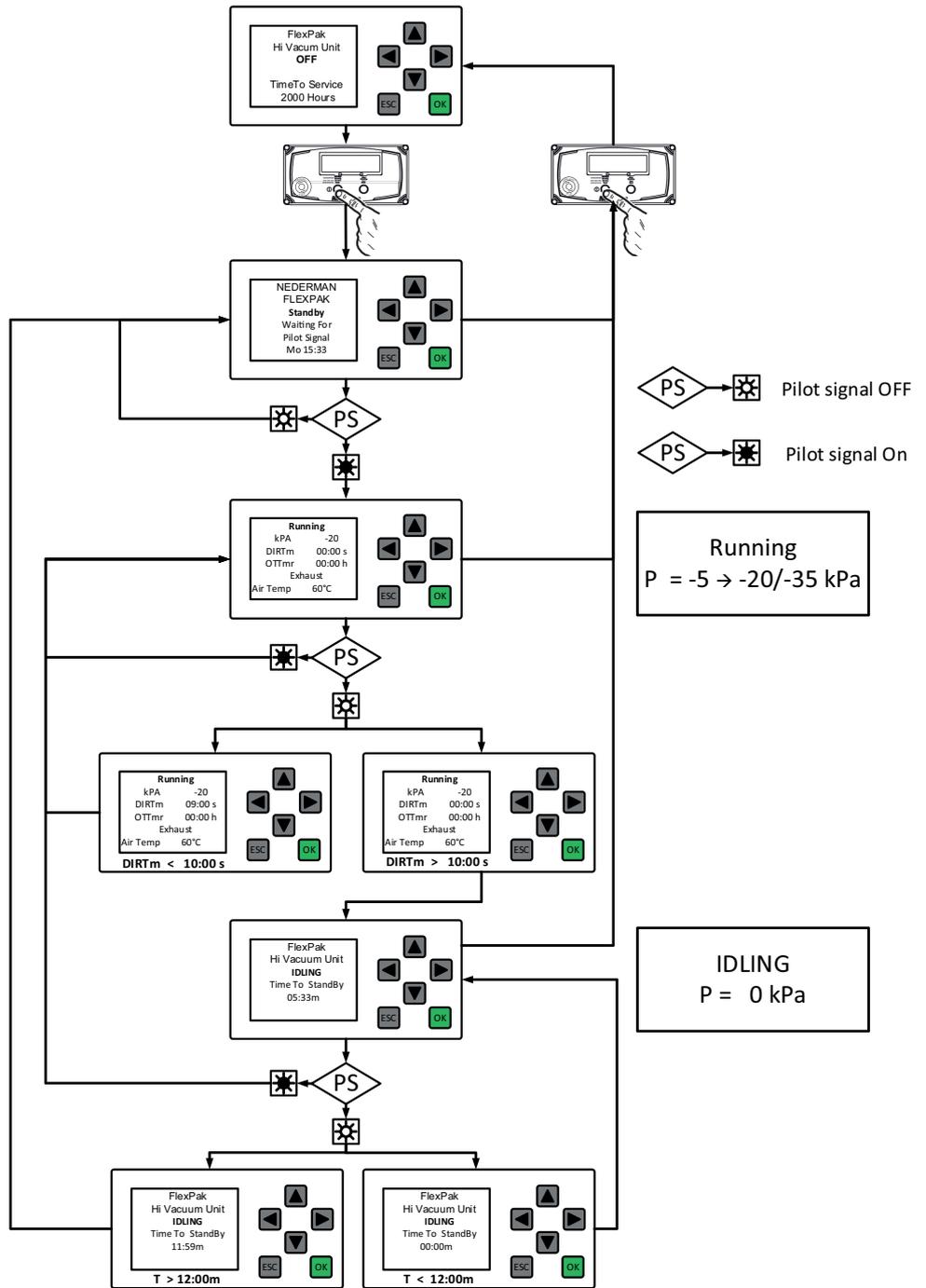
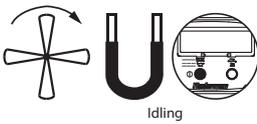
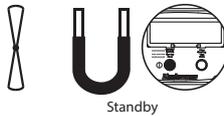
Figures	6
1 Preface	10
2 Safety	10
2.1 Classification of important information	10
2.2 General safety requirements	10
3 PLC messages	10
3.1 Status messages	10
3.1.1 Nederman FlexPAK Off (Off mode)	10
3.1.2 FlexPAK Standby (Standby mode)	11
3.1.3 Running (Running mode)	11
3.1.4 FlexPAK Idling (Idling mode)	11
3.1.5 Filter Cleaning	11
3.1.6 Emptying pre-separator	11
3.1.7 Open Upper Slide Valve V12	12
3.1.8 Close Upper Slide Valve V12	12
3.1.9 Emptying bin TVFD Advanced	12
3.1.10 Close Lower Slide Valve V11	12
3.1.11 Flushing duct	13
3.1.12 Isolation Damper Closing Duct	13
3.1.13 Emptying bin AEB flap valve	13
3.1.14 Emptying bin TVFD simple	13
3.1.15 Pressure Sensor Display	13
3.1.16 Emptying bin by rotary valve	15
3.1.17 Temperature Sensor Display	15
3.1.18 Vibration Sensor Display	16
3.2 Warning messages	17
3.2.1 Time For service	17
3.2.2 Warning! Main Filter Clogged	17
3.2.3 Dustbin Full	17
3.2.4 Bag Replacement Switch Activated	18
3.2.5 Warning Low Vacuum	18
3.2.6 AUX Temp Limit Exceeded 1	18
3.2.7 AUX Temp Limit Exceeded 2	19
3.2.8 Rotary valve fault	19
3.2.9 Rotary rotation detection	19
3.3 Alarms	20
3.3.1 External Fire Alarm Explosion Detected	20
3.3.2 Frequency Conv Alarm	20
3.3.3 Emergency Stop Activated	20
3.3.4 Low Pressure or Duct Isolation Released	21
3.3.5 Alarm! Hi Vacuum	21
3.3.6 Exhaust Air Temp High	21
3.3.7 Bag Replacement Switch Time Out	21
3.3.8 Alarm! Control Filter Clogged	22
3.3.9 TVFD Alarm! Lower Slide Not Closed	22
3.3.10 TVFD Alarm! Upper Slide Not Open	22
3.3.11 TVFD Alarm! Lower Slide Not Closed	23
3.3.12 TVFD Alarm! Lower Slide Not Open	23
3.3.13 TVFD Alarm! Slides In Open Position	23
3.3.14 Alarm! Dustbin Full	24
3.3.15 Alarm! Main Filter Clogged	24
3.3.16 AUX Hi Temp Limit Exceeded	24
3.3.17 AUX Lo Temp Limit Exceeded	25
3.3.18 Vibration Limit Exceeded	25

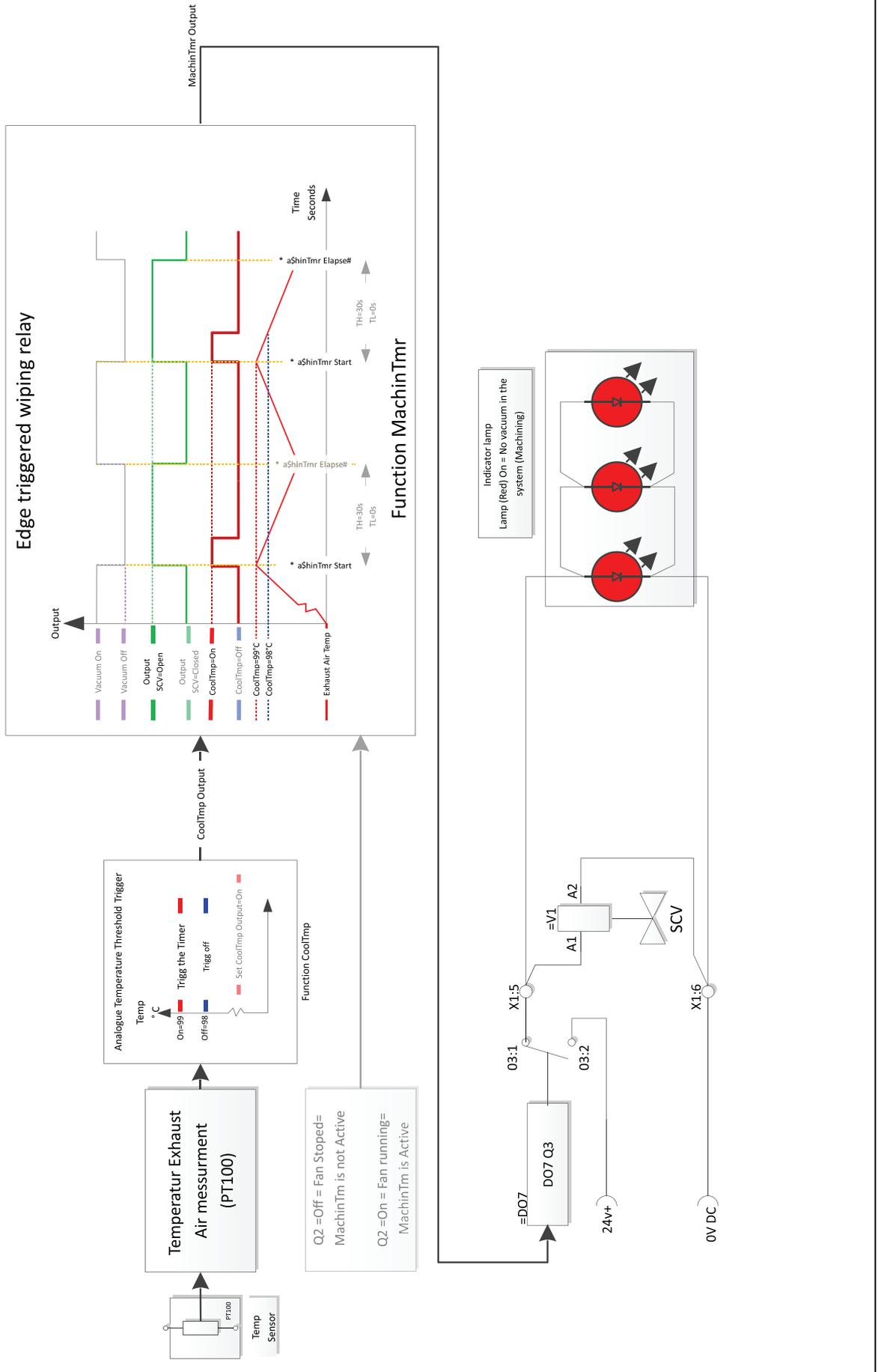
4	PLC settings	25
4.1	Find a parameter and set its value	26
4.2	Parameter settings	27
4.2.1	Adjust the time and date	27
4.2.2	Set the weekly timer - WeekTmr	27
4.2.3	H-Meter	29
4.2.4	SSR_Time	29
4.2.5	AEB_Time	30
4.2.6	DIR_Time	30
4.2.7	WeekTmr	30
4.2.8	PresepTm	30
4.2.9	MFDPS-Wr	31
4.2.10	MFDPS-FC	31
4.2.11	BLI-Empt dl	31
4.2.12	BLI-Wr	31
4.2.13	BinOpnTm	32
4.2.14	CFDPS-AI	32
4.2.15	TVFDAdv	32
4.2.16	PSCFlush	32
4.2.17	Auto empt.	32
4.2.18	LiAuto empty	33
4.2.19	LSOTmr	33
4.2.20	FlushCy2	33
4.2.21	OTTmr	33
4.2.22	FlushTmP	34
4.2.23	CoolTmP	34
4.2.24	TVFD-AI-Tmr	34
4.2.25	BRSTmr	35
4.2.26	Vac_Low_Pmp	35
4.2.27	AEB-TVFD	35
4.2.28	FlushCy1	35
4.2.29	VacLoTmPmp	36
4.2.30	PSIFC	36
4.2.31	Presep	36
4.2.32	FlushTmr	36
4.2.33	FCDelay	37
4.2.34	IsoVDly	37
4.2.35	DuctIsoDamp	37
4.2.36	BLI-Alarm	37
4.2.37	MFDPS-AI	38
4.2.38	DPFClean	38
4.2.39	EmtyIdli	38
4.2.40	Fire_AI_Set	39
4.2.41	Rot fault AI	39
4.2.42	Vac_Low_duct	39
4.2.43	VacLoTmDct	39
4.2.44	Select_Duct	40
4.2.45	E-StopSelect	40
4.2.46	FltClean	40
4.2.47	Clean Cycle	40
4.2.48	Vibr Setting	41
4.2.49	AUX Setting	42
4.2.50	MFdP Setting	43
4.2.51	CFdP Setting	44
4.2.52	Rot valve	45
4.2.53	Rot valve LI	45
5	Automatic bin emptying function	46
5.1	AEB-Flap Valve settings	46
5.1.1	Hardware	46

5.1.2	PLC Settings	46
5.1.3	Timer Settings	46
5.2	Simple TVFD Valve Settings	46
5.2.1	Hardware	46
5.2.2	PLC Settings	46
5.2.3	Timer Settings	46
5.3	Pre-Separator Settings	47
5.3.1	Hardware	47
5.3.2	PLC Settings	47
5.3.3	Timer settings: Pre-Separator 1	47
5.3.4	Timer settings: Pre-Separator 2	47
5.4	Advanced TVFD Valve Settings	47
5.4.1	Hardware	47
5.4.2	PLC Settings	47
5.4.3	Timer settings	47
5.5	Rotary valve settings	48
5.5.1	Hardware	48
5.5.2	PLC settings	48
6	Machining chips and swarf extraction	48
6.1	Electrical connection of indicator lamp	48
7	Pneumatic filter cleaning valve	48
7.1	Filter cleaning button	48
7.2	Filter cleaning in Standby mode	48
7.3	Filter cleaning in Running mode	49
7.4	Filter cleaning valve function	49
8	ATEX Duct Isolation Valve settings	49
8.1	Flush Cycle settings	49
8.1.1	FlushCy1(T) (Timer)	50
8.1.2	FlushCy2(T) (Timer) (Dual Function)	50
8.2	Tuning Duct Isolation Damper sequence	50
8.2.1	FCDelay(T) Parameter	50
8.2.2	FCDelay(T) Parameter Calculation See, Timing diagram	50
8.3	IsoVDly(T) Parameter Settings	50
8.4	Settings Tpu = Cleaning Pulse Time (FC Valve opening Time)	50
8.4.1	Total Filter Cleaning sequence time	50
9	FlexPAK IOT System	51
9.1	Preset IP Addresses for FlexPAK IOT Units	51
10	Appendix A: PLC settings protocol	52

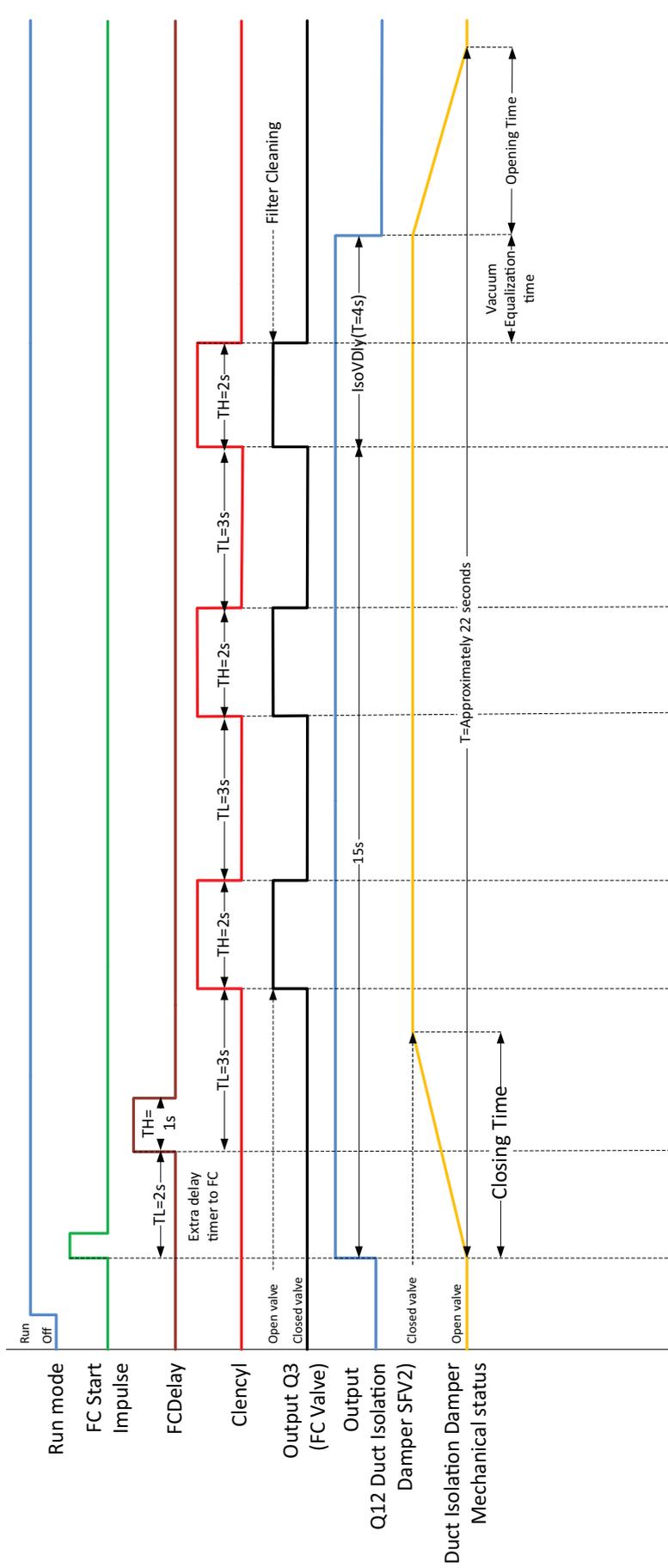
Figures

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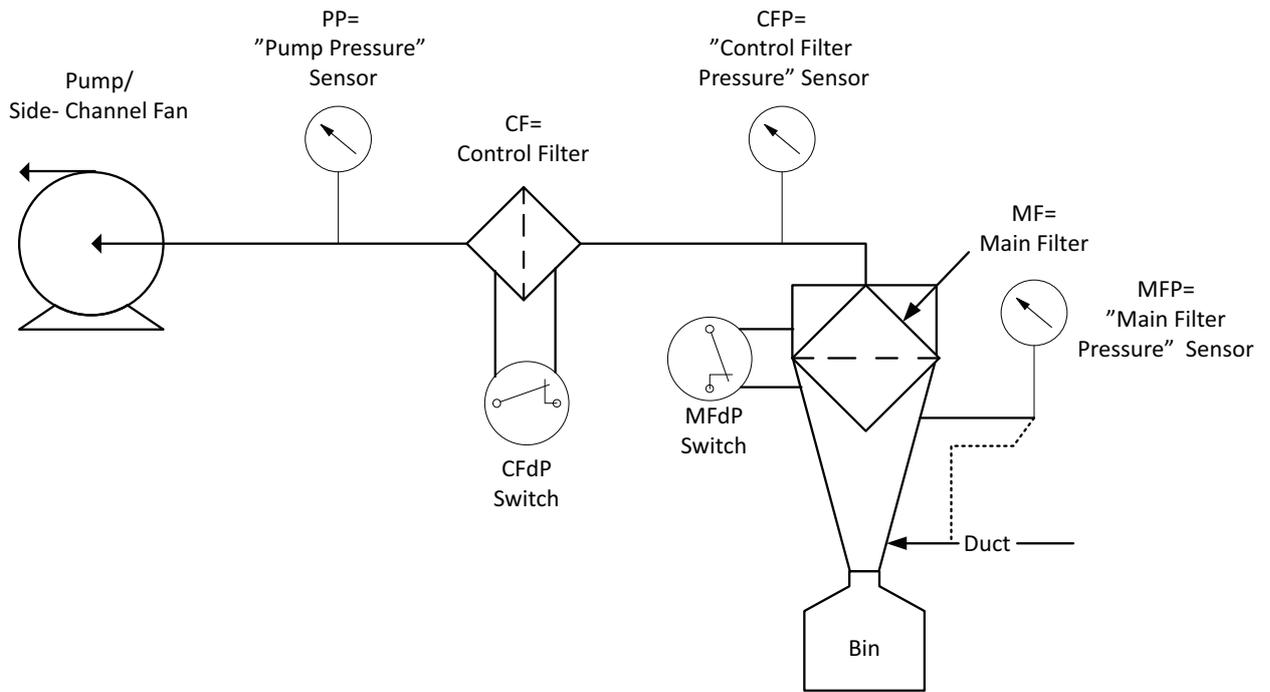




Timing Diagram FlexPAK 800-1000 ATEX Duct Isolation Damper: Software 2168079-1, 2181472-X



4



PP = Pump Pressure Sensor

CFP = Control Filter Pressure Sensor

MFP = Main Filter Pressure Sensor

CFP = Control Filter Pressure Sensor

MFPP = Calculated dP Across System / $MFP - PP = MFPP$

MFCF = MFdP = Calculated dP Across Main Filter / $MFP - CFP = MFCF$

CFPP = CFdP = Calculated dP Across Control Filter / $CFP - PP = CFPP$

1 Preface

Thank you for using a Nederman product!

The Nederman Group is a world-leading supplier and developer of products and solutions for the environmental technology sector. Our innovative products will filter, clean and recycle in the most demanding of environments. Nederman's products and solutions will help you improve your productivity, reduce costs and also reduce the impact on the environment from industrial processes.

Read all product documentation and the product identification plate carefully before installation, use, and service of this product. Replace documentation immediately if lost. Nederman reserves the right, without previous notice, to modify and improve its products including documentation.

This product is designed to meet the requirements of relevant EC directives. To maintain this status, all installation, maintenance, and repair is to be done by qualified personnel using only Nederman original spare parts and accessories. Contact the nearest authorized distributor or Nederman for advice on technical service and obtaining spare parts. If there are any damaged or missing parts when the product is delivered, notify the carrier and the local Nederman representative immediately.

2 Safety

2.1 Classification of important information

This document contains important information that is presented either as a warning, caution or note, according to the following examples:

3 PLC messages

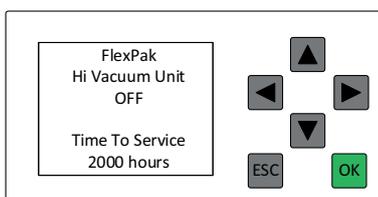
The following sections show the different status, warning, and alarm messages that can be seen in the PLC display.

3.1 Status messages

The following status messages give information about what mode the unit is in or what routine service is being performed. See [Figure 1](#) for a chart that shows how FlexPAK moves between different unit modes.

3.1.1 Nederman FlexPAK Off (Off mode)

The unit is in Off mode, which is also the unit's start menu. The unit can also go into Off mode if something is wrong, such as if an alarm is activated. The pump motor is off, there is no vacuum, the Filter Cleaning Valve (FCV) is closed, and the unit cannot be activated by a pilot signal.



TimeToService: The amount of time until the next scheduled service. The default setting is 2000 hours. See [Section 4.2.3 H-Meter](#).



WARNING! Risk of personal injury

Warnings indicate a potential hazard to the health and safety of personnel, and how that hazard may be avoided.



CAUTION! Risk of equipment damage

Cautions indicate a potential hazard to the product but not to personnel, and how that hazard may be avoided.



NOTE!

Notes contain other information that is important for personnel.

2.2 General safety requirements



WARNING! Risk of personal injury

- A high vacuum system creates a powerful suction that may cause serious eye injury or hearing impairment. Persons who will be using FlexPAK, or may come in contact with FlexPAK, is to be informed about this risk.
- Never look into the exhaust air duct. Debris and particles coming out of the outlet may cause eye injuries.
- Personnel operating FlexPAK need to pay special attention to avoiding discharge of static electricity.

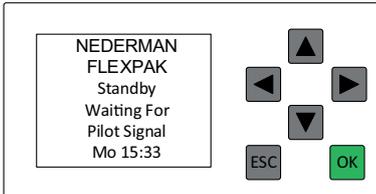


NOTE!

Only authorized personnel are allowed to have access to this unit.

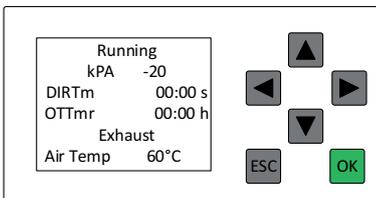
3.1.2 FlexPAK Standby (Standby mode)

The unit is in Standby mode. The pump motor is off, there is no vacuum, the FCV is closed, and the unit is waiting for a pilot signal to go into Running mode.



3.1.3 Running (Running mode)

The unit in Running mode. The pump motor is on and the unit generates a vacuum. The FCV is closed. The current vacuum of the unit is shown on the display, for example, -20 kPa.



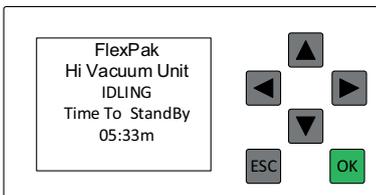
DIRTm: The amount of time before the unit goes into Idling mode. The default is 10 seconds. See also [Section 4.2.6 DIR_Time](#).

OTTmr: If the Overtime timer has been activated, OTTmr shows the elapsed time since the overtime timer started.

The temperature of the exhaust air is displayed at the bottom of the display.

3.1.4 FlexPAK Idling (Idling mode)

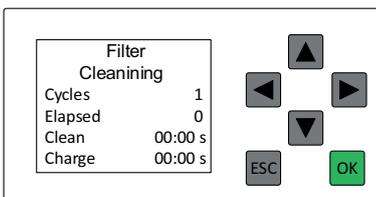
The unit in Idling mode. The pump motor is on, there is no vacuum, and the FCV is open. The unit goes into Idling mode when there has been no pilot signal for the time set in DIR_Time, see [Section 4.2.6 DIR_Time](#).



TimeToStandby: The amount of time until the unit goes into Standby mode. The default setting is 12 minutes. See [Section 4.2.4 SSR_Time](#).

3.1.5 Filter Cleaning

The unit is cleaning its filter.



Cycles: How many cleaning pulses will be carried out.

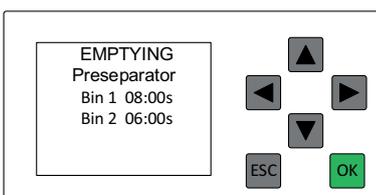
Elapsed: How many cleaning pulses are made.

Clean: Remaining time for cleaning pulse.

Charge: Remaining vacuum build time; the time until cleaning pulse is activated.

3.1.6 Emptying pre-separator

The time remaining until the pre-separator bin is to be emptied.

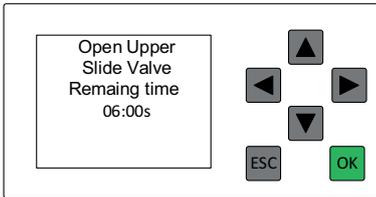


Bin 1: The time remaining to empty the pre-separator as set in BinOpnTm.

Bin 2: The time remaining for pre-separator 2 to be emptied as set in Pre-sepTm.

3.1.7 Open Upper Slide Valve V12

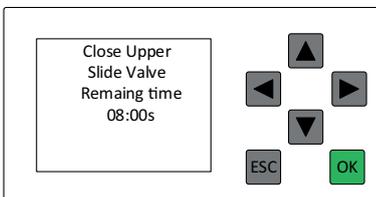
The message appears when the TVFD Upper Solenoid Valve is expected to open. The timer is set with TVFD-AI, see [Section 4.2.24 TVFD-AI-Tmr](#). If the timer elapses, the 'TVFD Alarm! Upper Slide Not Open' is activated. This message is only shown when TVFD advanced is activated.



Remaining Time: The remaining time for the valve to open before the alarm is activated.

3.1.8 Close Upper Slide Valve V12

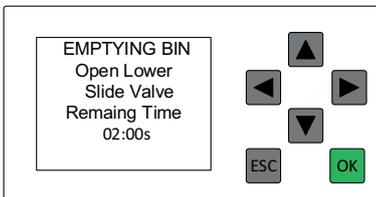
The message appears when the TVFD Upper Solenoid Valve is expected to close. The timer is set with TVFD-AI, see [Section 4.2.24 TVFD-AI-Tmr](#). If the timer elapses, the 'TVFD Alarm! Upper Slide Not Closed' is activated. This message is only shown when TVFD advanced is activated.



Remaining Time: The remaining time for the valve to close before the alarm is activated.

3.1.9 Emptying bin TVFD Advanced

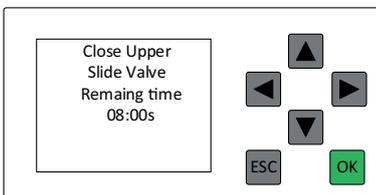
The message appears when the TVFD Lower Solenoid Valve is expected to open. The timer is set with TVFD-AI, see [Section 4.2.24 TVFD-AI-Tmr](#). If the timer elapses, the 'TVFD Alarm! Lower Slide Not Open' is activated. This message is shown when TVFD advanced is activated. TVFD-AI is only activated when using TVFD advanced.



Remaining Time: The remaining time for the valve to open before the alarm is activated.

3.1.10 Close Lower Slide Valve V11

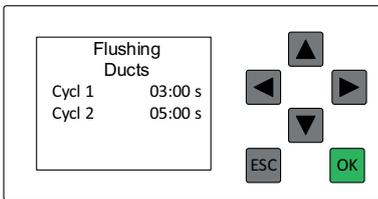
The message appears when the TVFD Lower Solenoid Valve is expected to close. The timer is set with TVFD-AI, see [Section 4.2.24 TVFD-AI-Tmr](#). If the timer elapses, the 'TVFD Alarm! Lower Slide Not Closed' is activated. This message is only shown when TVFD advanced is activated.



Remaining Time: The remaining time for the valve to close before the alarm is activated.

3.1.11 Flushing duct

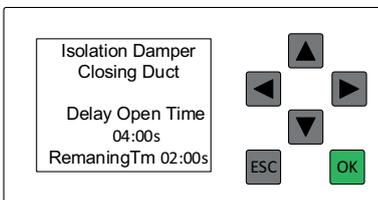
The unit is flushing the duct system. This message is shown when FlushCy1 and FlushCy2 activate the flush valve. This message is also shown when FlushTemp is activated, see [Section 4.2.28 FlushCy1](#), [Section 4.2.20 FlushCy2](#) and [Section 4.2.22 FlushTmp](#).



Cycl1: The time remaining for the flush cycle with the flush valve 1 (SFV1).
 Cycl2: The time remaining for the flush cycle with the flush valve 2 (SFV2).

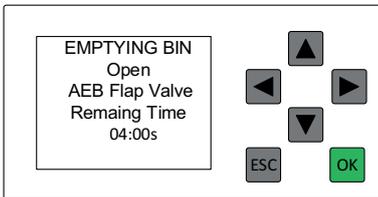
3.1.12 Isolation Damper Closing Duct

When the parameter (Softkey, DuctIsoDamp = On), FlexPAK is configured to control a damper that separates the filter from the factory's channel system. The message appears before filter cleaning starts. The display shows the time delay set for opening the damper after filter cleaning.



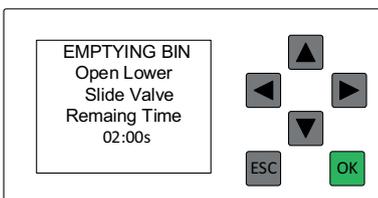
3.1.13 Emptying bin AEB flap valve

When the system is configured for an AEB Flap Valve, the following message appears when BIN emptying is performed. The message is displayed about Parameter → AEB-TVFD = On.



3.1.14 Emptying bin TVFD simple

When the system is configured for a simple TVFD without the limit mode sensor, the message below will be displayed when BIN emptying is performed. The message is displayed about Parameter → AEB-TVFD = Off.

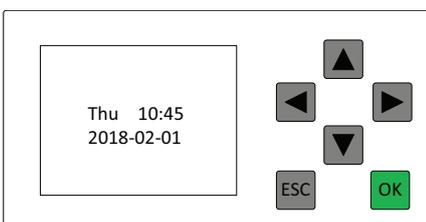


When the system is configured for an AEB Flap Valve, the following message appears when BIN emptying is performed.

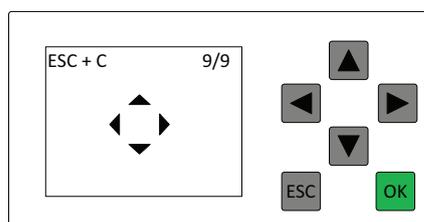
The message is displayed about Parameter → AEB-TVFD = On.

3.1.15 Pressure Sensor Display

The Pressure Sensor Reading display is manually activated.



Date Window



Arrow Window

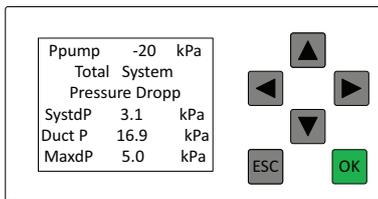
The display is activated by the following sequence:

- Toggle with arrow key "UP" or "Down" until Date Window is visible.
- Toggle with arrow key "Left" or "Right" until Arrow Window is visible.

Press the "ESC" button simultaneously while pressing the arrow key "Up" to view pressure sensor data. Pressure sensor data is only available if a pressure sensor is physically installed and sensor setup is done in the parameter setting.

- CFdP Setting "Stat = ON" (Control Filter Sensor)
- MFdP Setting "Stat = ON" (Main Filter Sensor)
- Stat = On → Activated sensor input for Analog sensor 0-10V
- Stat = Off → Activated sensor input for Dp Switch input configuration

Displayed when only Main Filter is installed

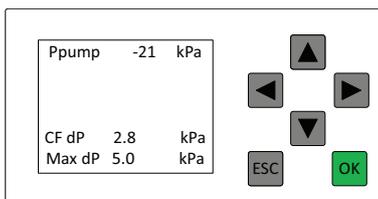


MFdP Setting, Set = ON
 CFdP Setting, Set = OFF
 Press "OK" button to close display.

Ppump	-20 kPa	→	Pressure readings from the pump pressure sensor
SystdP	3.1 kPa	→	dp pressure System "dp Pump to the dirty side of filter"
Duct P	-16.9 kPa	→	Pressure sensor readings from a sensor placed on filter dirty side or duct
MaxdP	5.0 kPa	→	Main Filter Max dp pressure Limit setting

See "CFdP Setting" for more information

Displayed when only Control Filter is installed

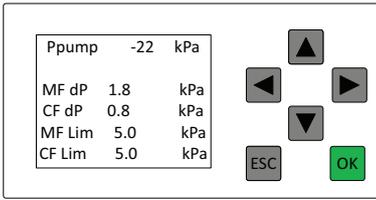


MFdP Setting, Set = OFF
 CFdP Setting, Set = ON
 Press the "OK" button to close the display.

Ppump	-21 kPa	→	Pressure readings from the pump pressure sensor
CFdP	2.8 kPa	→	Control Filter dp pressure
MaxdP	5.0 kPa	→	Control Filter Max dp pressure Limit setting

See "CFdP Setting" for more information

Displayed when Main Filter and Control Filter are installed

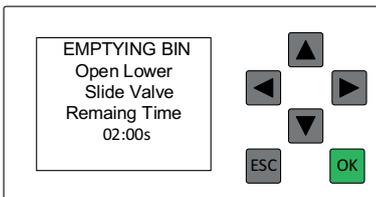


MFdP Setting, Set = ON
 CFdP Setting, Set = ON
 Press the "OK" button to close the display.

Ppump	-20 kPa	→	Pressure readings from the pump pressure sensor
MFdP	1.8 kPa	→	Main Filter dp pressure
CFdP	0.8 kPa	→	Control Filter dp pressure
MF Lim	5.0 kPa	→	Main Filter Max dp pressure Limit setting
CF Lim	5.0 kPa	→	Control Filter Max dp pressure Limit setting
See "MFdP Setting" and "CFdP Setting" for more information			

3.1.16 Emptying bin by rotary valve

When the system is configured for a simple TVFD without the limit mode sensor, the message below will be displayed when BIN emptying is performed. The message is displayed about Parameter → AEB-TVFD = Off.



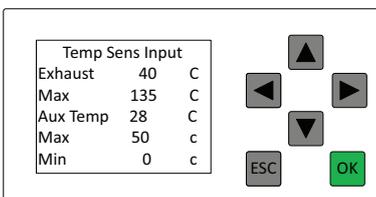
When the system is configured for emptying with a rotary valve the following message is displayed during rotary valve operation.

3.1.17 Temperature Sensor Display

The temperature Sensor Reading display is manually activated.

- Toggle with arrow key "UP" or "Down" until Date Window is visible.
- Toggle with arrow key "Left" or "Right" until Arrow Window is visible.

Press the "ESC" button simultaneously while pressing the arrow key "Left" to view Temperature sensor data.



If Sensor is not installed and sensor input is open, sensor reading is -50°C
 Press the "OK" button to close the display.

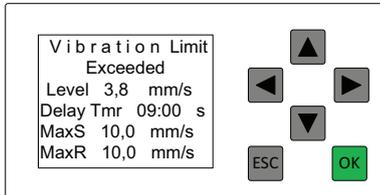
Exhaust	40C	→	Fan Exhaust Air Temperature
Max	135C	→	Fan Exhaust Max Air Temperature Limit setting (Default 135 C)
Aux Temp	28 C	→	AUX Sensor Temperature
Maxd	50C	→	AUX Temperature Max Temperature Limit setting (Default 50 C)
Min	0 C	→	AUX Temperature Min Temperature Limit setting (Default 0 C)
See "AUX Setting" for more information			

3.1.18 Vibration Sensor Display

The Vibration Sensor Reading display is manually activated.

- Toggle with arrow key "UP" or "Down" until Date Window is visible.
- Toggle with arrow key "Left" or "Right" until Arrow Window is visible.

Press the "ESC" button simultaneously while pressing the arrow key "Down" to view Vibration Sensor data (actually it is an Alarm display that is opened and viewed without Alarm is activated).



If Sensor is not installed and sensor input is open, sensor reading is approximate -6.24mm/s

Press the "OK" button to close the display.

Level	3.8 mm/s	→	Actual Vibration value
Delay Tmr	09:00 s	→	Reaming time to unit stop, Stop delay timer
MaxS	10.0 mm/s	→	Max SET Vibration limit setting
MaxR	10.0 mm/s	→	Max RESET Vibration limit setting

3.2 Warning messages

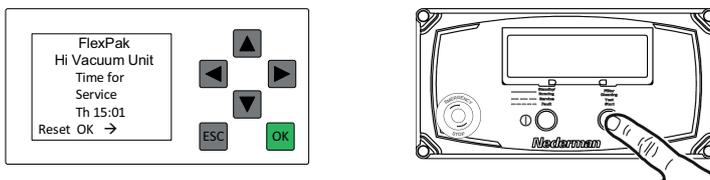
If a warning is activated, a problem needs to be corrected, but the unit continues to work. If a warning message is displayed in the PLC display, the light in the Standby/Running button flashes one second on, one second off. This 1/1 on/off sequence continues until the problem is corrected. The backlight colour in the display changes from white to amber while there is an active warning.

There are two exceptions to this rule, [Section 3.2.1 Time For service](#) and [Section 3.2.4 Bag Replacement Switch Activated](#).

3.2.1 Time For service

The time interval set in the 'Service Interval Setting' menu has expired. If this warning is activated, the light in the Standby/Running button is lit one second and then again in 7 seconds. This 1/7 on/off sequence continues until the warning is reset.

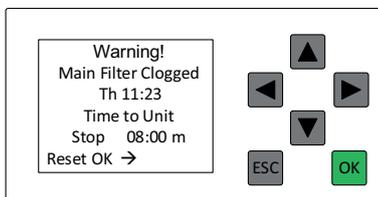
Reset the alarm by first putting the unit into Off mode. Restart the unit. In Standby mode, press the manual filter cleaning button for 10 seconds.



3.2.2 Warning! Main Filter Clogged

This Warning is only shown when the Main Filter Delta Pressure Switch (MFDPs) is installed. This message is displayed if the Differential Pressure switch "DP switch" is installed and the Dp switch detects a high differential pressure across the filter.

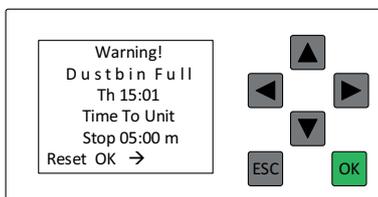
When the Dp switch detects a high Dp pressure, it activates a timer, which is shown in the display. If the Dp pressure is still high when the timer elapses, the vacuum unit will stop and the alarm message "Alarm! Main Filter Clogged" is activated.



Time to Unit Stop: Displays the time until the unit is stopped.

3.2.3 Dustbin Full

The Bin Level Indicator has detected that the dust bin has been full for 12 minutes. Empty the dust bin and press the OK button to reset the warning.

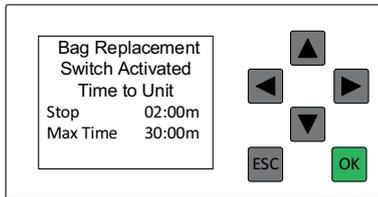


Time to Unit Stop: Displays the time until the unit is stopped.

3.2.4 Bag Replacement Switch Activated

The bag replacement switch (SC2) is activated. It shows the maximum allowed time to replace the dust bag, and how much time is left to replace the dust bag and turn off the bag replacement switch before the unit is put into Off mode.

If this warning is activated, the light in the Standby/Running button is lit for two seconds and then again in 2 seconds. This 2/2 on/off sequence continues until the warning is reset.



Stop: The remaining time to replace the dust bag before the unit is put into Off mode.

MaxTime: The maximum amount of time allowed to replace the dust bag.

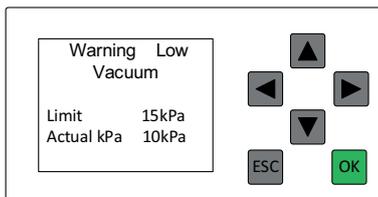
3.2.5 Warning Low Vacuum

Function to warn when the vacuum is too low in the system.

When the vacuum is too low, Vac_Low activates the delay timer (VacLoTm) function when the message expires. When the vacuum rises above the set limit value, the message disappears automatically.

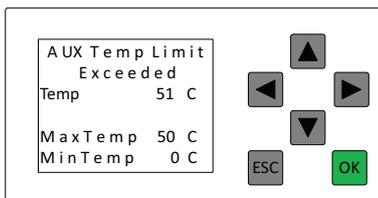
The Vac_Low parameter default setting is -15kPa.

The VacLoTm parameter default setting is 1 minute.



3.2.6 AUX Temp Limit Exceeded 1

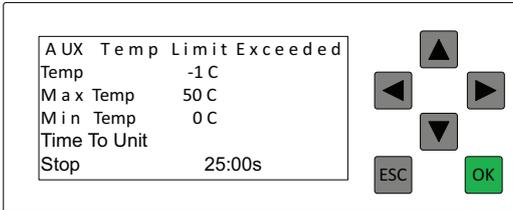
This message is displayed when one of the AUX temperatures exceeds limits settings, and the stop functionality is not activated.



Temp	51 C	→	Shows the actual temperature value
MaxTemp	50 C	→	Shows Max Temperature limit setting
MinTemp	0 C	→	Shows Min Temperature limit setting

3.2.7 AUX Temp Limit Exceeded 2

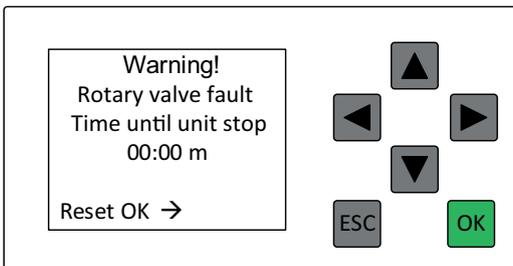
This message is displayed when one of the AUX temperatures exceeds limits settings, and the stop functionality is activated. This message also shows the remaining time until the unit stops.



Temp	51 C	→	Shows the actual temperature value
MaxTemp	50 C	→	Shows Max Temperature limit setting
MinTemp	0 C	→	Shows Min Temperature limit setting
Time To Unit Stop	25:00 s	→	Shows the remaining time until the unit stops

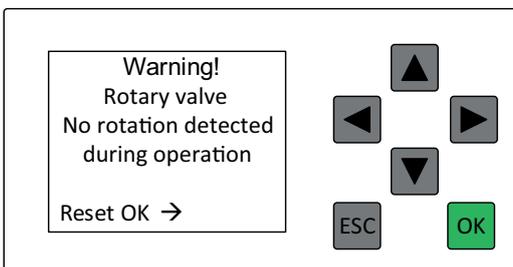
3.2.8 Rotary valve fault

This message is displayed if parameter Rot valve:ERR = ON, and the rotary valve control unit indicates a fault. The time until the unit stops is also displayed.



3.2.9 Rotary rotation detection

This message is displayed if parameter Rot valve:Dete = ON, and no rotation indicating voltage pulses were received during rotary valve operation.



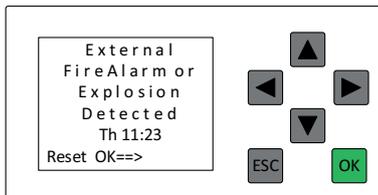
3.3 Alarms

If an alarm is activated, the unit goes into Off mode until the problem is corrected.

If an alarm message is displayed in the PLC display, the light in the Standby/Running button flashes one second on, one second off. This 1/1 on/off sequence continues until the problem is corrected and the alarm reset. The backlight colour in the display changes to red while there is an active alarm.

3.3.1 External Fire Alarm Explosion Detected

An external fire alarm is activated or a Relief Panel Sensor (RPS) is connected and has detected an explosion. Press the green OK button to reset the alarm.

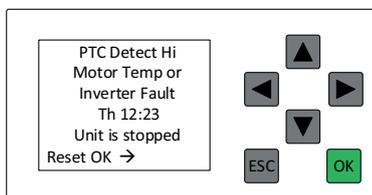


3.3.2 Frequency Conv Alarm

The frequency converter has detected a problem and that the PTC sensors in the motor have reached the maximum temperature for the unit (140°C) so the unit has been put into Off mode.

The following list shows the most common problems:

- Connection problem to the main power supply.
- Motor cable problem.
- Power supply fault.
- There is a problem with the frequency converter.
- PTC temp monitor detects an overheated motor.



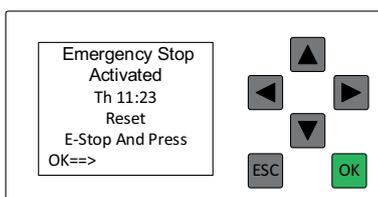
3.3.3 Emergency Stop Activated

If this message appears in the display, one or more emergency stops have been activated and the machine has been switched off. External systems can be connected to the FlexPAK E-stop circuit, eg On the FlexPAK DX unit. RPS panel sensor is connected.

Find out why the emergency stop has been activated and correct the problem. When all hazards have been eliminated that activated the emergency stop, the emergency stop can be reset. Reset the Emergency Stop Button by turning it and then pulling it outward.

When all emergency stops have been reset, the security circuit can be reset by pressing the green OK button in the display.

If the Green OK button can not be reset even though all emergency stops are reset, it may be due to a short circuit to ground in the emergency stop circuit or pilot signal circuit.

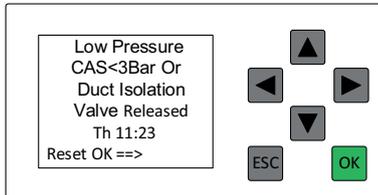


3.3.4 Low Pressure or Duct Isolation Released

The Compressed Air Switch (CAS) indicates that the compressed air pressure is too low.

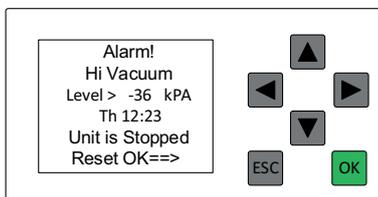
Or, there is a duct isolation valve connected to the system that has released and isolated FlexPAK from the duct system. Check the isolation valve release sensor, released isolation valve = open electrical circuit to input on PLC.

Press the green OK button to reset the alarm.



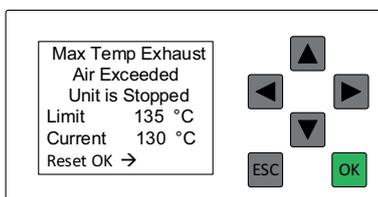
3.3.5 Alarm! Hi Vacuum

The maximum vacuum level has been activated, and the delay time for the vacuum alarm has elapsed. Press OK to reset the alarm.



3.3.6 Exhaust Air Temp High

The temperature of the air exiting the pump has exceeded the maximum allowable limit of 135°C (275°F). When the 'Current Value' has become lower than 90°C (194°F), press OK to reset the alarm. Check for the cooling air valve or PT100 sensor values.



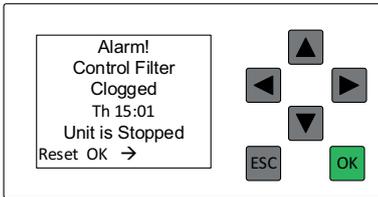
3.3.7 Bag Replacement Switch Time Out

The maximum amount of time for the bag replacement being 'On' has been exceeded. To restart the unit, the alarm needs to be reset by turning the bag replacement switch (SC2) to 'Off' and pressing the OK button to reset the alarm. See also [Section 4.2.25 BRSTmr](#).



3.3.8 Alarm! Control Filter Clogged

The control filter is clogged and needs to be cleaned. It generally indicates a problem with the main filter, or the control filter has been used too long and needs to be replaced. This alarm is activated when CFDPS-AI has been activated for 5 seconds. Press the OK button to reset the alarm. See [Section 4.2.14 CFDPS-AI](#).

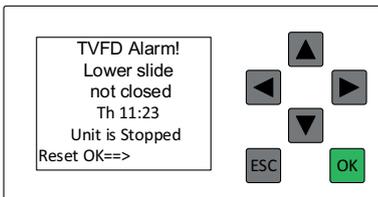


3.3.9 TVFD Alarm! Lower Slide Not Closed

The TVFD Lower Solenoid Valve does not close while the dust bin is being emptied. TVFD-AI has expired. It can be caused by the following:

- The lower slide valve has not been activated as it should.
- Something can be stuck in the upper slide valve.
- The compressed air pressure hose has either been disconnected or the compressed air pressure is too low.

This message is only shown when TVFD advanced is activated.

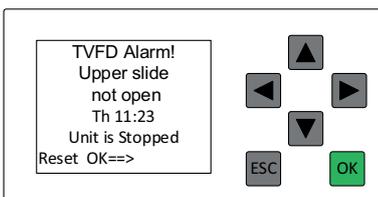


3.3.10 TVFD Alarm! Upper Slide Not Open

The TVFD Upper Solenoid Valve does not open while the dust bin is being emptied. TVFD-AI has expired. It can be caused by the following:

- The upper slide valve has not been activated as it should.
- Something can be stuck in the upper slide valve.
- The compressed air pressure hose has either been disconnected or the compressed air pressure is too low.

This message is only shown when TVFD advanced is activated.

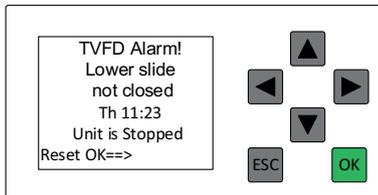


3.3.11 TVFD Alarm! Lower Slide Not Closed

The TVFD Lower Solenoid Valve does not close while the dust bin is being emptied. TVFD-AI has expired. It can be caused by the following:

- The lower slide valve has not been activated as it should.
- Something can be stuck in the lower slide valve.
- The compressed air pressure hose has either been disconnected or the compressed air pressure is too low.

This message is only shown when TVFD advanced is activated.

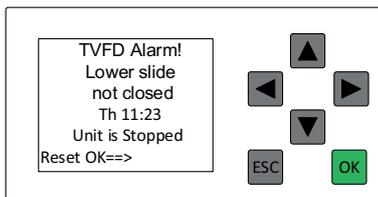


3.3.12 TVFD Alarm! Lower Slide Not Open

The TVFD Lower Solenoid Valve does not open while the dust bin is being emptied. TVFD-AI has expired. It can be caused by the following:

- The lower slide valve has not been activated as it should.
- Something can be stuck in the lower slide valve.
- The compressed air pressure hose has either been disconnected or the compressed air pressure is too low.

This message is only shown when TVFD advanced is activated.

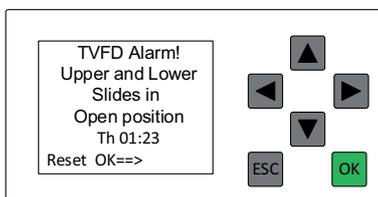


3.3.13 TVFD Alarm! Slides In Open Position

Both TVFD slide valves are open, which puts the unit into Off mode. It can be caused by the following:

- One of the slide valves has not been activated as it should.
- Something can be stuck in one of the slide valves.
- The compressed air pressure hose has either been disconnected or the compressed air pressure is too low.

This message is only shown when TVFD advanced is activated.



3.3.14 Alarm! Dustbin Full

When a level indicator set for a time delay of 30 minutes is activated, then when the delay has elapsed a message "Alarm! Dustbin Full" appears on the display and the unit is stopped.

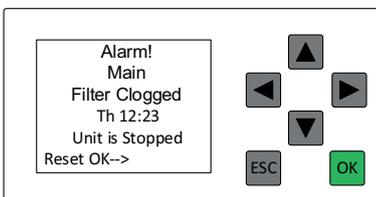
Empty the dust bin and press the OK button to reset the Alarm.



3.3.15 Alarm! Main Filter Clogged

When the Delta pressure indicator is set, the MFDPS-AI timer starts to count down. When the set time has elapsed (T = 30.00 m), then the message, "Alarm Main Filter Clogged" appears on the display and the Start/Stop button starts to flash. The unit is stopped. Fix the problem with the clogged filter.

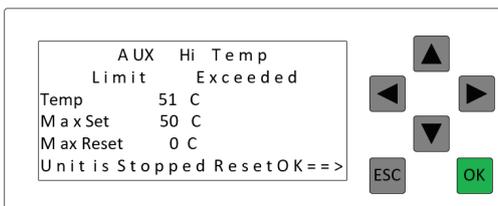
Press the OK button to reset the Alarm.



3.3.16 AUX Hi Temp Limit Exceeded

This message is displayed when AUX temperature exceeds the "Max Set" temperature limit-setting and stop delay timer is elapsed. See AUX Setting.

When the AUX temperature is below the "Max Reset" temperature limit. Press the green OK button to reset the alarm.

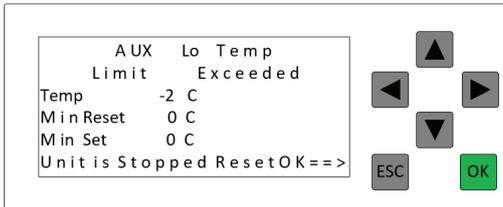


Temp	51 C	→	Shows the actual temperature value
MaxSet	50 C	→	Shows Max Set Temperature limit setting
MinReset	50 C	→	Shows Max Reset Temperature limit setting
TimeToUnitStop	31:00	→	Shows the remaining time until the unit stops
Default settings Max Set = Max Reset = 50 C			

3.3.17 AUX Lo Temp Limit Exceeded

This message is displayed when AUX temperature is below the “Min Set” temperature limit-setting and stop delay timer is elapsed. See AUX Setting.

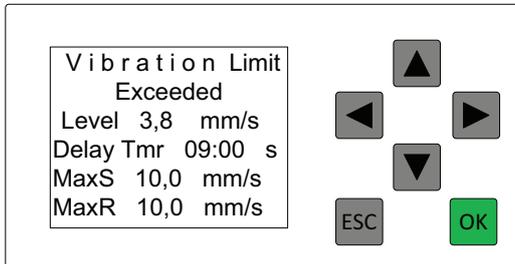
When the AUX temperature is above the “Min Reset” temperature limit. Press the green OK button to reset the alarm.



Temp	51 C	→	Shows the actual temperature value
Min Reset	0 C	→	Shows Min Reset Temperature limit setting
Min Set	0 C	→	Show Min Set Temperature limit setting
TimeToUnitStop	32:00	→	Shows the remaining time until the unit stops
Default settings Min Reset = Min Set = 0 C			

3.3.18 Vibration Limit Exceeded

This alarm displays when the vibration sensor measurement has been above the vibration limit value and the vibration delay timer elapsed. See VibrSetting.



MaxS = Default =10mm/s
 MaxR = Default =10mm/s
 Delay Tmr = Default 10s

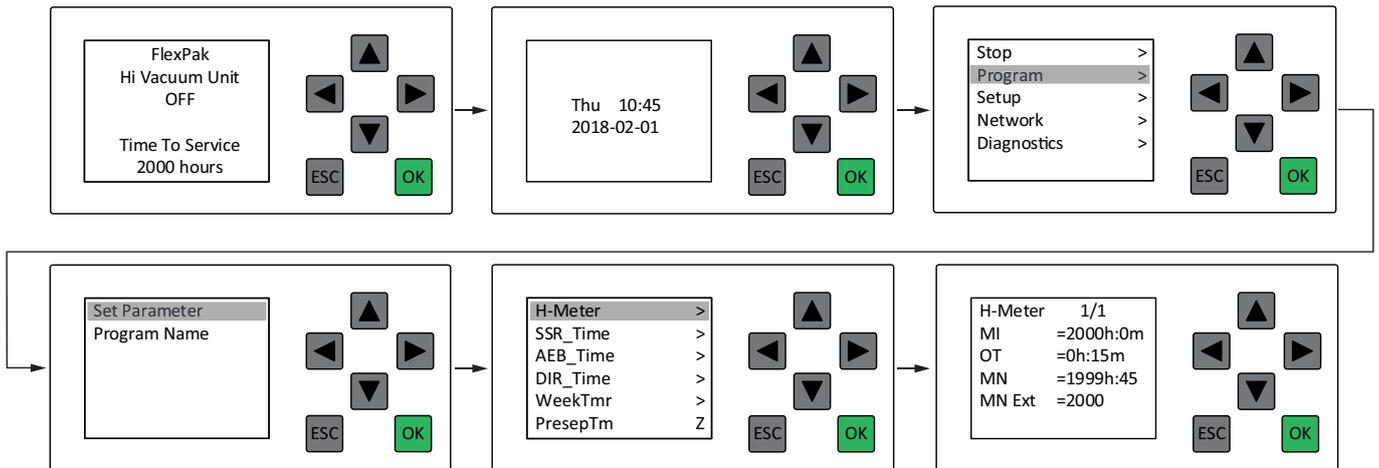
Level	3.8 mm/s	→	Shows the actual vibration value
DelayTmr	09:00 s	→	Shows the remaining time of the Stop delay timer
MaxS	10 mm/s	→	Shows Max SET vibration limit setting
MaxR	10 mm/s	→	Shows Max RESET vibration limit setting

NOTE! If this alarm activates, do not reset and restart the FlexPAK. It is very inappropriate and a risk of personal injuries if the fan is restarted before carefully investigating the cause of the vibration stop. Before starting the FlexPAK pump, make sure that the Side Chanel Fan is not damaged in any way. Rotate the fan manually and check that it rotates freely and no scraping noise comes from it. Look at the exterior of the fan for cracks or other anomalies. The pump can be started when a careful examination is done and no errors can be identified or other suspected causes can be detected. Be ready to stop the pump immediately if any detectable noise or vibration from the pump can be identified.

4 PLC settings

The following PLC displays show the different settings that can be configured for the unit.

4.1 Find a parameter and set its value



Do the following to find a parameter and set its value:

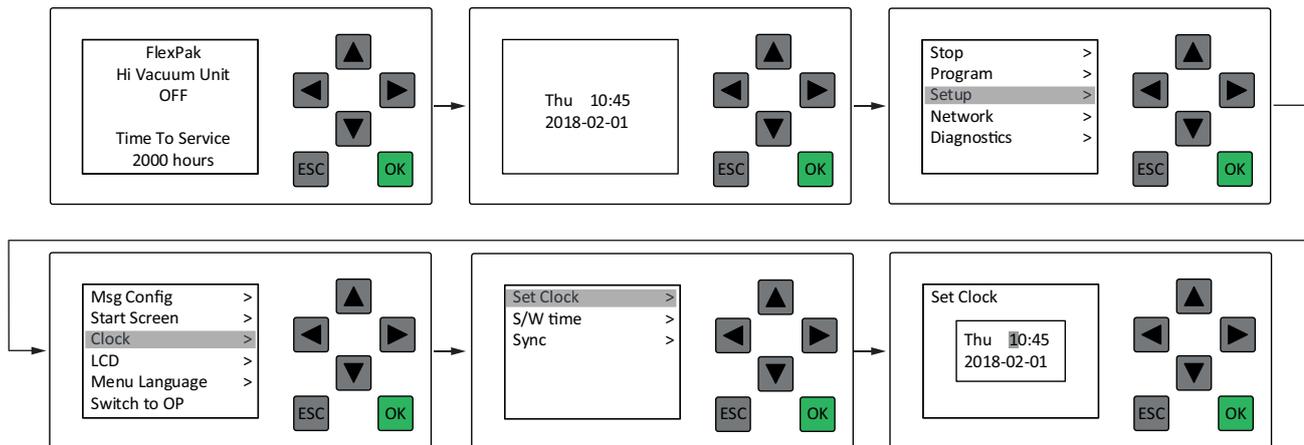
- 1 From the PLC status screen, press the down arrow to go to the date and time screen.
- 2 Press Escape to go to the main menu.
- 3 Press the Down arrow to go to Program. Press OK to confirm.
- 4 Select Set Parameter. Press OK to confirm.
- 5 Use the Up or Down arrows to find the parameter. Press OK to confirm.
- 6 Use the Left and Right arrows to select a value.
- 7 Use the Up or Down arrows to set the value. Press OK to confirm.
- 8 Press Escape to go to the main menu.
- 9 Press Escape to go to the date and time screen.
- 10 Press the Up arrow to exit.

NOTE!

- There are several other input menus on the same level as the date and time screen. If pressing the Down arrow takes the PLC to one of those menus. Use the Left arrow to get to the date and time screen.
- The blinking cursor shows the current value that can be changed.

4.2 Parameter settings

4.2.1 Adjust the time and date



Do the following to adjust the time and date:

- 1 From the PLC status screen, press the Down arrow to go to the date and time screen.
- 2 Press Escape to go to the main menu.
- 3 Press the Down arrow to go to Setup. Press OK to confirm.
- 4 Press the Down arrow to go to Clock. Press OK to confirm.
- 5 Press the Down arrow to go to Set Clock. Press OK to confirm.
- 6 Use the Left and Right arrows to move the cursor to the parameter value. Press OK to confirm.
- 7 Use the Up or Down arrows to set Time or Date. Press OK to confirm. Weekday is automatically set by the date.
- 8 Press Escape 3 times to go to the time screen.
- 9 Press the Up arrow to exit.

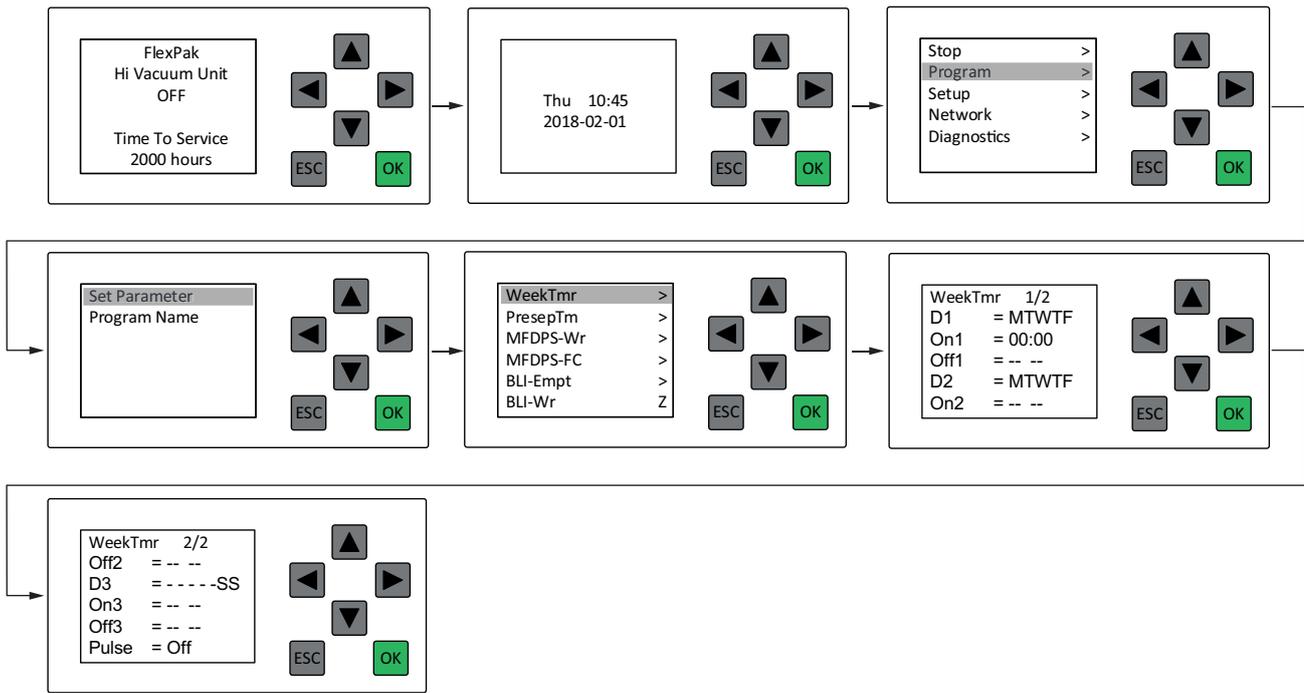


NOTE!

There are several other input menus on the same level as the date and time screen. If pressing the Down arrow takes the PLC to one of those menus, use the Left arrow to get to the date and time screen.

4.2.2 Set the weekly timer - WeekTmr

The WeekTmr sets the unit to "Stand By" mode and "Off Mode" at preset times. If the pilot signal "PS" is active and the Vacuum unit is in Standby mode, the unit starts.



Do the following to set WeekTmr:

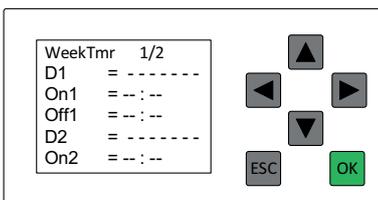
- 1 From the PLC status screen, press the Down arrow to go to the date and time screen.
- 2 Press Escape to go to the main menu.
- 3 Press the Down arrow to go to Program. Press OK to confirm.
- 4 Select Set Parameter. Press OK to confirm.
- 5 Use the Up or Down arrows to find WeekTmr. Press OK to confirm.
- 6 Use Right, Left, Up and Down arrows to select a value and change settings. Press OK to confirm.



NOTE!

There are several other input menus on the same level as the date and time screen. If pressing the Down arrow takes the PLC to one of those menus, use the Left arrow to get to the date and time screen.

Daily AM setting

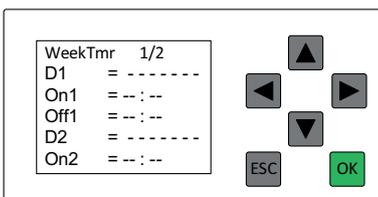


D1: = MTWTF: Default setting; Monday, Tuesday, Wednesday, Thursday and Friday.

On1 = Time the unit is set to 'Standby' at chosen D1 days. The default setting is no preset time.

Off1 = The time the unit is set to 'Off' on chosen D1 days. The default setting is no preset time.

Daily PM setting

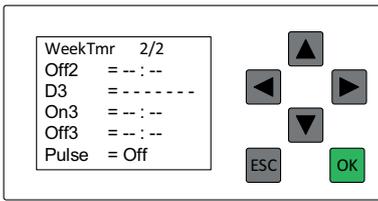


D2 = MTWTF: Default setting; Monday, Tuesday, Wednesday, Thursday and Friday.

On2 = Time the unit is set to 'Standby' at chosen D2 days. The default setting is no preset time.

Off2 = The time the unit is set to 'Off' on chosen D2 days. The default setting is no preset time.

Weekend or second shift setting



D3 = ____SS: Default setting; Saturday and Sunday.

On3 = __: Default setting Time the unit set to 'Stand By' on chosen D3 days. The default setting is no preset time.

Off3 = The time the unit is set to 'Off' on chosen D3 days. The default setting is no preset time.

Example:

D3=____SS	Saturday, Sunday	
On3 = 09:00	The unit starts at 9:00 in the morning	Saturday, Sunday
Off3 = 13:00	The unit Stops at 13:00 in the afternoon	Saturday, Sunday

NOTE!

- Pulse = Off: The pulse parameter must always be set to Off.
- When the timer stops the unit and a valve at a workstation is in its open position, the unit will start immediately once the timer puts the unit in standby mode.

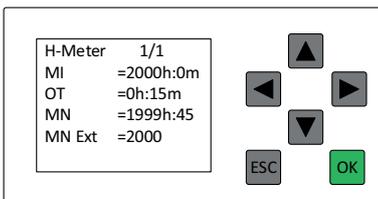
It is not necessary to use the timer function. The function can be switched off by setting the display to show only dashes. However, it is recommended that the timer function is used, as this ensures that the unit is switched off even when a valve remains open, for example, overnight.

NOTE!

If WeekTmr has been activated, the amount of time the unit can be used during the day before it automatically goes into Off mode can be extended if the optional external standby button accessory is used, see [Section 4.2.21 OTTmr](#).

4.2.3 H-Meter

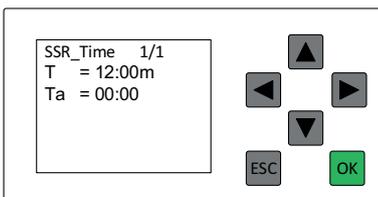
Menu for setting the service interval. The default value is 2000 hours.



MI: The amount of time between service intervals

4.2.4 SSR_Time

Menu for setting the SSR timer. The SSR timer is for the amount of time before the unit goes from Idling mode to Standby mode when the pilot signal disappears.



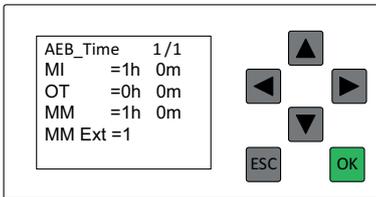
T: Time before SSR_Time is activated. The default setting is 12 minutes. The minimum setting is 5 minutes.

Ta: The elapsed time since the pilot signal disappeared

4.2.5 AEB_Time

Menu for Automatic Emptying of the collector Bin, interval Timer settings. This function is only available when BinAuto is set to 'On', see [Section 4.2.17 Auto empt.](#). When AEB_Time elapses, it activates the dust bin emptying sequence with either the AEB - Flap Valve, simple TVFD, Advance TVFD or pre-separator.

The counter is active only in running mode and pauses the timer in standby/Off and idling mode. Time is saved even if the unit is disconnected from power.



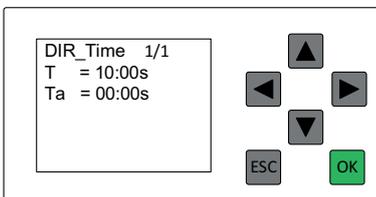
MI: Time between automatic emptying of the collector bin. The default setting is 1 hour.

OT: Do not change. Default is 0.

MM: Time left to automatic emptying of the collector bin

4.2.6 DIR_Time

Menu for setting the DIR timer. The DIR timer is the amount of time before the unit goes from Running mode into Idling mode when the pilot signal disappears.

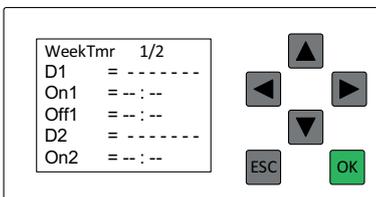


T: Time before DIR_Time is activated. The default setting is 10 seconds. The minimum setting is 5 seconds.

Ta: The elapsed time since the pilot signal disappeared

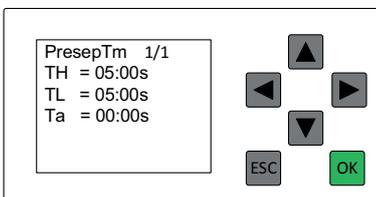
4.2.7 WeekTmr

See [Section 4.2.2 Set the weekly timer - WeekTmr.](#)



4.2.8 PresepTm

Menu for AEB-Flap Valve, simple TVFD and pre-separator opening cycle settings. See [Chapter 5 Automatic bin emptying function.](#)



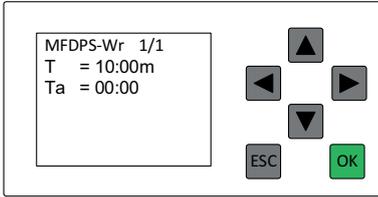
TH: The default setting is 5 seconds

TL: The default setting is 5 seconds

The value to use for 'TL' and 'TH' depend on the chosen function

4.2.9 MFDPS-Wr

Menu for setting the Main Filter Differential Pressure Sensor Warning (MFDPS-Wr) delay timer. When the Main Filter pressure sensor monitoring detect High dP across Main Filter, MFDPS-Wr is activated, and the delay timer has expired, the Main Filter Clogged warning message is activated. See [Section 3.2.2 Warning! Main Filter Clogged](#).

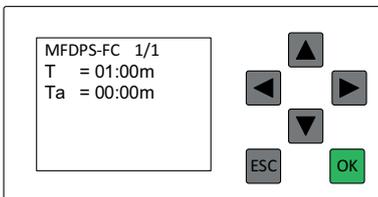


T: Time before MFDPS-Wr is activated. The default value is 10 minutes.

Ta: The elapsed time since High dP across Main Filter was detected

4.2.10 MFDPS-FC

Menu for setting the Main Filter Differential Pressure Sensor Filter Cleaning (MFDPS-FC) delay timer. When the Main Filter pressure sensor monitoring detect High dP across Main Filter, MFDPS-FC is activated, and the delay timer for MFDPS-FC has expired, it activates automatic filter cleaning if DPFClean is activated, see [Section 4.2.38 DPFClean](#). If PSIFC is set to 'On', the filter cleaning sequence will not be activated.



T: Time before MFDPS-FC is activated. The default setting is 1 minute.

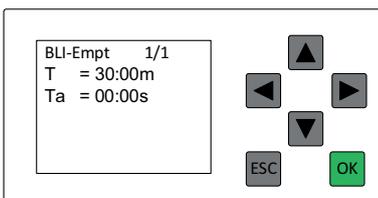
Ta: The elapsed time since High dP across Main Filter was detected

4.2.11 BLI-Empt dl

Menu for setting the BLI emptying delay time for the bin level indicator. This function is only available when Li-Auto is set to 'On', see [Section 4.2.18 LiAuto empty](#).

When the BLI signal disappears, the BLI-Empt delay timer is activated, when the timer elapses, the timer activates the dust bin emptying sequence with either the AEB - Flap Valve, simple TVFD, Advance TVFD or pre-separator.

If AEB-TVFD is set to 'On', in other words, the AEB-Flap Valve is chosen, the bin emptying sequence is interlocked when PSIFC is set to 'On'. See [Section 4.2.30 PSIFC](#).

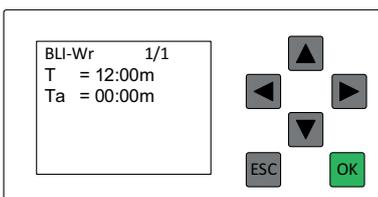


T: Time before BLI-Empt is activated. The default is 30 minutes.

Ta: The elapsed time since the BLI-Wr warning message was activated

4.2.12 BLI-Wr

Menu for setting the delay time for the Bin Level Indicator warning message. When the BLI signal disappears, the BLI-Wr timer is activated. When the timer elapses, the message 'Warning! Dustbin Full' is activated, see [Section 3.2.3 Dustbin Full](#).

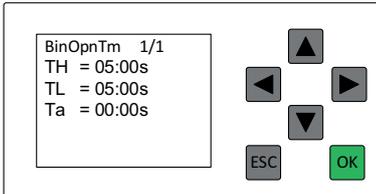


T: Time before message "Warning! Dustbin Full" is activated. The default is 12 minutes.

Ta: Elapsed time since the BLI-sensor was activated

4.2.13 BinOpnTm

Menu for AEB-Flap Valve, simple TVFD and pre-separator opening cycle settings. See [Chapter 5 Automatic bin emptying function](#).



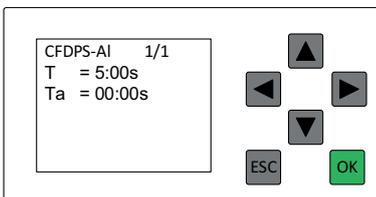
TH: Default value five seconds

TL: Default value five seconds

The value to use for 'TL' and 'TH' depend on the chosen function

4.2.14 CFDPS-AI

Menu for setting the delay time for the Control Filter DP Sensor Alarm (CFDPS-AI). When the Control Filter pressure sensor monitoring detect High dP across Control Filter, the CFDPS-AI timer is activated. When this timer has elapsed, the unit goes into Off mode and an alarm is displayed in the PLC. See [Section 3.3.8 Alarm! Control Filter Clogged](#).

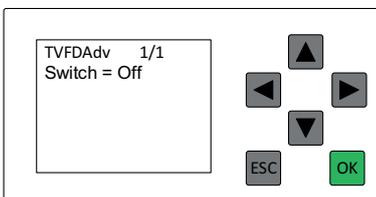


T: Time before CFDPS-AI is activated. The default setting is 5 seconds.

Ta: The elapsed time since High dP across Control Filter was detected

4.2.15 TVFDAdv

Menu for activating the advanced TVFD where an upper and a lower position sensor are used to detect TVFD valve position.

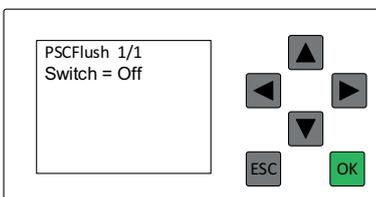


Switch=Off is the default setting; advanced TVFD is deactivated. Simple TVFD, AEB or pre-separator is activated.

To activate advanced TVFD, set Switch=On

4.2.16 PSCFlush

Menu for activating flushing of the duct system. When 'Switch=Off', flushing is timer controlled. When 'Switch=On', flushing is controlled by the pilot signal; flushing takes place when the pilot signal disappears. See [Section 4.2.30 PSIFC](#) and [Section 4.2.32 FlushTmr](#).

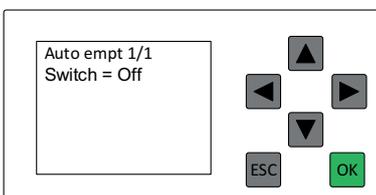


Switch=Off is the default setting. PSCFlush is deactivated.

To activate PSCFlush set Switch=On

4.2.17 Auto empt.

Menu for activating the Automatic Emptying of collector Bin interval Timer (AEB_Time), see [Section 4.2.5 AE-B_Time](#).

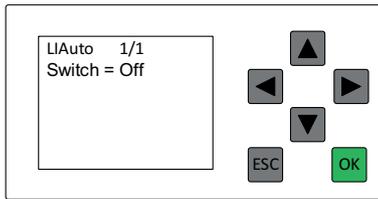


Switch=Off is the default setting; the BinAuto timer is off.

To activate AEB_Time, set Switch=On

4.2.18 LiAuto empty

Menu for activating Bin Level Indicator Automatic Emptying of Bin (BLI-Empt), see [Section 4.2.11 BLI-Empt dl](#).



Switch=Off is the default setting; LiAuto is deactivated.

To activate LiAuto, set Switch=On

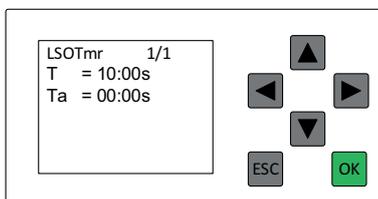
4.2.19 LSOTmr

Menu for setting the amount of time the TVFD Solenoid Lower Valve (SLV) is open for bin emptying. LSOTmr is only used if TVFDAdv is activated (Switch=On). This message is only used when TVFD advanced is activated



NOTE!

LSOTmr cannot be set to a value equal to or greater than TVFD-AI, that is $LSOTmr < TVFD-AI$.

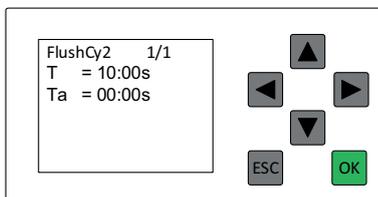


T: Amount of time the SLV to be open. The default setting is 10 seconds.

Ta: The elapsed time since SLV has been opened

4.2.20 FlushCy2

Menu for setting the amount of time for automatic flushing of the duct system by flushing valve 2 (SFV2). FlushCy2 is activated by FlushCy1.



T: Time flush valve 2 (SFV2) is open. The default setting is 10 seconds.

Ta: The elapsed time since the flushing cycle started

4.2.21 OTTmr

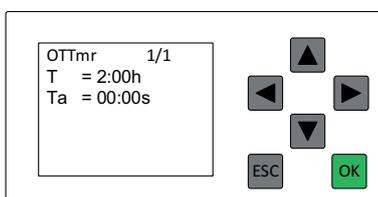
Menu for setting the overtime timer. If the unit needs to be used after WeekTmr has expired, the unit can be turned on for a set number of hours by pressing the external standby button. When the OTTmr expires, the machine goes back into Off mode.

If the unit is in Off mode and WeekTmr is not used, quickly pressing the external standby button (less than 2 seconds) puts the unit into Standby mode for the time set in 'T', for example, two hours. See the figure below.

If the unit is in Standby mode and WeekTmr is not used, quickly pressing the external standby button (less than 2 seconds) puts the unit into Off mode after the time set in 'T', for example, two hours. See the figure below.

If WeekTmr is being used, quickly pressing the external standby button (less than 2 seconds) keeps the unit in Standby mode for an additional two hours after the closing time set in WeekTmr, see [Section 4.2.2 Set the weekly timer - WeekTmr](#).

To reset OTTmr so that the time is not extended, press the external standby button longer than 2 seconds and then release.



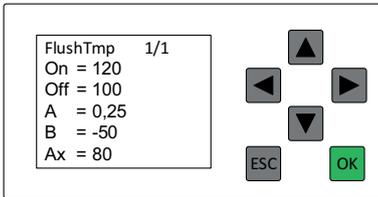
T: Extra time before the unit goes into Off mode. The default setting is 2 hours.

Ta: The elapsed time since the overtime timer started.

4.2.22 FlushTmp

Menu for temperature settings for regulating the fan’s outgoing air with the help of the flush valve (SFV1). When the air temperature of outgoing air reaches the value set by FlushTMP, the flush valve (SFV1) opens to let in the air in the system to reduce the outgoing air’s temperature.

NOTE! When the valve is open, the vacuum level from the workstations pipes leading to the main pipe can be reduced. However, the flow in the main pipe partially increases flushing out dirt and debris.



On: The temperature limit that is set to open flushing valve 1 (SFV1). The default setting is 120°C (248°F).

Off: The temperature limit that is set to close the flush valve. The default setting is 100°C (212°F).

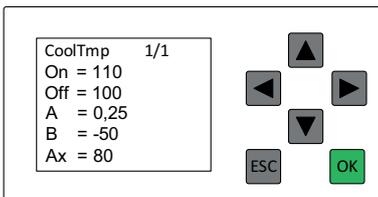
Ax: The current temperature of air exiting the system

4.2.23 CoolTmp

CoolTmp cools the vacuum pump by opening the Cleaning Valve V1 “SCV”.

When the fan’s outgoing air temperature is over the CoolTmp threshold, CoolTmp is activated and opens Cleaning Valve V1 “SCV”, and then closes the valve below the threshold level CoolTmp Off.

NOTE! When the valve is open, the vacuum level from the workstations pipes leading to the main pipe can be reduced.



On: The default temperature limit that is set to open Cleaning Valve V1 “SCV”. The default setting is 110°C (230°F).

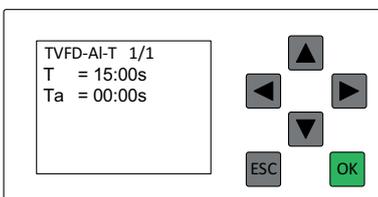
Off: The temperature limit that is set to close the Cleaning Valve V1 “SCV”. The default setting is 100°C (212°F).

Ax: The current temperature of air exiting the system

4.2.24 TVFD-AI-Tmr

Menu for setting the maximum closing and opening times for both the upper and lower TVFD slides. If the upper or lower TVFD slides do not close or open within the set time, an alarm is activated. This message is only used when TVFD advanced is activated. See:

- [Section 3.3.9 TVFD Alarm! Lower Slide Not Closed](#)
- [Section 3.3.10 TVFD Alarm! Upper Slide Not Open](#)
- [Section 3.3.11 TVFD Alarm! Lower Slide Not Closed](#)
- [Section 3.3.12 TVFD Alarm! Lower Slide Not Open](#)

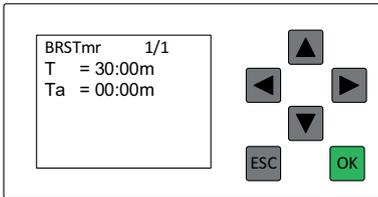


T: Maximum time for the upper and lower TVFD slides to close or open. The default setting is 15 seconds.

Ta: The elapsed time since the closing or open cycle began

4.2.25 BRSTmr

Menu for setting the maximum amount of time the Bag Replacement Switch (SC2) can be activated. When this timer has elapsed, the unit turns off and goes into Off mode and an alarm message is displayed in the PLC. See [Section 3.3.7 Bag Replacement Switch Time Out](#).



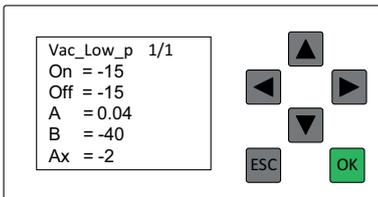
T: The maximum amount of time set for SC2 to be activated. The default setting is for 30 minutes.

4.2.26 Vac_Low_Pmp

Menu for setting the warning level for Low vacuum in the pump.

When the vacuum level is above the set limit value, a warning message appears on the display. The warning message is delayed to filter messages that would otherwise be activated by temporary pressure changes in the pump. This is to avoid unnecessary and annoying warning messages.

In other words, if the limit is set to -15kpa and the pressure in the pump is -14kPa, the alarm will be activated when the VacLoTmPmp delay timer has expired. See [Section 3.2.5 Warning Low Vacuum](#)



Limit setting: Vaccum 15kPa = Pressure -15kPa

Default setting: On = -15 kPa

Default setting: Off = -15 kPa

Ax: The current vacuum level.

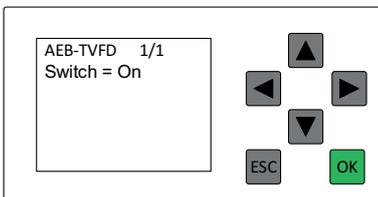
NOTE! On and Off must have the same limit value.

4.2.27 AEB-TVFD

Menu for choosing between the AEB-Flap Valve or simple TVFD for automatic bin emptying:

- AEB-TVFD = Off: Simple TVFD is selected.
- AEB-TVFD = On: AEB-Flap Valve is selected.

When the AEB-Flap Valve is activated, the TVFD solenoid upper valve is closed and the unit's motor is slowed down when the collector bin is being emptied. The Solenoid Upper Valve can be used to control a Duct isolation valve. When Simple TVFD is activated, the motor is not slowed down when the collector Bin is being emptied. See [Chapter 5 Automatic bin emptying function](#).

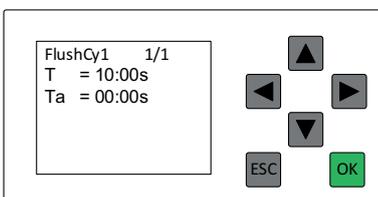


Switch: On is the default setting. AEB-TVFD is activated

To deactivate AEB-TVFD set Switch=Off

4.2.28 FlushCy1

Menu for setting the amount of time for automatic flushing of the duct system by flushing valve 1 (SFV1). If PSCFlush is deactivated, FlushCy1 is activated by FlushTmr. If PSCFlush is activated and there is no pilot signal.



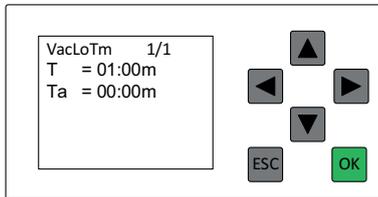
T: 'T' is how long the flushing valve 1 (SFV1) is open. The default setting is 10 seconds.

Ta: The elapsed time since the flushing cycle started

4.2.29 VacLoTmPmp

Delay Timer for "Warning! Low Vacuum", see [Section 3.2.5 Warning Low Vacuum](#) and [Section 4.2.26 Vac_Low_Pmp](#).

This timer delays showing the message "Warning! Low Vacuum" when the vacuum is too low in the system. The timer serves as a filter to remove short-term vacuum variations in the system. When the timer expires, the message "Warning! Low Vacuum" is displayed.



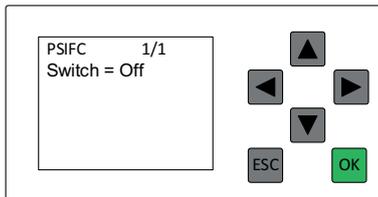
T: The default setting is 1 minute delay

Ta: Shows the current delay time

4.2.30 PSIFC

Menu for activating Pilot Signal Interlock Filter Cleaning (PSIFC). Filter cleaning does not take place until the pilot signal has disappeared and DIR_Time has expired, see [Section 4.2.6 DIR_Time](#).

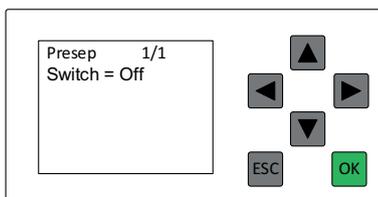
If AEB-TVFD is set to 'On', in other words, AEB-Flap Valve opening is chosen, the bin emptying sequence is also interlocked when there is a pilot signal to the unit.



Switch: Off is the default setting

4.2.31 Presep

Menu for activating automatic emptying of two pre-separators. This cannot be used together with TVFD. Presep activates PresepTm to control the TVFD Solenoid Upper Valve (SUV). It uses BinOpnTm to control the TVFD Solenoid Lower Valve (SLV). See [Chapter 5 Automatic bin emptying function](#).

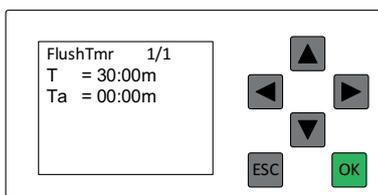


Switch: Off is the default setting; Presep is deactivated and TFVD is activated

To activate Presep, set Switch=On.

4.2.32 FlushTmr

Menu for automatic flushing of the duct system with the interval timer. FlushTmr activates FlushCy1 and FlushCy2. FlushTmr is deactivated if PSCFlush is activated 'Switch=On', see [Section 4.2.16 PSCFlush](#).



T: Timer for duct system flushing. The default setting is 30:00m.

Ta: Shows the remaining time

4.2.33 FCDelay

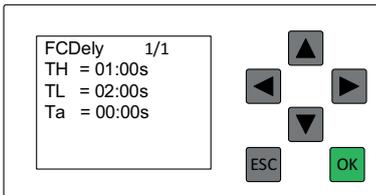
FCDelay is used in ATEX applications.

This function is used to prevent the safety damper, Duct Isolation Damper, from unintentionally opening during filter cleaning.

During filter cleaning, high-velocity air flows out of the filter housing through the safety damper Duct Insulation Damper, which may cause it to close.

To counteract this feature, FCDelay is activated to close the Duct Isolation Damper in order to isolate the pipe system before filter cleaning and minimize the risk that it accidentally closes.

For more information, see [Section 8.2 Tuning Duct Isolation Damper sequence](#).



TH: Default setting (Do not change this parameter value!)

TL: Default setting

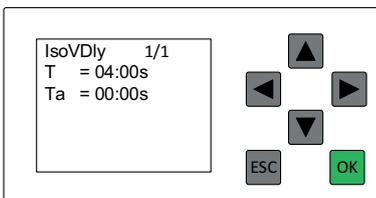
Ta: Elapsed time since Filter Cleaning Start Impulse was activated

4.2.34 IsoVDly

IsoVDly (T) is used in ATEX applications.

IsoVDly (T) is a delay timer to ensure that the Duct Isolation Damper is closed until the vacuum in the filter housing is higher than the duct system.

For more information, see [Section 8.2 Tuning Duct Isolation Damper sequence](#).



T: "Equalization Time". Delay after last FC pulse, occurs before Duct Isolation Damper open. The default setting is 4:00 seconds.

Ta: Elapsed time since delay started

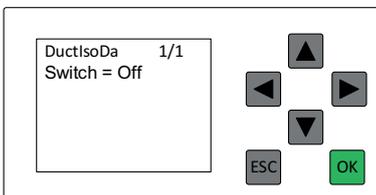
4.2.35 DuctIsoDamp

DuctIsoDamp is used in ATEX applications. This function enables the Duct Isolation Damper sequence function.

DuctIsoDamp is used to ensure that the safety damper, Duct Insulation Damper Safety Damper, does not deliberately close during filter cleaning.

When enabled, settings must be made by the Parameters (IsoVDly and FCDely).

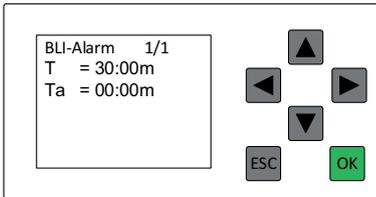
For more information, see [Section 8.2 Tuning Duct Isolation Damper sequence](#).



Switch: Off is the default setting

4.2.36 BLI-Alarm

Menu for setting the delay time for the Bin Level Indicator Alarm message. When the BLI signal disappears, the BLI-Alarm timer is activated. When the timer elapses, the Alarm message "Alarm! Dustbin Full" appears and the vacuum unit is stopped. See [Section 3.3.14 Alarm! Dustbin Full](#).



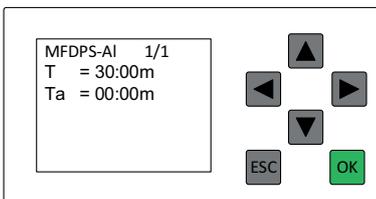
T: Time before Alarm! Dustbin Full message is activated. The default setting is 30 minutes.

Ta: Elapsed time since the BLI-sensor was activated

4.2.37 MFDPS-AI

Menu for setting the Main Filter Differential Pressure Sensor Alarm (MFDPS-AI) delay timer. When the Main Filter pressure sensor monitoring detect High dP across Main Filter, MFDPS-AI is activated. When the delay timer has expired, the "Alarm! Main Filter Clogged" message is activated. See [Section 3.2.2 Warning! Main Filter Clogged](#).

When the timer has expired, the unit stops.



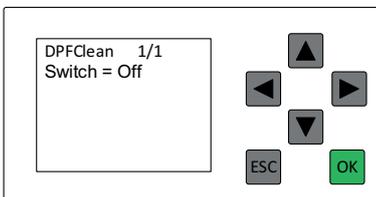
T: Time before MFDPS-AI is activated. The default is 30 minutes.

Ta: The elapsed time since High dP across Main Filter was detected.

4.2.38 DPFClean

Menu for activation and deactivation of DPFClean. When activated, this function causes the Main Filter Differential Pressure to activate cleaning of the main filter.

When the Main Filter pressure sensor monitoring detect High dP across Main Filter, it activates MFDPS-FC, which delays the start of the cleaning cycle. The delay is designed to filter away a temporarily high differential pressure over the main filter. See [Section 4.2.10 MFDPS-FC](#).

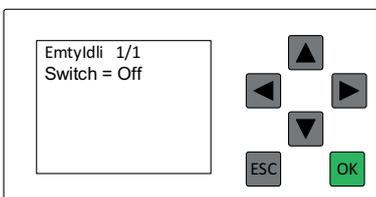


Switch: Off is the default setting; DPFClean is deactivated.

To activate DPFClean, set Switch=On.

4.2.39 EmtyIdli

Menu for activating automatic dust bin emptying when the unit goes into Idling Mode.

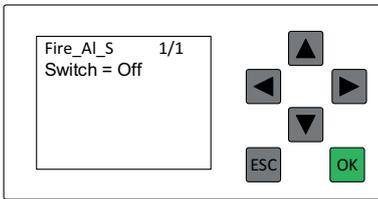


Switch: Off is the default setting. EmtyIdli is deactivated.

To activate EmtyIdli, set Switch=On.

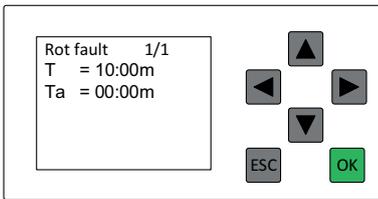
4.2.40 Fire_AI_Set

Parameter "Fire_AI_Set" sets the digital input DI10, to be sensitive to a high or low input signal. The input activates by either Low signal, e.g. "Fire Alarm" or by a High signal "RPS Rapture Panel Sensor" Se electrical schematics for more information on how to connect to sensor input.



Switch: On = Alarm when digital input10 = High (24V)
 Switch: Off = Alarm when digital input10 = Low (0V)

4.2.41 Rot fault AI



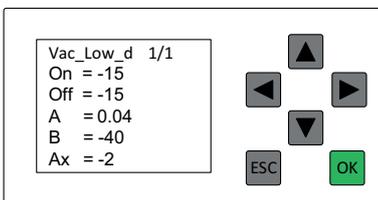
T: Delay before an alarm is triggered by a rotary valve fault. The default is 10 minutes.
 Ta: Time remaining for alarm.

4.2.42 Vac_Low_duct

Menu for setting the warning level for Low vacuum in the duct.

When the vacuum level is above the set limit value, a warning message appears on the display. The warning message is delayed to filter messages that would otherwise be activated by temporary pressure changes in the duct. This is to avoid unnecessary and annoying warning messages.

In other words, if the limit is set to -15kpa and the pressure in the duct is -14kPa, the alarm will be activated when the VacLoTmDct delay timer has expired. See [Section 3.2.5 Warning Low Vacuum](#)



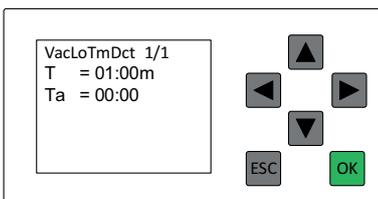
Limit setting: Vaccum 15kPa = Pressure -15kPa
 Default setting: On = -15 kPa
 Default setting: Off = -15 kPa
 Ax: The current vacuum level.

NOTE! On and Off must have the same limit value.

4.2.43 VacLoTmDct

Delay Timer for "Warning! Low Vacuum", see [Section 3.2.5 Warning Low Vacuum](#) and [Section 4.2.26 Vac_Low_Pmp](#).

This timer delays showing the message "Warning! Low Vacuum" when the vacuum is too low in the duct. The timer serves as a filter to remove short-term vacuum variations in the duct. When the timer expires, the message "Warning! Low Vacuum" is displayed.



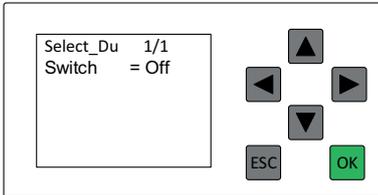
T: 00m default setting 1 minute delay
 Ta: 00m shows the current delay time

4.2.44 Select_Duct

Menu for changing the monitoring between the vacuum level in pump or duct. When the vacuum level is too low, a warning is triggered after a delay.

For pump monitoring, see: [Section 4.2.26 Vac_Low_Pmp](#) and [Section 4.2.29 VacLoTmPmp](#).

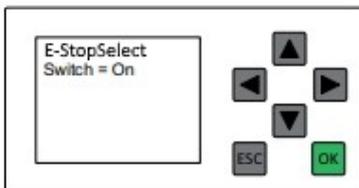
For duct monitoring, see: [Section 4.2.42 Vac_Low_duct](#) and [Section 4.2.43 VacLoTmDct](#).



Switch: Off = Pump vacuum monitoring.
 On = Duct vacuum monitoring.
 Off is the default setting.

4.2.45 E-StopSelect

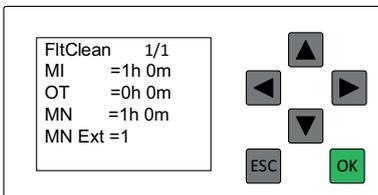
Menu for Allowing the signal that triggers Emergency stop Alarm to be high or low.



On: Emergency signal triggered when the signal is low at Digital input 6.
 Off: Emergency signal triggered when the signal is high at Digital input 6.

4.2.46 FitClean

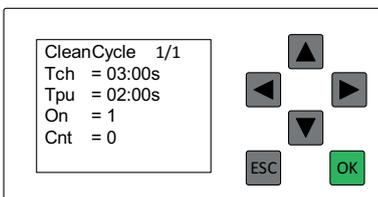
Menu for setting time between automatic filter cleanings. The counter is active only in running mode and pauses the timer in standby/Off and Idling mode. If PSIFC is on, the automatic filter cleaning is not active. See [Section 4.2.30 PSIFC](#).



MI= Time between automatic filter cleaning. Default is 1 hour.
 OT= do not change. Default is 0.
 MN= Time left to automatic cleaning.

4.2.47 Clean Cycle

The time duration for a cleaning cycle.



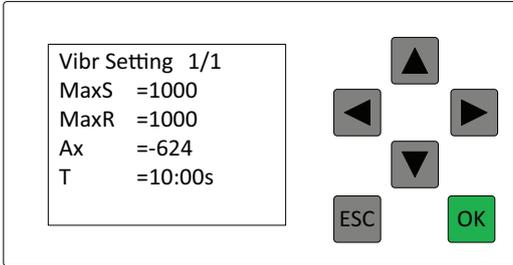
Tch: Vacuum building time (Charge time). The default is 3 seconds.
 Tpu: Clean pulse time. The default is 2 seconds.
 On: Number of cleaning pulses. Default and minimum is 1 pulse.
 Cnt: 0. Elapsed cleaning cycles.

NOTE!
 If On is set to 0, no filter cleaning is performed.

4.2.48 Vibr Setting

In the menu “Vibr Setting”, set parameter values related to sensors that monitor the Vibration level of the Pump/Side Chanel Fan.

To detect and protect the Side Channel Fan against abnormal vibrations, the unit can be equipped with a vibration sensor.



MaxS: The default is 10mm/s=1000.

MaxR: The default is 10mm/s=1000. Always set MaxR = MaxS!

T: The default is 10s

MaxS = 1000	→	(1000/100) = 10 mm/s	Max Set Vibration limit setting
MaxR = 1000	→	(1000/100) = 10 mm/s	Max Reset Vibration limit setting
Ax = 0		(Fan = Off)	Shows current output from vibration sensor
T = 10:00 s			Alarm delay timer

MaxS = Set Vibration Threshold

Maximum accepted vibration signal. If the Vibration signal passes above MaxS, the FlexPAK unit vibration alarm is activated. When the Vibration Alarm Delay Timer is elapsed = T, the unit stops.

MaxR = Reset Vibration Threshold

If Vibration Alarm is activated, and the Vibration Alarm Delay Timer is not elapsed = T > 0 and the Vibration signal pass below MaxR, the alarm is reset and FlexPAK is not stopped.

Ax = Vibration Sensor Signal

If FlexPAK is equipped with a vibration sensor the input signal value is 0 mm/s = 2Volt signal and 24mm/s = 10V Volt signal.

If FlexPAK is not equipped with a vibration sensor, the input signal is 0 volt.

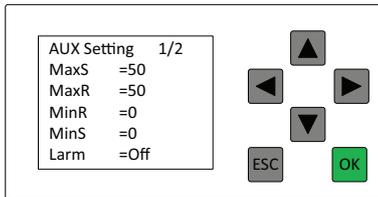
Moreover, with the software sensor scaling 0v is approximately -618 units, -6,18mm/s, this is irrelevant cause the sensor signal has only a positive sign. The minus sign comes because the input signal is 0V and it is below 2V = 0 mm/s, in fact, this means that there is no need to have a jumper on the vibration sensor input to disable the stop function.

T = Alarm Delay Timer

This timer is protection against temporary vibration peaks that occur when the unit is Cleaning, Accelerating, Breaking and against Air Oscillations that occur at low speed. The delay time lets the signal get stable before it activates the vibration alarm.

4.2.49 AUX Setting

In the menu "AUX Setting", set parameter values related to AUX temperature input.

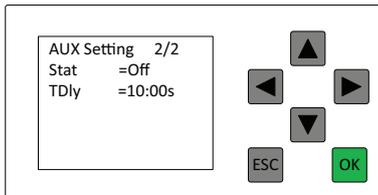


MaxS: The default is 50°C

MaxR: The default is 50°C. Always set MaxR = MaxS!

MinR: 0°C. Always set MinR = MinS!

MinS: 0°C



Larm: The default is Off

Stat: The default is Off

TDly: The default is 10:00 s

MaxS = Set Temperature Threshold

Maximum accepted Temperature. If the temperature passes above MaxS, the Max temperature alarm activates. When the Temperature Alarm Delay Timer is elapsed = TDly, the unit stops.

MaxR = Reset Temperature Threshold

If the temperature alarm is activated and Temperature Alarm Delay Timer not elapsed = TDly > 0 and the temperature is lower than MaxR, the alarm is reset and FlexPAK is not stopped.

MinS = Set Temperature Threshold

Minimum accepted Temperature. If temperature passes below MinS, the FlexPAK unit Min temperature alarm activates. When the Temperature Alarm Delay Timer is elapsed = TDly, the unit stops.

MinR = Reset Temperature Threshold

If the temperature alarm is activated and Temperature Alarm Delay Timer is not elapsed = TDly > 0 and the temperature is higher than MinR, the alarm is reset and FlexPAK is not stopped.

Larm = Larm Activation

If Stat = off, AUX Sensor Activation. The Warning and Alarm functions are disabled.

If parameter Larm = off, only Warning messages are displayed when the Aux temperature passes any of the Temperature Thresholds. Alarm/Stop functionality is disabled. If parameter Larm = on, Warnings and Alarm messages are displayed. Fan off function is enabled when the Aux temperature passes any of the Temperature Thresholds. Attention! The Alarm message and Fan stop function are time delayed. Alarm time delay is set in parameter TDly.

Stat = AUX Sensor Activation

Set parameter Stat = On, Temperature sensor installed

Set parameter Stat = Off, Temperature sensor not installed

TDly = Alarm Time Delay

This parameter sets Alarm Time Delay in seconds.

4.2.50 MFdP Setting

In the menu “MFdP Setting”, set parameter values related to sensors that monitor the Main Filter. Set parameters in this menu if an analogue pressure sensor is installed

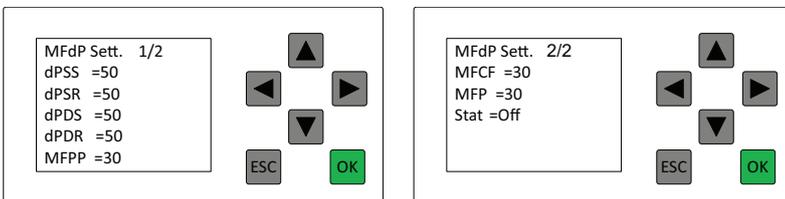
The default setting for “MFdP Setting” is monitored by a dP Switch. To install a dP Switch, remove the jumper on the terminal and replace it with a dP switch. The dP Switch requirement is normally closed function when measured dP is less than the set value of the dP switch. Parameter “Stat = Off”

If an analogue pressure sensor is installed set parameter “Stat = On” to activate the analogue sensor monitoring.

If the monitoring system detects that the dp across the Main filter passes a high dP limit, it activates the Main Filter Warning and Alarm delay timers. When the Warning delay timer elapses the “Warning! Main Filter Clogged” is displayed after a time. When the Alarm delay timer elapses, the fan stops and simultaneously the “Alarm! Main Filter Clogged” is displayed.

Warning and Alarm delay timers have different settings. The warning delay time is always shorter than the Alarm delay time.

See Message, Warning! Main Filter Clogged, “Alarm! Main Filter Clogged” and parameters [Section 4.2.9 MFD-PS-Wr](#) and [Section 4.2.37 MFDPS-AI](#).



NOTE! Always set dPSS = dPSR and dPDS = dPDR. 50hPa = 5kPa.

dPSS = 50	Max dp Across Filter System	Default 50hPa
dPSR = 50	Max dp Across Filter System	Default 50hPa
dPDS = 50	Max dp Across Main Filter	Default 50hPa
dPDR = 50	Max dp Across Main Filter	Default 50hPa
MFPP = 30	Calculated dP Across Filter System	hPa
MFCF = 30	Calculated dP Across Main Filter	hPa
MFP = 30	Main Filter Pressure Sensor signal	hPa
Stat = Off	Set Analog Sensor monitoring on/off	Default = Off

The Analog Sensor uses ambient pressure as a reference to the measured pressure. To get the Main filter dP pressure with a positive sign, calculate it with the formulas;

Filter System dP and **Main Filter dP**, see [Figure 4](#).

Setting high dP limit, Max dP limit across Filter System

These parameters are used if only the Main Filter Sensor is installed.

dPSS = dPSR = Max dP limit across Filter System

Setting high dP limit, Max dP limit across Main Filter

These parameters are used if both the Main and Control filter sensors are installed.

dPDS = dPDR = Max dP limit across Main Filter

4.2.51 CFdP Setting

In the menu “CFdP Setting”, set parameter values related to sensors that monitor the Control Filter.

Control Filter monitoring can be done by an analogue pressure sensor or digital dP Switch. When the monitoring detects high dP across Control Filter the “Alarm! Control Filter Clogged” is displayed and the FlexPAK fan stops.

See Alarm Message, “Alarm! Control Filter Clogged” and parameter [Section 4.2.14 CFDPs-AI](#).

Digital dP Switch monitoring

The default setting for “CFdP Setting” is Stat = Off, which means the monitoring of dP Switch.

The only requirements to install a dP Switch are to replace the pre-installed jumper with a dP switch. The Dp Switch requirements are normally closed functions when measured dP is less than the set value of the dP switch.

Analog dP Sensor monitoring

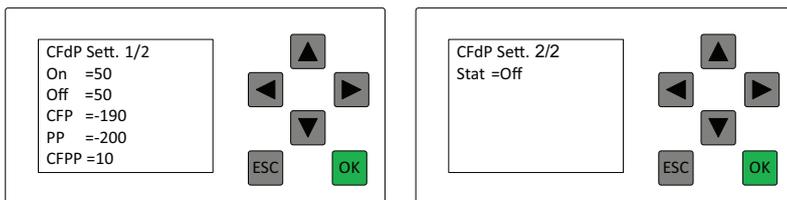
If an Analog sensor is installed, set parameter Stat = On to activate analogue monitoring.

The Analog Sensor uses ambient pressure as a reference to the measured pressure. To get the Main filter dP pressure with a positive sign, calculate it with the formula;

(CFP-PP) = CFPP “Control Filter dP”, PP = Pump Pressure.

Setting high dP limit, Max dP limit across Control Filter

Maximum accepted dp across Control Filter if differential pressure pass above value in parameter “On”, the “Alarm! Control Filter Clogged” alarm activates, and the FlexPAK stops. Always set parameter On = Off.



NOTE! Always set On = Off. 50hPa = 5kPa.

On = 50	Max dp Set Alarm	Default 50hPa
Off = 50	Max dp Reset Alarm	Default 50hPa
CFP = -190	Pressure CF Sensor	hPa
PP = -200	Pressure Pump/Fan sensor	hPa
CFPP = 10	Calculated dP across Control Filter	hPa
Stat = Off	Set Analog Sensor monitoring on/off	Default = off

4.2.52 Rot valve

Rotary valve can be activated in three different ways:

- Auto emptying: Rotary valve is timer controlled. Auto emptying is switched on with parameter Auto Empt. See [Section 4.2.17 Auto empt.](#) The time between emptying can be adjusted with parameter "T1".



NOTE!

Timer is only running when FlexPAK is in Running or Idling mode. Timer resets when FlexPAK is in Standby or off mode.

- Bin level indicator (BLI): See [Section 4.2.53 Rot valve LI.](#)
- Emptying then going to Idling: When FlexPAK goes to Idling mode the rotary valve is activates. Parameter Emtyldli activates this function. See [Section 4.2.39 Emtyldli.](#)

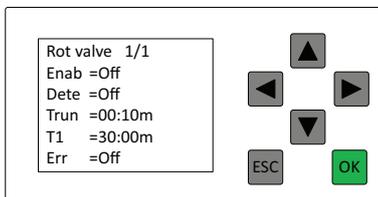
Length of time the rotary valve is running is adjusted with parameter "Turn".

Rotary valve can be equipped with a rotation detection sensor. If parameter "Dete" is on, the program is monitoring rotations.



NOTE!

FlexPAK will warn if there are more than five seconds between pulses from the sensor.



Enab: On if rotary valve installed.

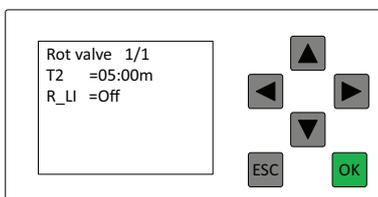
Dete: On if rotation detection installed.

Trun: Length of time during which the rotary valve runs.

T1: Time between rotary valve operations.

4.2.53 Rot valve LI

Rot valve LI is used when a Bin level indicator is connected. The Bin level indicator will activate the rotary valve when the sensor detects high level of dust or other particles are accumulated in the bin or container.



T2: Time delay before rotary valve starts after the level indicator indicates a high level.

R_LI: Level indicator installed for the rotary valve.

5 Automatic bin emptying function

5.1 AEB-Flap Valve settings

5.1.1 Hardware

- The AEB-Flap Valve controlled by the V11 TVFD (SLV) Solenoid Lower Valve.
- The duct isolation valve controlled by the V12 TVFD (SUV) Solenoid Upper Valve.

5.1.2 PLC Settings

- 1 Presep Switch = Off (standard setting).
- 2 AEB-TVFD Switch = On (standard setting).
- 3 TVFDAdv Switch = Off (standard setting).



NOTE!

- Presep overrides 2 above.
- If TVFDAdv is activated (Switch = On), TVFDAdv overrides 1 and 2 above.

5.1.3 Timer Settings

BinOpnTm

TL = Delay time to let the motor decrease speed and the TVFD Solenoid Upper Valve to close a duct isolation valve before bin emptying starts. The default is 5 seconds.

TH = Emptying Time. The default is 5 seconds.

PresepTm

TL = Delay to let the bin lid close before the motor increases speed and the TVFD Solenoid Upper Valve to open a duct isolation valve. The default is 5 seconds.

TH = Time delay to the next possible emptying sequence. The default is 5 seconds.

5.2 Simple TVFD Valve Settings

5.2.1 Hardware

Simple TVFD Valve controlled by the V11 TVFD (SLV) Solenoid Lower Valve and the V12 TVFD (SUV) Solenoid Upper Valve.

5.2.2 PLC Settings

- 1 Presep (Softkey) = Off (standard setting).
- 2 AEB-TVFD (Softkey) = Off (standard setting=On).
- 3 TVFDAdv (Softkey) = Off (standard setting).



NOTE!

- Presep overrides 2 above.
- If TVFDAdv is activated (Switch = On), TVFDAdv overrides 1 and 2 above.

5.2.3 Timer Settings

BinOpnTm

TL = Delay after the upper slide starts to close before the lower slide starts to open. The default is 5 seconds.

TH = Emptying Time. The default is 5 seconds.

PresepTm

TL = Delay after the lower slide starts to close before the upper slide starts to open. The default is 5 seconds.

TH = Time delay to the next possible emptying sequence. The default is 5 seconds.

5.3 Pre-Separator Settings

5.3.1 Hardware

- Pre-Separator 1 controlled by the V11 TVFD (SLV) Solenoid Lower Valve.
- Pre-Separator 2 controlled by the V12 TVFD (SUV) Solenoid Upper Valve.

5.3.2 PLC Settings

- 1 Presep (Softkey) = On (standard setting=Off)
- 2 AEB-TVFD (Softkey) =Off (standard setting=On)
- 3 TVFDAdv (Softkey) = Off (standard setting)



NOTE!

- Presep overrides 2 above.
- If TVFDAdv is activated (Switch = On), TVFDAdv overrides 1 and 2 above.

5.3.3 Timer settings: Pre-Separator 1

BinOpnTm

TL = Delay before Pre-Separator 1 starts bin emptying. The default is 5 seconds.

TH = Emptying Time. The default is 5 seconds.

5.3.4 Timer settings: Pre-Separator 2

PresepTm

TL = Delay after Pre-Separator 1 starts to close before Pre-Separator 2 starts to open.

TH = Emptying Time. Default 5 second

5.4 Advanced TVFD Valve Settings

5.4.1 Hardware

- TVFD (SUV) Solenoid Upper Valve (V12)
- TVFD (SLV) Solenoid Lower Valve (V11)
- TVFD Upper Position Sensor (UPS) monitoring slide valve (V12)
- TVFD Lower Position Sensor (LPS) monitoring slide valve (V11)

5.4.2 PLC Settings

- 1 Presep (Softkey) = Off (standard setting)
- 2 AEB-TVFD (Softkey) =Off (standard setting=On)
- 3 TVFDAdv (Softkey) = On (standard setting= Off)



NOTE!

- If TVFDAdv is activated (Switch = On), TVFDAdv overrides 1 and 2 above.

5.4.3 Timer settings

LSOTmr (Bin Emptying Time)

T = Timer sets the Open time (Emptying time) lower slide valve. Default 10 second

TVFD-AI

T = sets the maximum time that you can accept it will take to perform the slide valve closing sequences of the upper and lower slide. The default setting is 15 seconds. If the slide valves do not perform this sequence within the set time, the unit goes into Off mode.

5.5 Rotary valve settings

5.5.1 Hardware

- The rotary valve is started by a 24VDC signal
- Rotation detection device (optional), e.g. inductive proximity sensor
- Fault signal from rotary valve (optional) (active high)
- Level indicator (optional)

5.5.2 PLC settings

Rot valve:

Enab = ON

Dete = ON (if rotation detection installed)

Trun = Duration for which the rotary valve runs

T1 = Duration between rotary valve operations

Err = ON (if fault detection is installed)

Rot valve LI:

T2 = Period after the level indicator indicates before a rotary valve operation begins

R_LI = ON (if rotary valve level indicator is installed)

Rot fault:

T = Time before a rotary valve fault triggers an alarm

Auto empt. (softkey) = ON (enables periodic rotary valve operation)

6 Machining chips and swarf extraction

If FlexPAK is used for machining chips and swarf extraction, it is recommended that the unit be configured for this purpose. When the fan temperature reaches the temperature set in CoolTmp, the filter cleaning valve opens to let air into the system to cool down the fan.



NOTE!

During the cooling cycle, all vacuum is lost in the system so there is no waste extraction.

When the temperature decreases to temperature "off" in CoolTmp, the filter cleaning valve is closed, and a vacuum is established in the system so waste extraction can start again. See [Section 4.2.23 CoolTmp](#).

6.1 Electrical connection of indicator lamp

It is possible to connect an indicator lamp to FlexPAK to show when the cleaning valve is open so that there is no vacuum in the system.

Connect the indicator lamp to terminal X1:5 (+24V DC) and terminal X1:6 (0V DC).

If there are multiple indicator lamps connected to the system, it is recommended that semiconductor LED indicators used.

7 Pneumatic filter cleaning valve

7.1 Filter cleaning button

The filter cleaning button will only work when the system is in Standby mode or Running mode.

7.2 Filter cleaning in Standby mode

Perform a filter cleaning in Standby mode as follows:

- 1 From Off mode, put the unit into Standby mode by pressing the Standby/Running button.
- 2 Start filter cleaning by pressing the filter cleaning button.

The unit goes into the Running mode, the motor starts and the FCV closes and a vacuum is established in the system. The unit will now open and close the FCV once and then leave the FCV in its open position. After the cleaning cycle, the unit goes into Idling mode. The unit waits for a pilot signal for 10 minutes. If the pilot signal is not received during this time, the unit will stop its motor and go into Standby mode.

To perform a new filter cleaning in Idling mode, activate the pilot signal and enter Running mode, or toggle the Standby/Running button to go to Standby mode and press the filter cleaning button again.

7.3 Filter cleaning in Running mode

Perform filter cleaning in Running mode as follows:

- 1 Put the system into Standby mode by pressing the Standby/Running button.
- 2 Activate the pilot signal by connecting terminals X1:13 and X1:14 with a jumper. The unit goes into Running mode. The motor starts, the FCV closes and pressure is established in the system.
- 3 Start the filter cleaning by pressing the filter cleaning button.

The unit will now open and close the FCV and then leave the FCV in its closed position. After the last cleaning cycle, the unit returns to Running mode and waits for the pilot signal to stop. It is possible to perform multiple filter cleaning cycles in Running mode.

When the pilot signal stops, the unit runs for 10 seconds (DIR time) and then opens the FCV and goes into idling mode. The unit waits for a pilot signal for 12 minutes. If the pilot signal is not received during this time, the unit will stop the motor and go into Standby mode.

The idling time is set by the SSR timer and the default is 12 minutes. DIR time is the delay after the pilot signal has stopped before opening the FCV. The default is 10 seconds.

7.4 Filter cleaning valve function

The PLC output Q3 is set and sends +24 V to the solenoid valve. The solenoid valve opens the airflow to the pneumatic piston, which moves the lid on top of the filter upwards letting in the air with atmospheric pressure to the filter top. This sudden opening of the lid on the top lets in the air with great speed which creates a sudden pressure rise above the filters. The pressure increase blows air through the filter bags removing the dust from the filters.

When power to the solenoid valve disappears, the valve closes and evacuates the pneumatic piston. The lid falls down and closes the opening of the filter top.

If the piston does not fall down, the piston may not evacuate properly. If the incoming compressed air is disconnected, the piston should fall down allowing the lid to close the filter top opening.

8 ATEX Duct Isolation Valve settings

This is for ATEX units with the Duct Isolation Valve and Duct Isolation Damper.



NOTE!

- DuctIsoDamp = On, see [Section 3.1.12 Isolation Damper Closing Duct](#) and [Section 4.2.35 DuctIsoDamp](#).
- The damper must be NC (Normally Closed), so it is closed when there no signal from PLC. This may require switching the function on NC dampers by switching the compressed air connections or similar.

8.1 Flush Cycle settings

Flush cycle is triggered by a timer or PSCFlush function. Timer can be adjusted in parameter "FlushTmr", see [Section 4.2.32 FlushTmr](#). PSCFlush overrides the timer and prevents Flush cycle while pilot signal is active, see [Section 4.2.16 PSCFlush](#).



NOTE!

PSIFC function is not preventing Flush cycle.

One of the already occupied outputs is used to control the Duct Closing Damper. Output Q12, is used to control Duct Isolation Damper; it is the same output that controls Flush Valve 2. If the Duct Isolation Damper is installed, it reduces the flush function to only one flush valve, Flush Valve 1.

8.1.1 FlushCy1(T) (Timer)

Flush Valve 1 uses output Q5 and terminals 73 and 74. This function is not affected by Duct Isolation Damper. See [Section 4.2.28 FlushCy1](#).

8.1.2 FlushCy2(T) (Timer) (Dual Function)

Flush Valve 2 uses output Q12 and terminals 64 and 65. The Flush Valve 2 function is overridden by Duct Isolation Damper function if it's active. See [Section 4.2.20 FlushCy2](#).

8.2 Tuning Duct Isolation Damper sequence

Use [Figure 3](#) as a reference when reading this tuning description.

Normally the default setting is a proper starting point to use and test the FlexPAK system. If a problem occurs such as an unintended activation of the Duct Isolation safety valve, it is time to consider tuning the Duct Isolation Damper sequence.

8.2.1 FCDelay(T) Parameter

Filter cleaning delay time is used to ensure that the Duct Isolation Damper is closed before the first filter cleaning (FC) pulse.

To set FCDelay(T) parameter, it is necessary to know how long time it takes for Duct Closing Damper to go from Open to Closed.

Test the time it takes for the Duct Closing Damper to close at the default Vacuum set point for the system.

Closing time is Approximately 5 seconds in a 35kPa vacuum.

See also [Section 4.2.33 FCDelay](#).

8.2.2 FCDelay(T) Parameter Calculation See, Timing diagram

35kPa vacuum → Closing time = 5 seconds.

ClenCycle (Tch) → Tch = 3 seconds (Load time is 3 seconds to first FC pulse).

FCDely(T) = (Closing time) - (ClenCycle (Tch)) = 5 - 3 = 2 seconds.

FCDely(T)T = 2 seconds.

T = 2s → 2 second delay before ClenCycle (Tch) function activates and 3 second load time before the first FC pulse is activated.

8.3 IsoVDly(T) Parameter Settings

Vacum Equalization Time

IsoVDly (T) is a delay timer to ensure a closed Duct Isolation Damper until the vacuum in the filter housing is higher than the duct system. Creating a high vacuum in the filter housing prevents a possible vacuum in the duct system that could create a reverse flow of air that triggers the Duct Isolation safety valve.



NOTE!

Increase IsoVDly (T) parameter if a problem occurs such as the unintended activation of the Duct Isolation safety valve.

The delay after the FC pulse occurs before the Duct Isolation Damper opens. See [Section 4.2.34 IsoVDly](#).

8.4 Settings Tpu = Cleaning Pulse Time (FC Valve opening Time)

The length of the pulse time is difficult to predetermine. From experience, 1-3 seconds works in most applications. It is possible to use other timings, but it has to be tested at the site. It is appropriate to start with the default time. See [Section 4.2.47 Clean Cycle](#).

8.4.1 Total Filter Cleaning sequence time

Total Filter Cleaning sequence time(s) =

FCDely + (Clean Cycle(Tch) + Clean Cycle(Tpu))* Clean Cycle(On) + IsoVDly

With default values it will be:

2 + (3 + 2)*1 + 4 = 11seconds

9 FlexPAK IOT System

The new FlexPAK IOT device is prepared for the Nederman Insight cloud-based IoT platform and communicates with the cloud via a router. This is a fast optimal and cost-effective solution for processing data and providing improved intelligence. It is possible to sense all vital parts of a FlexPAK system and its processes. Sensors monitor key system functionalities, and collected data are sent to the cloud for analysis and visualization via dashboards. Warnings, Alarms and other status messages are returned to the factory for local measures to be taken.

Communication is one-way in the FlexPAK systems. It means that you can only retrieve information from the Logo PLC and VACON VFD.

All FlexPAK sold after the 6th of May 2019 are prepared for IOT, which means that if you order a FlexPAK after this date, you can upgrade it with a communication kit for the Nederman Insight Cloud-based IoT platform.

If you want to upgrade a FlexPAK system you can buy sensor kits separately for the FlexPAK IOT system.

The sensors are monitored by the FlexPAK Control system and have full functionality without the Cloud-based IoT platform.

All Available parameters are only (Read mode)

System I/O

Digital I/O

Analog input signal

System, Operating Modes

Off, Idling, Stand By, Run

System Processes

Cleaning, Flushing, Emptying of bin, etcetera

Message

Larm Message

Warning Message

Parameter settings

Other parameters s also available

Running time, Timer settings, etcetera

9.1 Preset IP Addresses for FlexPAK IOT Units

Siemens Logo 8	10.5.3.91
Vacon VFD	10.5.3.92
eWon Router	10.5.3.93

Contact a Nederman Sales company for more information.

10 Appendix A: PLC settings protocol

Copy the PLC settings protocol, fill it in and save it as a service record.

Parameter setting	Default value	Customer value
H-Meter	MI=2000h	
SSR_Time	T=12:00m	
AEB_Time	MI=1h 0m	
DIR_Time	T=10:00s	
WeekTmr	-----	
PresepTm	TH=05:00s TL=05:00s	
MFDPS-Wr	T=10:00m	
MFDPS-FC	T=01:00m	
BLI-Empt dl	T=30:00m	
BLI-Wr	T=12:00m	
BinOpnTm	TH=05:00s TL=05:00s	
CFDPS-A1	T=05:00s	
TVFDAdv	Switch=Off	
PSCFlush	Switch=Off	
Auto empt.	Switch=Off	
LIAuto empty	Switch=Off	
LSOTmr	T=10:00s	
FlushCy2	T=10:00s	
OTTmr	T=02:00h	
FlushTmp	On=120 Off=100	
CoolTmp	On=110, Off=100	
TVFD-AI-Tmr	T=15:00s	
BRSTmr	T=30:00m	
Vac_Low	On=-15 Off=-15	
AEB-TVFD	Switch=On	
FlushCy1	T=10:00s	

Parameter setting	Default value	Customer value
VacLoTmPmp	T=01:00m	
PSIFC	Switch=Off	
Presep	Switch=Off	
FlushTmr	T=30:00m	
FCDelay	TH=01:00s TL=02:00s	
IsoVDly	T=04:00s	
DuctIsoDamp	Switch=Off	
BLI-Alarm	T=30:00m	
MFDPs-AI	T=30:00m	
DPFClean	Switch=Off	
EmptyIdli	Switch=Off	
Fire_AI_Set	Switch=Off	
Rot fault AI	T=10:00m	
Vac_Low_duct	On=-15 Off=-15	
VacLoTmDct	T=01:00m	
Select_Duct	Switch=Off	
E-StopSelect	Switch=On	
FltClean	MI=1h 0m	
Clean Cycle	Tch=03:00s Tpu=02:00s On=1	
Vibr Setting	MaxS=1000 MaxR=1000	
Aux Setting	MaxS=50 MaxR=50 larm=Off	
MFdP Setting	dpSS=50 dPSR=50 dPDS=50 dpDR=50 Stat=Off	
CFdP Setting	On=50 Off=50 Stat=Off	
Rot valve	Enab=Off Dete=Off Trun=00:10m T1=30:00m Err=Off	
Rot valve LI	T2=05:00m R_LI=Off	

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