ETC4.0 | ETP4.0
Operating Manual
Dew Point Control
Basis for System Monitoring
KSI ECOCONTROL

Rev 01_0221

Table of Content

1. General information

Please read this documentation first before you start with installation or operation steps.

A basic knowledge of this manual is required to be able to handle programming steps and the daily use of this control.

Improper use or lack of knowledge of the ETC4.0 | ETP 4.0 program can lead to defects in various parts and affect the functions of the adsorption dryer.

Basically only instructed or qualified personnel should enter the password protected area. This also applies in the event of an alarm. An alarm triggering always has a cause, which must be analysed and eliminated. Specialist knowledge of compressed air is a prerequisite for this!

Do not switch off the control system even in the event of an alarm, otherwise the dryer will store more and more moisture and the desiccant will become soiled. This fact worsens the compressed air values over time!

2. Warranty

The conditions for compliance with warranty can be found in our „General Conditions of Sale and Delivery“.

The warranty cannot be given if:

- the control unit is not used for its intended purpose,
- the contents of these operating instructions are not observed,
- the control is damaged by external influences (e.g. incorrect supply voltage, short circuit, etc.),
- damage is caused by the wrong tool,
- damage occurs due to incorrect or faulty installation,
- the control is operated despite a demonstrable defect,
- an unfavourable or incorrect installation is selected,
- the performance data given on the rating plate are disregarded,
- damage occurs after installation by unqualified personnel,
- basic requirements for electrical work are disregarded.

3. Safety instructions

Non-observance of the safety instructions can lead to physical injuries and damage to the control unit or the adsorption dryer. In addition to the information in this operating manual, please also observe the generally applicable safety and accident prevention regulations!

1. The control ETC4.0 | ETP 4.0 may only be commissioned and serviced after having read and understood these operating instructions.
2. The control ETC4.0 | ETP 4.0 may only be used for its intended purpose as described in this manual.
3. The operator must ensure that only instructed and authorized personnel commission the ETC4.0 | ETP 4.0 control unit,
4. that only suitably instructed and qualified personnel can carry out maintenance and repairs,
5. that the control ETC4.0 | ETP 4.0 may only be operated in a safe operating condition,
   (a) that an instruction manual is visible on the device
   b) that the use of the ETC4.0 | ETP 4.0 control system with other components of the system is appropriate for performance data,
   c) that all persons working with the device know and observe the safety instructions
6. When disassembling housing parts and components of the ETC4.0 | ETP 4.0 control unit, please observe the safety instructions,
   a) that the mains plug is pulled out and secured against being switched on again,
   b) only appropriate and suitable tools intended for electrical purposes are used
7. The ETC4.0 | ETP 4.0 control unit may only be operated when all components have been reassembled and completed, e.g. after maintenance. In addition the housing must be closed again. Safety devices on the unit must not be disassembled or disabled!
8. Exceeding the performance data specified in these instructions is not permitted.
9. Conversions and changes may only be carried out with the approval of KSI Filtertechnik GmbH. Unauthorized modifications exclude any liability for resulting damage.
10. The control unit ETC4.0 | ETP 4.0 must not be put into operation if damage can be detected or suspected.
11. In case of particularly noticeable noises or smells the ETC4.0 | ETP 4.0 control unit must be switched off immediately.

4. Used symbols

The symbols used in this technical documentation are explained as follows:

Tip
This symbol indicates information and tips for the proper and economical use of the control system.

General Attention!
This symbol indicates general information!

Electrical danger!
This symbol indicates electrical hazards. This work may only be carried out by qualified personnel.

Arrow up!
This symbol is assigned to the „up“ key on the control unit.

Arrow down!
This symbol is assigned to the „down“ key on the control unit.

OK!
This symbol is assigned to the „Confirm“ key on the control unit.

Edit!
You can edit values with this icon.

Password protection!
You can enter the password with this symbol.

Home screen!
This button takes you to the home screen.

Menu!
This button takes you to the menu structure.

Arrow right!
This symbol is assigned to the „right“ button on the control.

Arrow left!
This symbol is assigned to the „left“ key on the control.
It also moves the command back one level.

Status
This symbol is assigned to the status display.

5. Purpose

The control system is primarily intended for controlling adsorption dryers from KSI Filtertechnik GmbH in compressed air systems. It requires the supply of electrical energy.

It can also be operated as a data collector, both as a basic device for connecting further measuring boxes and as a stand-alone recording device. Even the basic version is capable of sending data by means of an IOT card. This function can also be switched off.

By means of the installed pressure dew point sensor the moisture content at the adsorption dryer outlet is measured directly. The control system then switches the adsorption dryer automatically according to the set pressure dew point. Thus, compared to a pure time control, fewer cycles are required for regeneration. This results in an energy saving, because after reaching the desired pressure dew point, no further regeneration is carried out and only after a forced switch-over time one cycle is run again (2 cycles per hour instead of 6 cycles).

5.1 Intended use

The control unit is exclusively intended for control on KSI Filtertechnik GmbH adsorption dryers! If the adsorption dryer is to be used by other manufacturers, this must be agreed with the manufacturer. Other safety guidelines may apply!

The control unit may only be used in the following areas:

- The control unit must be installed in a weatherproof location (avoid solar radiation).
- The area must be dry (protection class IP54).
- The area must be frost-proof.
- The area must be free of vibration.
- The area must not be in a potentially explosive atmosphere and
- must be accessible for settings.
- The area may only have low dust loads,
- does not allow any hazards from lightning or other external forms of energy and
- is free from aggressive or corrosion promoting agents.

The control may only be operated within the permissible operating conditions. These are specified on the type plate and in these operating instructions. Any use other than that intended by the manufacturer is not permitted and will lead to the extinction of liability.

The control unit may not be converted or its components altered. The use of components other than those originally supplied by the manufacturer is not permitted, or, if necessary, must be agreed with the manufacturer.

The nominal performance data of the control unit can be found in chapter „6. Technical data“.

6. Technical data

6.1 Dew point sensor

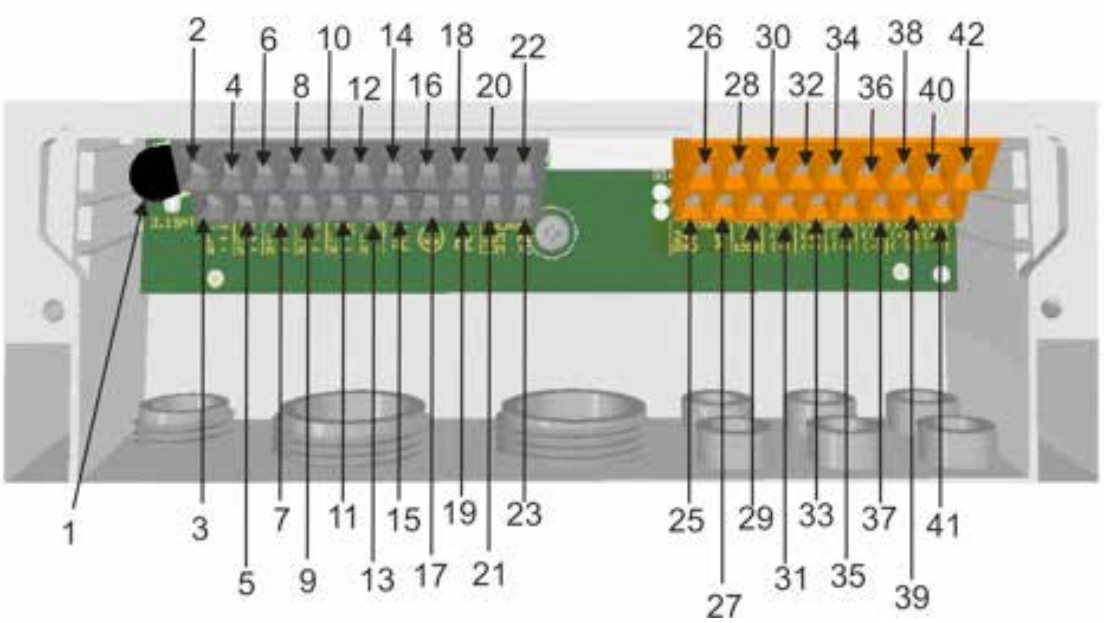
Measurement type	Specifications
Measuring range humidity	100° C to + 20°C pressure dew point (4-20 mA)
Humidity range	0 - 100 % rh
Power consumption	20 mA (max.)
Power supply	12 to 28 Vdc
Print area	0 to 450 bar
Accuracy	+ - 2%
Operating temperature	- 40°C to + 60°C
Flow rate	For direct use: 0-10 m/s For block seat with outflow: 1-5Nl/min
Mechanical connection	Screw-in thread 5/8“ UNF with sealing washer
Material housing	Stainless steel
Dimensions	Ø 27mm x 132 mm
Weight	About 150 gr
Connection	2 wire power source
Protection filter	HDPE filter 10µm
EMV Immunity	EN 50081
EMV emitted interference	EN 50082
Probe type	Polymer
Protection class	IP66 (NEMA 4)

6.2 Control

Measurement type	Specifications
Max. Conductor cross section for terminal assignment	$1,5^2$
Backup	T3,15A, 250V
Power consumption	Max. 3,5 A
Power supply	230 V , 50 Hz
Valve outputs	230 V, 50 Hz
Outputs	1x 4-20 mA (dew point) 1x potential free alarm out (opener or closer)
Accuracy	+ - 2%
Operating temperature	- 40°C to + 60°C
Flow rate	For direct use: 0-10 m/s For block seat with outflow: 1-5Nl/min
Type of housing	Bopla RCP 170 F
Dimensions W x H x D	166 x 160 x 100
Weight	About 550 gr
EMV Immunity	EN 50081
EMV emitted interference	EN 50082
Protection class	IP54

7. Electrical connection

The pin assignment of the control is as follows:



1	Fuse F3.15A, 250V	23	Alarm terminal NO
2	Connection conductor control voltage 230V	24	Reserve
3	Neutral conductor Control voltage	25	Modbus Ground
4	Manager Valve 1	26	Modbus 24 V
5	Neutral conductor valve 1	27	Modbus A
6	Manager Valve 2	28	Modbus B
7	Neutral conductor valve 2	29	Temperature sensor PT1000(optional)
8	Manager Valve 3	30	Temperature sensor PT1000 (optional)
9	Neutral conductor valve 3	31	4-20 mA output + (pressure dew point)
10	Manager Valve 4	32	4-20 mA output - (pressure dew point)
11	Neutral conductor valve 4	33	Connection pressure dew point sensor +
12	Head Valve 5	34	Connection pressure dew point sensor -
13	Neutral conductor valve 5	35	Connection pressure sensor 1 + (optional)
14	Grounding	36	Connection pressure sensor 1 - (optional)
15	Grounding	37	4-20 mA or switch
16	Grounding	38	4-20 mA or switch
17	Grounding	39	4-20 mA or switch
18	Grounding	40	4-20 mA or switch
19	Grounding	41	4-20 mA or switch
20	Alarm COM	42	4-20 mA or switch
21	Alarm COM	43	4-20 mA or switch
22	Alarm terminal NC		

8. Explanations of key functions

The following keys are used:

Arrow up key
Adjust values, scroll up

Arrow down key
Adjust values, scroll down

Arrow right Key
branch right

Arrow left key
jump to the left, one level back

Edit
To edit the menu item / setting, select the pen

Password entry
Password entry necessary, dialog opens afterwards

Status
Opens the 2nd main page, which can be scrolled through with the right arrow.

Home
This is how you get to the main view.

Confirmation
Confirmation of values, passwords etc.

Menu button
This button takes you to the menu / settings area.

The LED on the control has three different colours. These mean in detail:

Flashing blue = connection is established (searched)
Blue continuous light = control on, modem is off

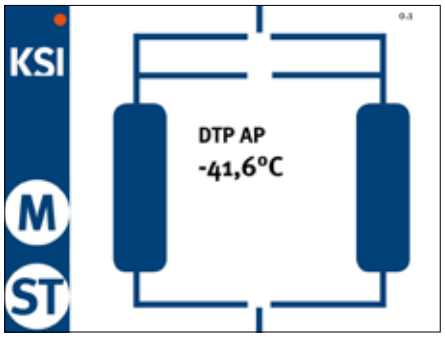
Flashing green = new update is passed by WebApp.
Green shining continuously = connected to MQTT Broker

Flashing red = error or alarm present

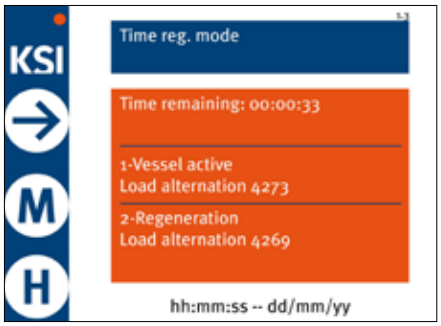
9. Display design

The display of the control ETC4.0 offers the following views and setting options (password levels in chapter 19.1).

When the mains voltage is applied, the control starts up:

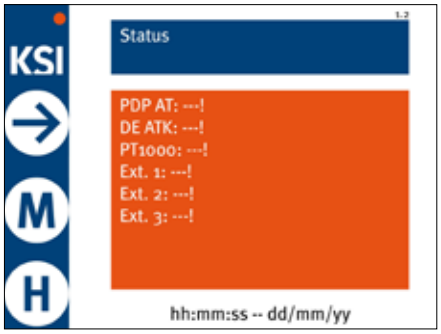


After start-up you will see the main view and the result of the measurement of the pressure dew point. With the key “ST“ you can see the following status pages:



This page shows you the current status (except when modified as data logger). After the start, the initialization always takes place first. The number of driven cycles per vessel can be viewed. Due to restarts, the counts can be different here.

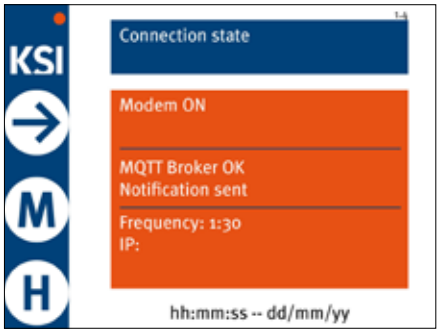
Press the key „Arrow right“ to move to the next status page:



On this status page you can see the current values. Decisive here is whether it is an ETC4.0 or an ETP4.0. An ETC has only a dew point display, an ETP has additional pressure and temperature. On Ext 1 to 3 you can configure further sensors. However, these are then not relevant for control.

In the bottom line you can still see the date and time. Please check these after switching on, in order to be able to trace a corresponding real time in the error memory.

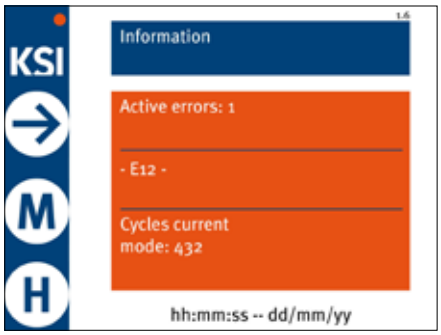
By pressing the „Arrow right“ button, you will reach the next status page:



Here you can see which current connection is given, how this connection is and which connection or transmission frequency is set.

You can return to the main view by pressing the „Home“ button.

By pressing the „Arrow right“ button again, you can access the next status page:



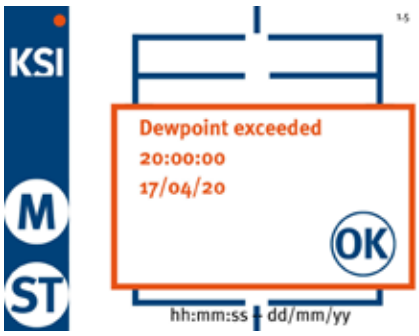
This page informs you about current active errors and the number of cycles currently run in this mode. For example, if the system is in dew point control mode, the number of current dew point changeovers is shown here. If the dew point then rises to - 39 °C, for example, time cycles are run and the cycle counter starts again at 1 in this mode. If the dew point then falls below the control value again, the counting starts again at 1.

You can return to the main view by pressing the „Home“ button.

After the controller has started up, it may take a while before the desired pressure dew point is reached.

The display is switched off every (max. 900 seconds) and then switched on again in regular cycles. This procedure is to protect the display. If the control is switched on and the screen is black, you can switch the display back on by touching the display.

Depending on the set pressure dew point value, an alarm will then be triggered after the set trigger delay time (2 minutes ex works) has elapsed, which is shown on the display.



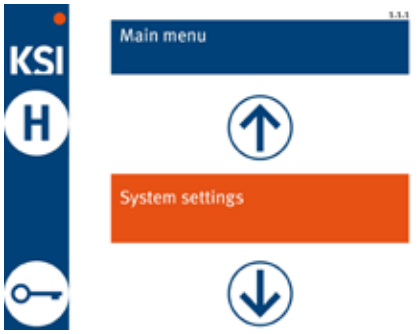
You can hide this message for a period of 2 minutes by pressing the „OK“ button, but the alarm will remain in the potential-free output and in the alarm LED as long as it is still active.

10. Main menu

Settings can always be changed within the scope of your user rights:

- on the control itself (as described below first)
- via an active Wifi connection (described in the chapter Wifi Connection).

Press the key once to enter the main menu. The following submenus appear below it:



You can access this menu and open the submenus covered by it by pressing „System settings“.

The two arrows above and below the menu item are for scrolling the main menu.

To switch back to the overview, press the „Home“ button.

11. System settings

In the system settings menu you can make the settings described below:

11.1 Software version

The current software version and date are displayed.

11.2 Changing the language

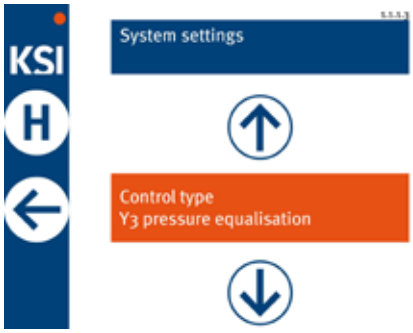
Press the „Arrow down“ key to reach „Select language“.

You can now press the „Edit“ button to select the language. You can change the language by pressing the up or down arrow. Currently, German, English and French are available.

To return to the overview, press the „Home“ button.

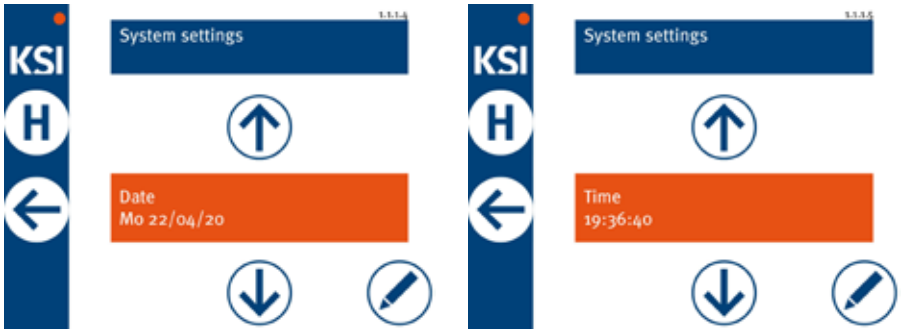
11.3 Type of control

This setting can only be made by the manufacturer. Here you can see the software sequence with which the control works.



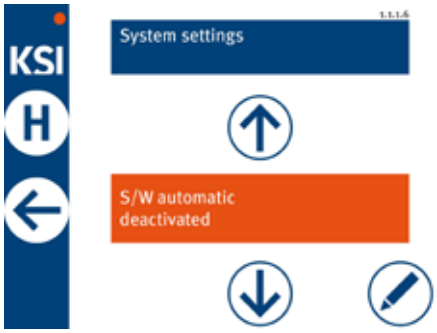
11.4 Setting the date and time

The control system has a real-time clock. This must be checked or set during commissioning. The date and time are password-protected so that these entries also appear correctly in the log book. You can log in with the corresponding password level.



11.5 Summer / winter time automatic

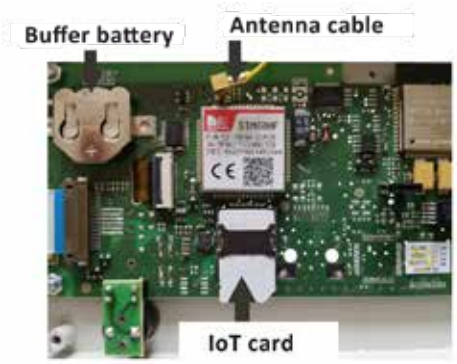
The activation / deactivation of automatic changeover from summer to winter time can only be carried out here. Press the „Edit“ button to activate / deactivate.



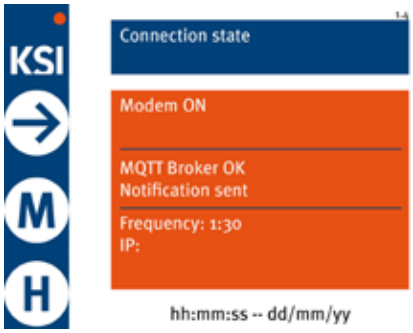
11.6 Connection settings

You can select whether you want to establish an online connection via MQTT (necessary when using as KSI ECOCONTROL and for email alarm messages) or whether only a Wifi connection should be available.

If you want to use the MQTT connection – i.e. the modem – you must activate this connection and insert an IOT card into the corresponding slot on the board.
If necessary, this has already been supplied optionally.



The control also has an „on board“ antenna. You may have to connect another antenna here, or connect a cable to connect a larger antenna.

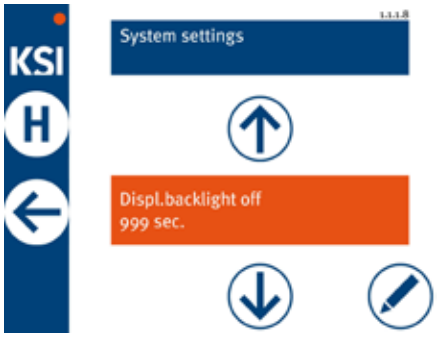


Active modem connection OK.

You can see the active connection under status as described above.

11.7 Display settings

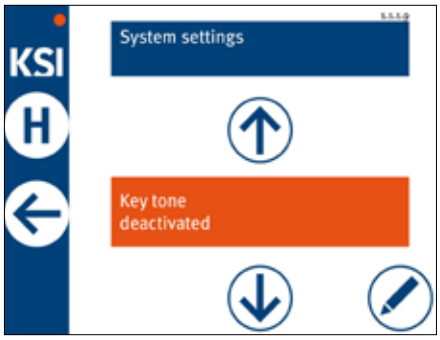
In the following you can set the lighting duration or the display duration of the display. After the time that can be set here has elapsed, the display switches off and can be switched on again by touch. A current event (e.g. alarm) also switches the display back on.



This serves to extend the life of the display and to protect it when it is not in use.

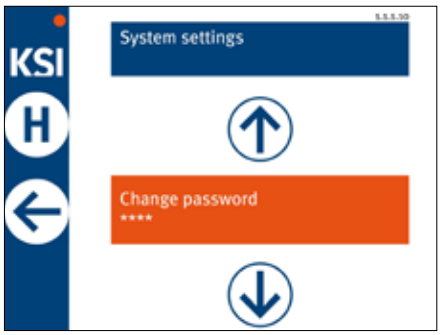
11.8 Button sound activated

You can subsequently switch the key acknowledgement tone on and off.



11.9 Change password

You can change the service password below. ATTENTION: If you then no longer know this password, the control

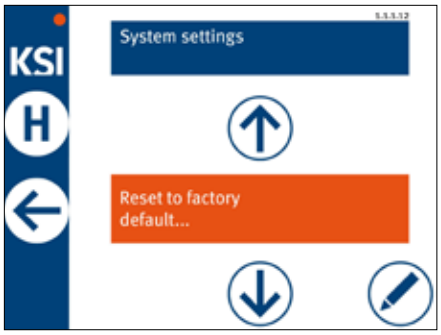


unit can only be reset at the factory. This procedure may be subject to a charge.

To do this, log in with your previous password by pressing the key button. Then go to the stylus and set your desired password code. Confirm it with OK.

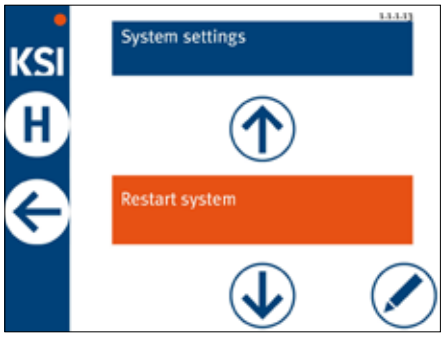
11.10 Load factory settings

This setting can be used to reload the basic factory parameters. But attention! All personalised settings (control pressure dew point, alarm points etc.) are reset.



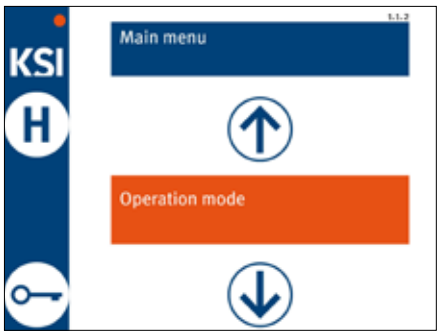
11.11 Restart the system

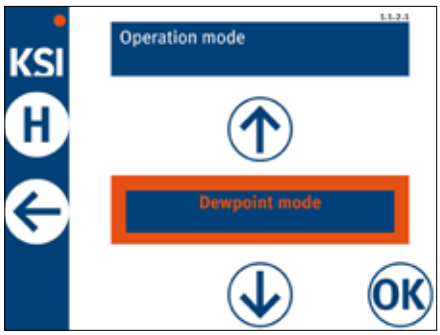
This setting allows you to restart the control.



12. Operating mode

Set the desired operating mode. The password is required for the service mode. However, this is only intended for the case that the dryer is absolutely overrun. The cycle may only be run for a short time.

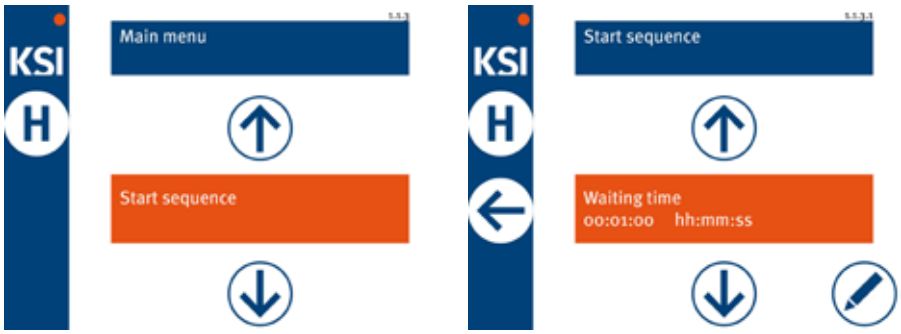




Preset – and also useful – is of course the mode „Dew point control“ as energy saving control. In this mode, the control changes the intervals as required.
However, you can change over by pressing „Dewpoint control mode“, then using the „Edit“ and arrow keys to set the Time control mode (fixed changeover after a pure time lapse), Service mode (short cycles for a high number of expansions) or Short cycle (halved time cycles).

13. Start sequence

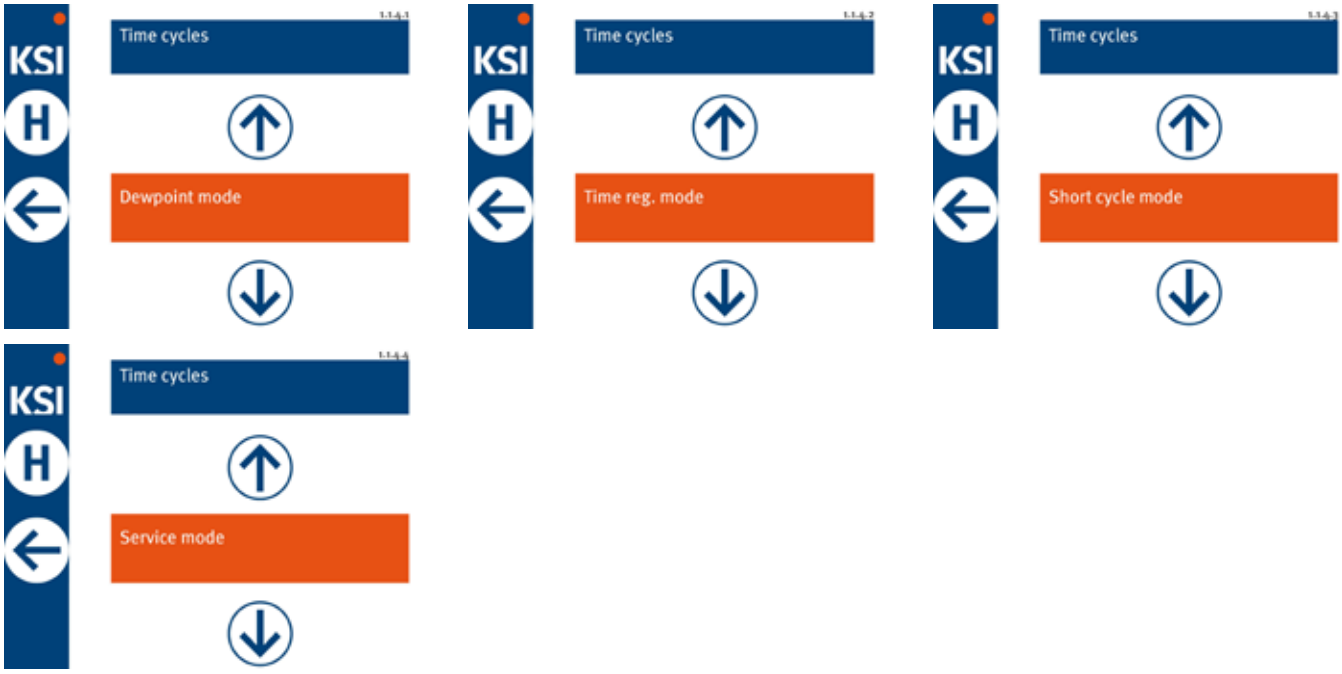
Specify how the control should behave when it is restarted. This only applies to the restart.



Here you can change the number of cycles and also define the time period until the first regeneration.
This can be useful if, for example, you have carried out maintenance on the filter elements and the control should only run for a short cycle before returning to energy saving mode.

14. Cycle times

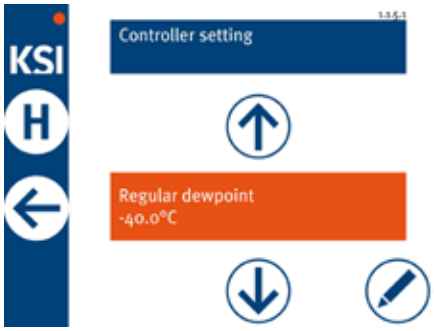
Different cycles are stored for different requirements and cases. The control system decides independently on the basis of the measured pressure dew point which operating mode is necessary or useful. These are:



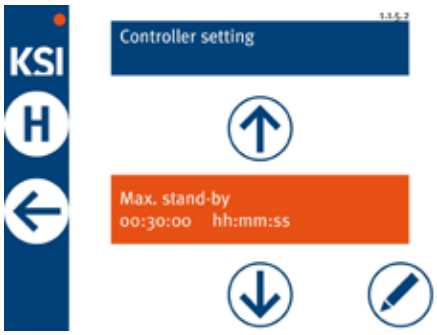
The change of cycle times is only possible with password. Basically the cycle times are set to the optimum operation. Changes should only be made in case of problems.
The conversion of times is the same in all modes. Log in with your service password (key symbol) and then use the arrow keys to select the time to be changed by selecting the mode. You can then again choose whether you want to change the time for regeneration, pressure build-up, pressure compensation or the maximum waiting time (between switching steps). Then press „Edit“. You can jump sideways with the left and right arrows and change values with the up and down arrows. Confirm your entry with „OK“.

15. Control pressure dew point

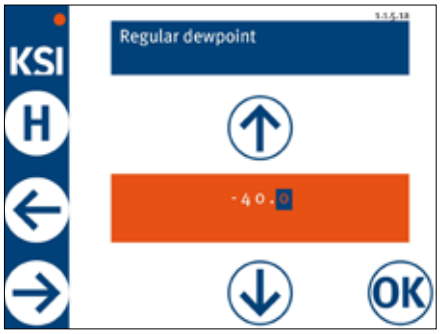
Here you set the pressure dew point from which the adsorption dryer should switch to energy-saving mode. Please note that the minus can also be converted to plus. After setting the last digit and confirming with the „OK“ button, you are back in the control setting menu.

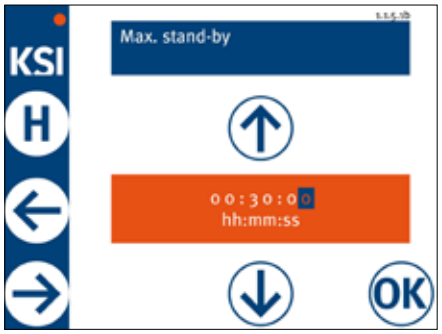


To set the pressure dew point for energy saving, please log in, press the pen and then enter the value.
Afterwards the max. idle time will be set. This time defines how long the dryer will not regenerate as long as the pressure dew point is better than required.



The stand-by time after reaching the set pressure dew point is defined here. The control now waits half an hour after reaching the pressure dew point before the next cycle is run. If the pressure dew point is exceeded again, regeneration starts immediately. The stand-by time can only be changed with a password.
The forced regeneration prevents too much moisture from being stored in the lower desiccant range. An extension of this time is always to be regarded as critical.
To change the settings, log in, click on the pencil and change values with up / down arrow. At the end confirm again with „OK“.



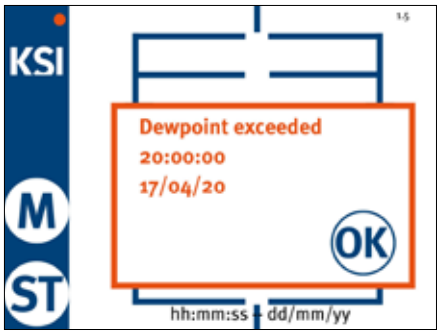


16. Alarm behaviour

Error messages can be output on the control in different ways. These alarms can be output as:

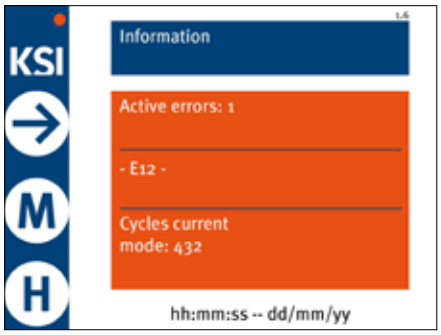
- optical signal on the control by means of LED
- acoustic signal from the control unit by means of a buzzer
- switched to a normally closed or normally open alarm contact.

Alarms are always displayed as a viewing window on the control unit.



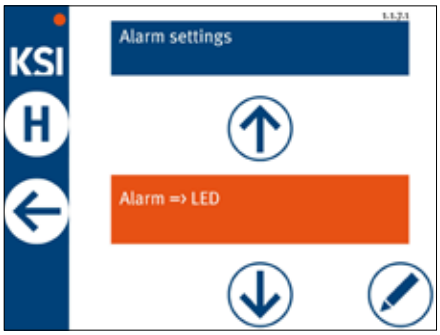
Alarms can only be suppressed for a few minutes by pressing „OK“ as long as they are active. The window then disappears. After a few minutes, this window opens again.

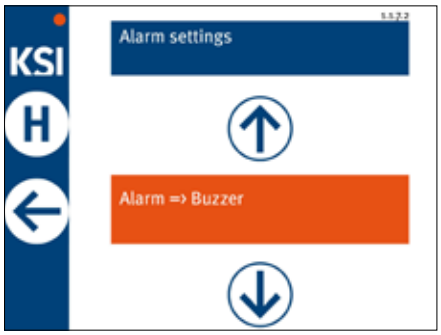
When you have closed this window, you can still see underneath this window which alarms are active:

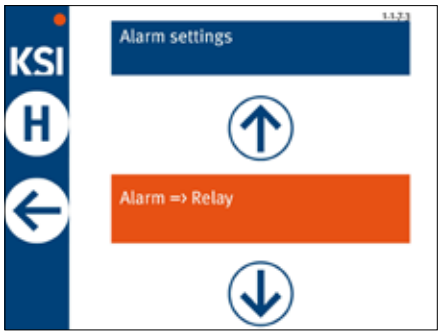


You get to this window by pressing „ST“ and then go to this screen by pressing the right arrow. The number of active errors is displayed and an error code is shown (here „- E12 -“). The table of error codes is shown in chap. 18.

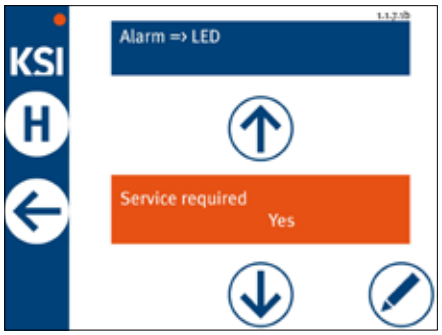
Alarms can be configured for:

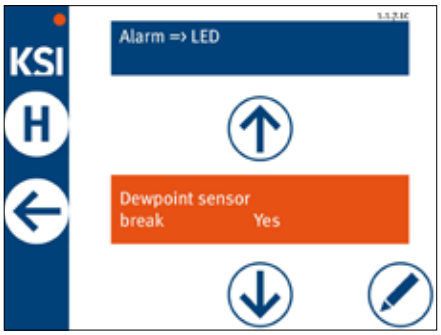


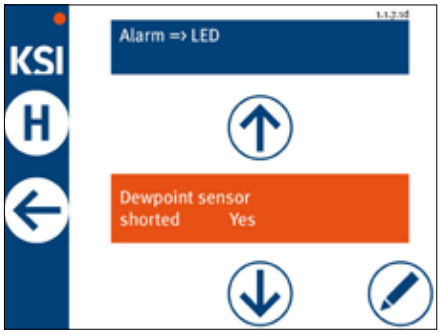


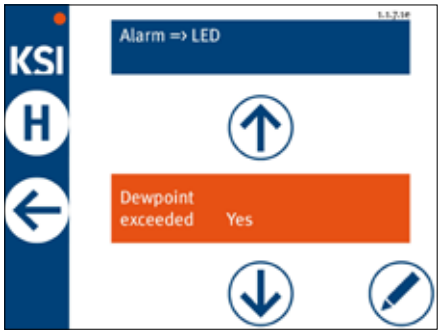


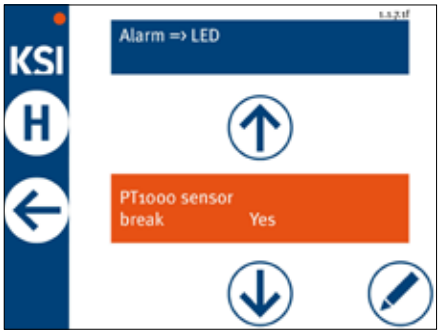
The possible alarms are:

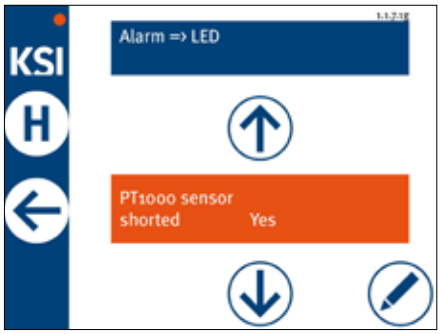


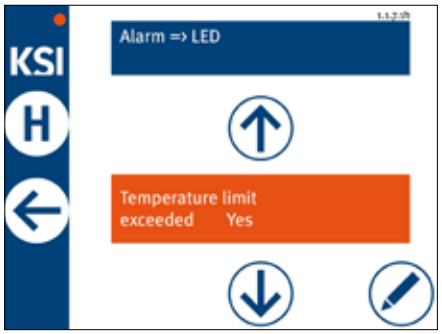


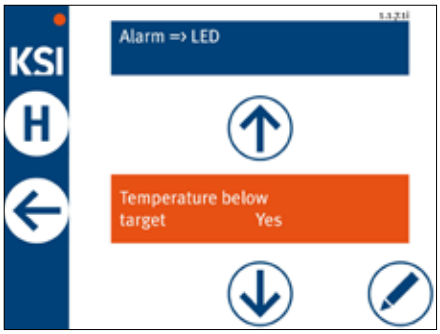


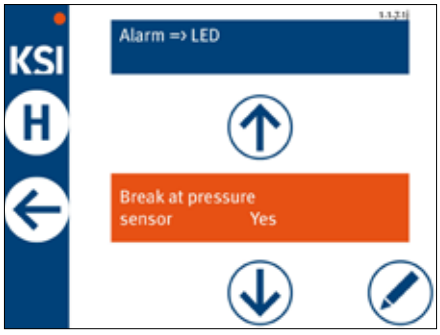


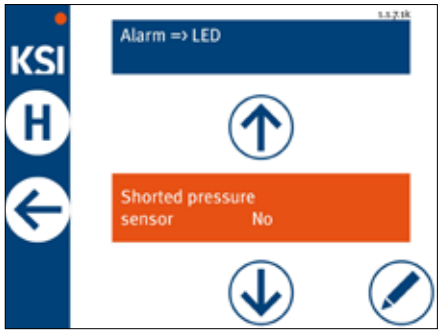


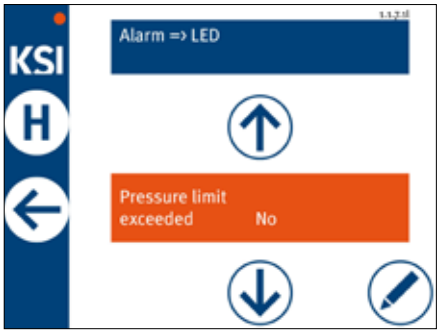


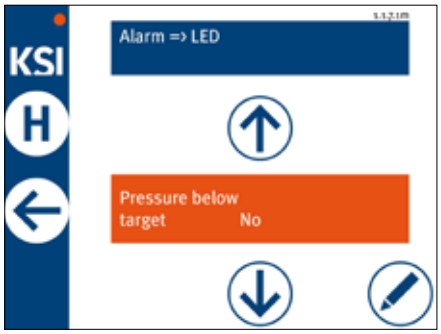




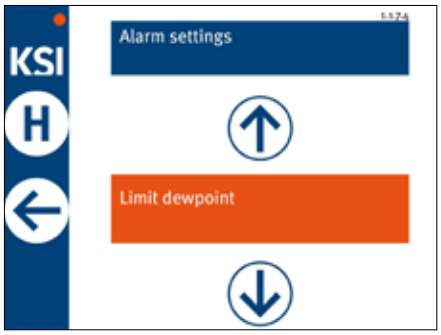


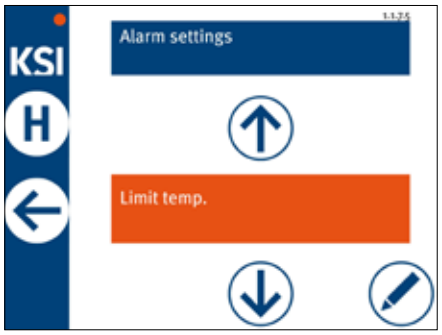


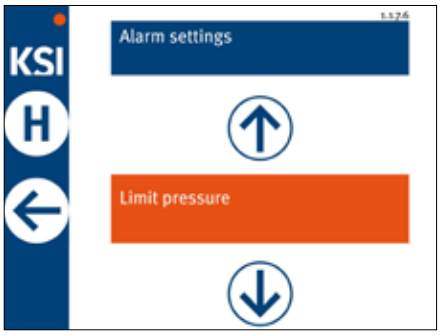




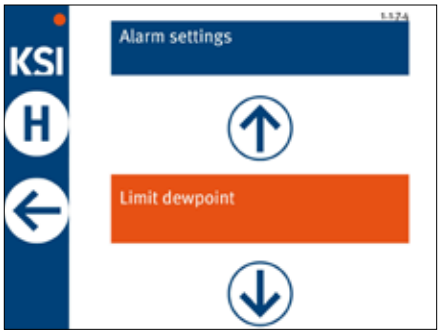
Subsequently, depending on the type of control (ETC or ETP), you can also define the limit values for the categories:



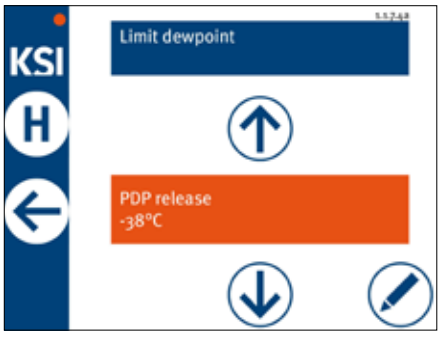




16.1 Alarm values and times pressure dew point



Here you define from which pressure dew point the control should issue an alarm. When setting the desired pressure dew point alarm value, make sure that the first digit remains a minus. Otherwise the alarm is only triggered at + 38°C pressure dew point.

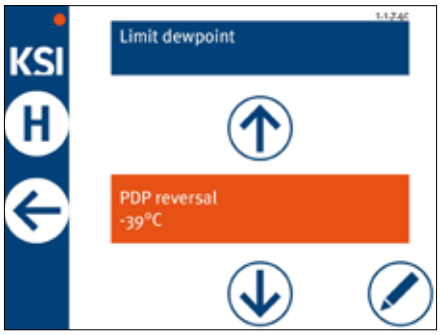


At this value the alarm is triggered.

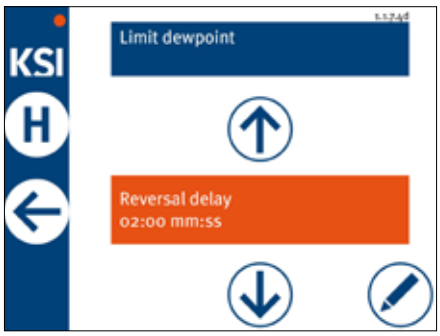
In order to buffer any dew point peaks, you have the possibility here of setting a delay for the alarm. The alarm will then only be triggered if it is present for longer than the set time.

This time must be permanently below the TP trigger value for the alarm to become active.

This temperature must be defined so that the alarm can also cancel itself.

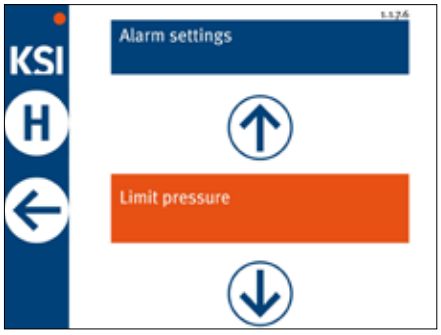


This value must always be higher than the TP trip value. It defines the value when the triggered alarm is automatically reset.



This time defines how long the alarm may remain after the values are better than those set for TP cancellation.

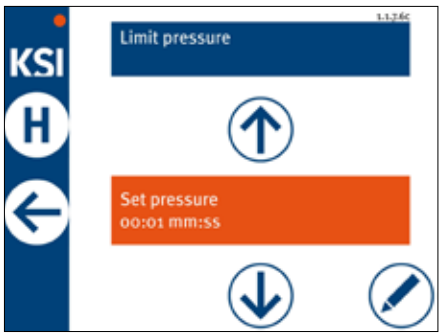
16.2 Alarm values and pressure times (only for ETP4.0)



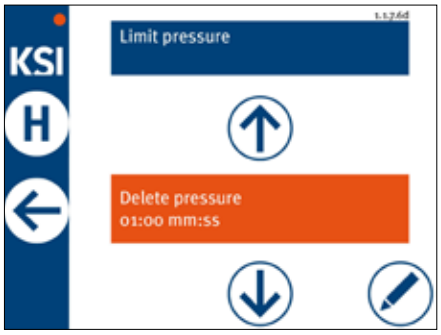
In addition to the dew point, the minimum and maximum pressure can be defined for ETP4.0.
If the pressure falls below this value, regeneration is set at this moment. Thus no further air is consumed by the regeneration and a time stamp is set. When the service pressure is reached again, the control will then restart automatically. The time of the current cycle is then continued.

Example:
Pressure drop after 2 minutes of the acute cycle (4:30 minutes) due to a high withdrawal rate. The regeneration in tank 1 is interrupted. The pressure is then stable again and the dryer continues to regenerate vessel 1 for 2:30.

Set pressure for alarm triggering (incl. interruption function)



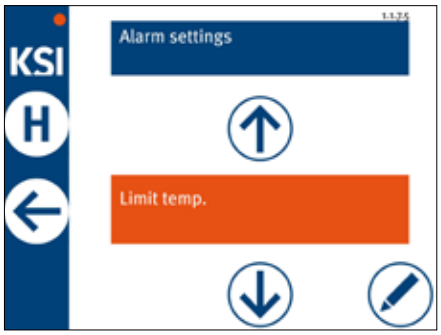
Set time for alarm triggering (incl. interruption function)



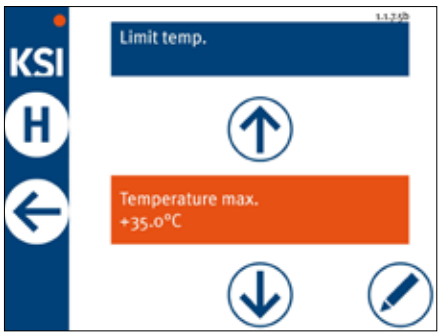
Set time for alarm cancellation (incl. interrupt function)

A maximum pressure can also be monitored.

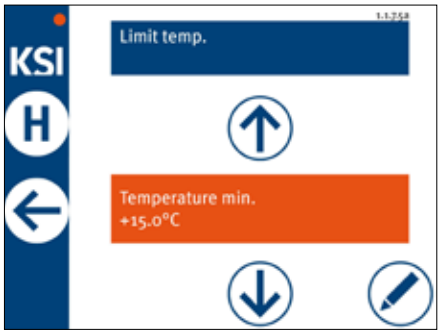
16.3 Alarm values and times Temperature (only with ETP4.0)

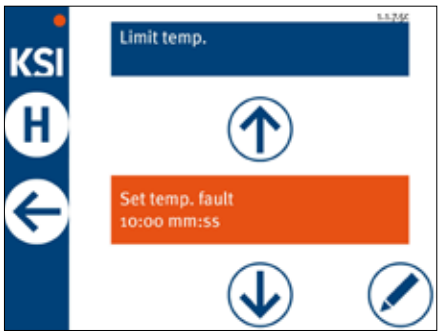


In addition to the dew point, the minimum and maximum temperature can be defined for the ETP4.0.

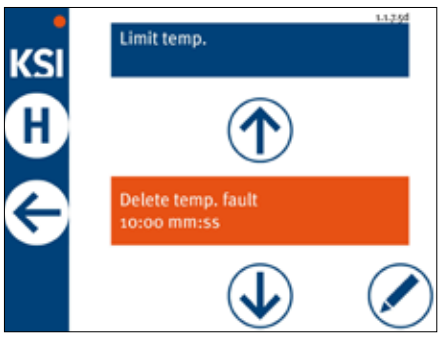


Set temperature for alarm triggering





Set time for alarm triggering (incl. interruption function)

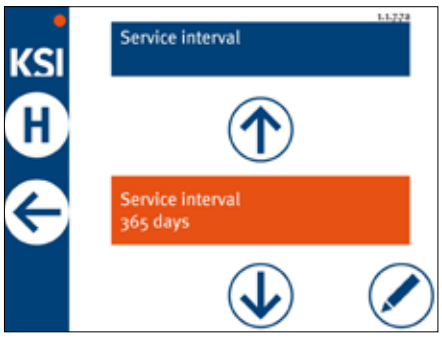


Set time for alarm cancellation (incl. interrupt function)

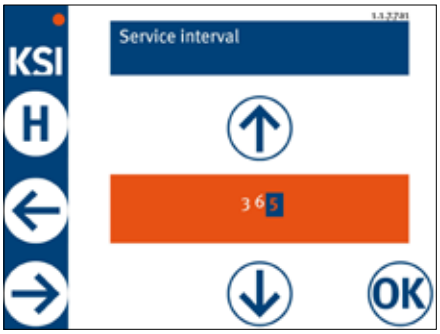
17. Maintenance settings

17.1 Time until the next maintenance

You can set the alarm interval under Maintenance interval in the Alarm behaviour menu.



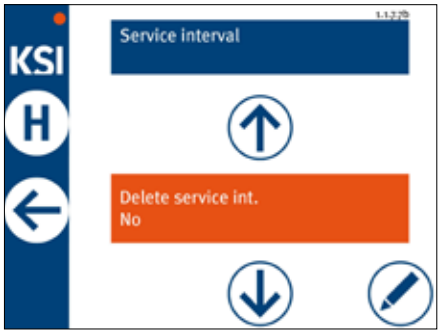
Here you define the maintenance interval.



Set the desired maintenance interval and confirm with OK.

17.2 Reset maintenance alarm

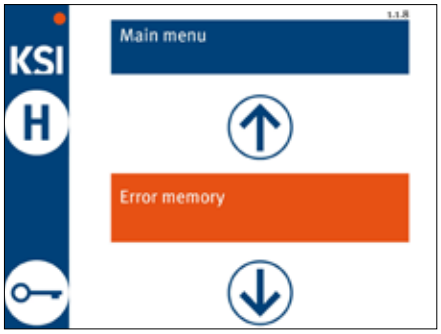
After maintenance, you must reset the time count until the next maintenance. Proceed as described below: Log in, press the stylus and set to Yes. This clears the maintenance alarm.



Resetting after maintenance is only possible with a password.

18. Read out errors

The ETC4.0 controller records all error values. Changes in the settings are also logged. This error memory has 4000 places for entries. If all 4000 entries are full, the oldest one is overwritten.



For example, a „Changeover max. time“ is also logged. This is not an error, but means that the controller has only switched over in the „Dewpoint controller“ mode after a maximum waiting time has elapsed. A sequence of cycles and states is therefore easier to understand.

Press the „Home“ button to return to the main view.

The active faults can also be viewed as described in Chapter 16 Alarm behaviour.

Alarm type	Coding
Error real time clock	E01
Service required	E02
Dew point sensor interruption	E10
Dew point sensor short circuit	E11
Dew point exceeded	E12
PT1000 Sensor interruption	E20
PT1000 Sensor short circuit	E21

Alarm type	Coding
Temperature exceeded	E22
Temperature below limit	E23
Pressure sensor interruptio	E30
Pressure sensor short circuit	E31
Pressure exceeded	E32
Pressure below limit	E33

19. Dealing with password-protected areas

In principle, all changes to the settings of the control system should be well considered. Incorrect interpretation of set values or changes without considering the interaction can cause damage to the adsorption dryer as well as to downstream plant components or products.

The most relevant menu items here are protected by a password and can only be changed by a specialist service company.
In openly accessible systems, this also protects against wilful changes to settings and thus damage.

If you receive the password from your service company, please handle it carefully. Please also bear this in mind if you wish to change the password.

If you have changed and forgotten the password, there is still the possibility of returning the control to the manufacturer. The manufacturer has the possibility to make the control accessible again by means of a master password. This master password only works with the corresponding software available from the manufacturer and is never issued.

19.1 Password levels

Password levels:

To view: no password needed
To serve: 1111

20. Configuration of alarm via email

A data card (optionally available) is required for the email configuration. Then you will receive access data to https://eco.ksi.eu/login.

Here you can set an email address for configuration. The alarms will then be sent there by email.

A more detailed description at this point will follow in the next revision.

21. Establish Wifi connection and settings

You can also establish a Wifi connection to set up the control. To do this you must open a browser (Mozilla, Edge, etc.). Then open the Wifi connection. You should now be able to see the corresponding control by its serial number.

Various actions are possible via the Wifi connection. The same password levels apply here as described above. If you are not authorized for a level, no change will be made.

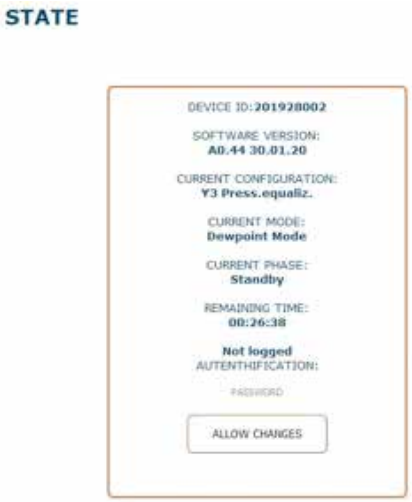
The first connection between the mobile device and the controller takes a little longer. Any subsequent reconnection is done immediately and without delay, since the two network adapters already „know“ each other.

Click on KSI3_2019(xxxxx) to connect to this wireless network. Enter the network password: „KSI32019

NOTE: Some operating systems display the wireless network as „unknown network“. In this case, connect using the specified password as well. When connected, the network name will be displayed correctly.

Now enter the line „192.168.1.1“ in your web browser (from software version A0.80 the IP address is 192.168.1.123). The web interface of the controller will now open.

Normally you will be assigned the IPv4 address: 192.168.1.2 (from software version Ao.8o this is 192.168.1.124). You will only need this IP address in case of updates.
You can now log in under „State“ and then see which user has logged in and how long this is the case. Alternatively, you can also log in to the control and see this in the Wifi connection.



You can also switch the MQTT connection off and on under „State“. You need the MQTT connection if you want to send data to the KSI ECOCONTROL system or receive email alerts.

Here you can still see the current values of the sensors (for ETP4.o of course further values, for ETC4.o only the dew point).

Under „System“ you see the screen as follows:

„System“ gives you the possibility - if you have logged in as a service - to change the mode, e.g. from dew point mode to time control. You can also read out the error memory and download it as a CSV file.
The other points require administrator rights and can only be changed by the manufacturer.

„Sensors“ provides the options here - if you have logged in as a service - for setting sensors (Ext 1 to Ext 3). The sensors Dewpoint, PT 1000 and DE ATK are fixed and cannot be changed. You can also activate or deactivate sensors.

„Dewpoint“ provides the possibility – if you are logged in – to set the control value (energy saving point) and also the forced switching time. You can also set the transmission frequency here under „MQTT Frequency“ (IOT operation required for this). This should not be set for less than 60 seconds. Sensible frequencies for transmitting data extend the life of the IOT card.

22. Basic configurations when used as KSI ECOCONTROL

This section is only relevant in conjunction with the Web App as KSI ECOCONTROL. You must insert an IOT card into the control and set the connection to MQTT.

A further description will not be created until the next revision.

23. Factory settings

The following factory settings are stored in the delivery state. Deviations may occur here in the case of individualisation:

Menu	Submenu	Description	Submenu	Factory settings
System settings				
	Software	No settings, only mapping of the current software version		up-to-date software
	Language	Language selection and current setting		German
	Control type	Selection of the control sequence		Y3, Y3/4 or 4 ways
	Date	Setting the real time date		must always be provided
	Time	Setting the real-time time		must always be provided
	B/W Automatic	Automatic changeover summer / winter		activated
	Display illumination off after	Lighting duration (ends when not operated)		900
	Key sound	Acknowledgement tone Key use		deactivated
	Change Password	Change of password up to incl. hierarchy Service		Service password
	Show logos	Show KSI Logo		yes
	Factory settings Load parameters	Resetting all settings to factory parameters		n. a.
	Restart the system	Reboot the control system		no
Operating mode				
		Set operating mode		Dew point control
Start sequence				
		Actions on restart	Waiting time	One minute.
			Number of cycles	005

Menu	Submenu	Description	Submenu	Factory settings
Cycle times				
	Time control for (Y3, Y3/4, 5 valves)	Pure control according to fixed times without TP consideration	Regeneration	00:04:30
			Pressure build-up	00:01:00
			Pressure compensation	00:00:05
			Max. waiting time	00:00:03
	Dew point control (Y3, Y3/4, 5 valves)		Regeneration	00:04:30
			Pressure build-up	00:01:00
			Pressure compensation	00:00:05
			Max. waiting time	00:00:03
	Short cycle (Y3, Y3/4, 5 valves)		Regeneration	00:02:30
			Pressure build-up	00:01:00
			Pressure compensation	00:00:05
			Max. waiting time	00:00:03
	Service mode (Y3, Y3/4, 5 valves)		Regeneration	00:01:00
			Pressure build-up	00:01:00
			Pressure compensation	00:00:05
			Max. waiting time	00:00:03
	Time control for (4-way-valve)	Pure control according to fixed times without TP consideration	Regeneration	00:08:00
			Pressure build-up	00:01:00
			Pressure compensation	00:01:00
			Max. waiting time	00:00:03
	Dew point control (4-way valve)	Control according to the current pressure dew point	Regeneration	00:08:00
			Pressure build-up	00:01:00
			Pressure compensation	00:01:00
			Max. waiting time	00:00:03
	Short cycle (4-way valve)		Regeneration	00:04:00
			Pressure build-up	00:01:00
			Pressure compensation	00:01:00
			Max. waiting time	00:00:03
	Service mode (4-way valve)	Mode pure for service purposes	Regeneration	00:02:00
			Pressure build-up	00:01:00
			Pressure compensation	00:01:00
			Max. waiting time	00:00:03
Reglereinstellung				
	Control dew point	Value determination and action Interval	Control dew point	- 40 °C
			Max. standstill	00:30:00
Sensoren				
	PT1000	Active measuring temperature sensors		deactivated
	Print	Active measuring pressure sensors		deactivated

Menu	Submenu	Description	Submenu	Factory settings
Alarm behaviour				
	Alarm LED	Alarm display on LED	Error real time clock	yes
			Maintenance required	yes
			Dew point tensor interruption	yes
			Dew point sensor short circuit	yes
			Dew point exceeded	yes
			PT1000 Interruption	no
			PT1000 Short circuit	no
			temperature exceeded	no
			temperature undershot	no
			Interruption pressure sensor 1	no
			Short circuit pressure sensor 1	no
			Pressure 1 undershot	no
			Pressure 1 exceeded	no
			Interruption pressure sensor 2	no
			Short circuit pressure sensor 2	no
			Pressure 2 undershot	no
			Pressure 2 exceeded	no
	Alarm buzzer	Audible alarm display	Error real time clock	yes
			Maintenance required	yes
			Dew point tensor interruption	yes
			Dew point sensor short circuit	yes
			Dew point exceeded	yes
			PT1000 Interruption	no
			PT1000 Short circuit	no
			temperature exceeded	no
			temperature undershot	no
			Interruption pressure sensor 1	no
			Short circuit pressure sensor 1	no
			Pressure 1 undershot	no
			Pressure 1 exceeded	no
			Interruption pressure sensor 2	no
			Short circuit pressure sensor 2	no
			Pressure 2 undershot	no
			Pressure 2 exceeded	no
	Alarm Relais	Alarm display Alarm terminal	Error real time clock	yes
			Maintenance required	yes
			Dew point tensor interruption	yes
			Dew point sensor short circuit	yes
			Dew point exceeded	yes
			PT1000 Interruption	no
			PT1000 Short circuit	no
			temperature exceeded	no
			temperature undershot	no
			Interruption pressure sensor 1	no
			Short circuit pressure sensor 1	no
			Pressure 1 undershot	no
			Pressure 1 exceeded	no
			Interruption pressure sensor 2	no
			Short circuit pressure sensor 2	no
			Pressure 2 undershot	no
			Pressure 2 exceeded	no

Menu	Submenu	Description	Submenu	Factory settings
Alarm behaviour				
	Limit values TP	From which value alarms are trigge-	TP Triggering	- 38 °C
		red and cancelled	Tripping delay	02:00 min:sec
			TP Repeal	- 39 °C
			Lifting delay	00:30 min:sec
	Limit values Temperature	Upper and lower temperature	Temperature min.	015 °C
		thresholds	Temperature max.	035 °C
			Set temperature error	00:10 min:sec
			Clear temperature error	00:10 min:sec
	Limit values pressure 1	Upper and lower threshold values	Pressure 1 min.	007,0 bar
		Pressure	Pressure 1 max.	010,0 bar
			Set pressure 1	02:00 min:sec
			Clear temperature error	01:00 min:sec
	Limit values pressure 2	Upper and lower threshold values	Pressure 2 min.	007,0 bar
		pressure	Pressure 2 max.	010,0 bar
			Set pressure 2	02:00 min:sec
			Clear temperature error	01:00 min:sec
	Maintenance interval	Intervals to the next maintenance	Maintenance interval	365 days
			Clear maintenance cycle	no
Error memory				
	no	Only logging errors and changes		n. a.

24. EU Declaration of Conformity

EU - Declaration of conformity

We hereby declare as the responsible authorised representative

KSI Filter Technology GmbH
Siemens ring 54-56
D-47877 Willich

for the products listed below:

ETC4.0 and ETP4.0

according to the requirements of the directive
EMC Directive 89/336/EEC
Directive 2014/35/EU
2011/65/EC Directive ROHS

complies with the essential protection requirements laid down in the Council Directive on the approximation of the laws of the Member States relating to electromagnetic compatibility (89/336/EEC) and the 2014/35 EU on voltage limits of equipment provided. This declaration applies to all specimens manufactured in accordance with the relevant manufacturing documents. The following standards were used to assess the product with regard to electromagnetic compatibility:

EN 61000-6-3 Electromagnetic compatibility; Generic standard Emission standard for residential, commercial and light-industrial environments

EN 61000-6-1 Electromagnetic compatibility; immunity for residential, commercial and light-industrial environments

In the event of any modifications to the product not agreed with the manufacturer, this declaration shall lose its validity.

Signed:

Holger Krebs,
Managing Director

KSI Filtertechnik GmbH

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