

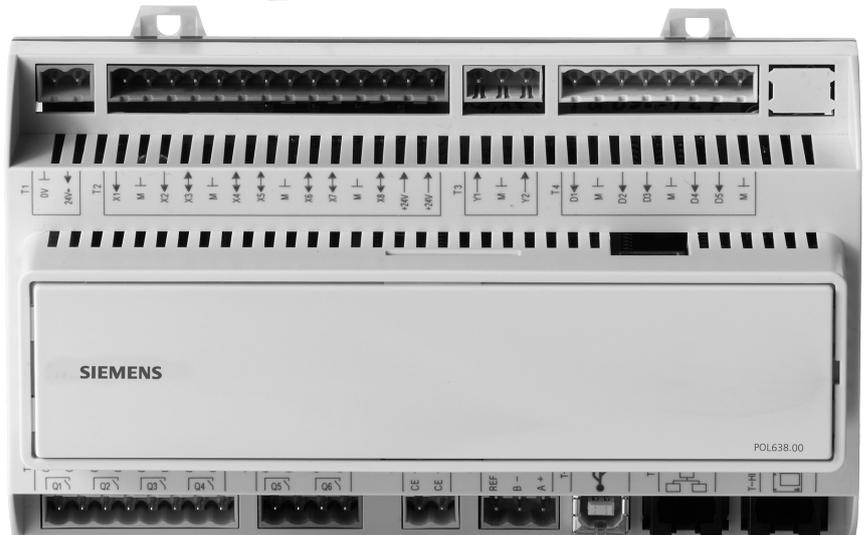
Control equipment

Climatix

Short Manual

Climatix Control System

[v. 2.14.10, 2.14.20, 2.14.30 & 2.14.40]



Air handling with the focus on LCC

Table of contents

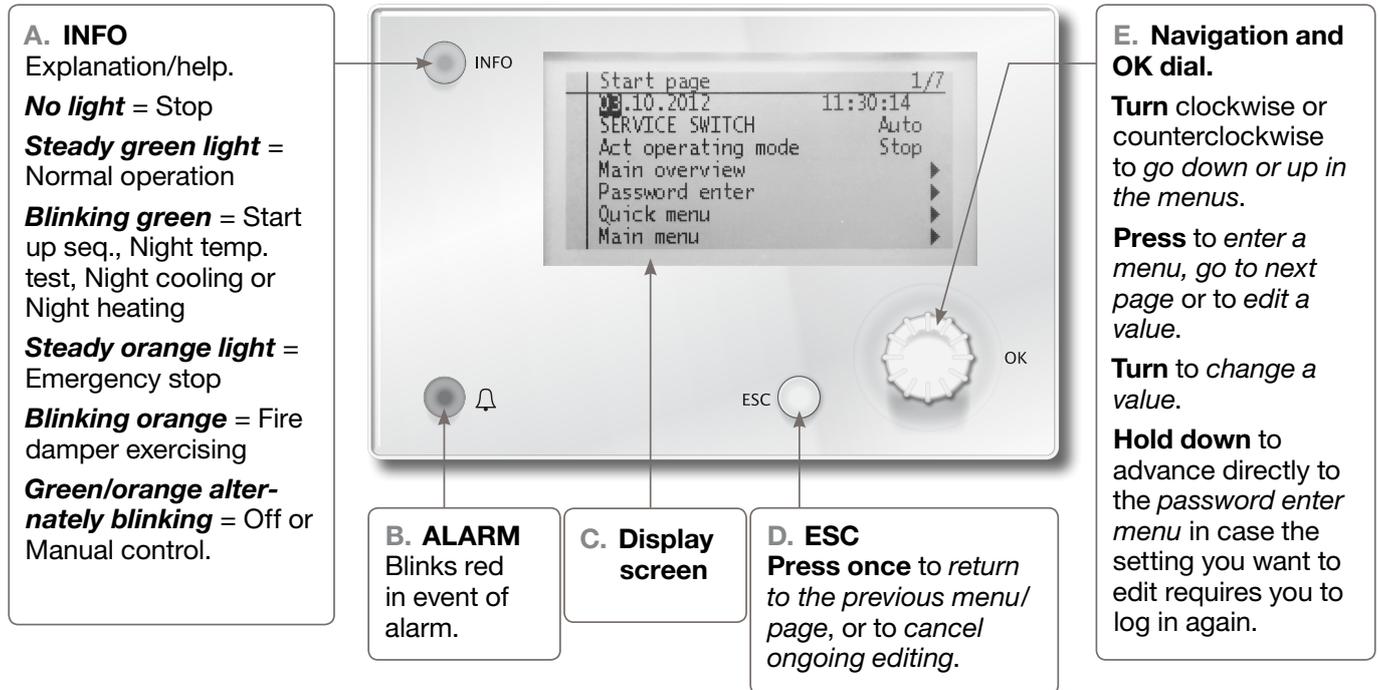
1. External HMI (DM)	3
2. Functions	7
2.1 Overall functions	7
2.2 Operating mode	9
2.3 Time switch program - details	13
2.4 Week scheduler	13
2.5 Day scheduler	14
2.6 Calendar (exceptions and stop)	14
2.7 Temperature control	16
2.8 ECO control	19
3. Alarms	20
3.1 General	20
3.2 Alarm list details	22
3.3 Alarm list	22
3.4 Alarm history	22
3.5 Alarm settings and history list	23
4. Commissioning Modbus	24
4.1 Commissioning internal Modbus RTU	24
4.2 Commissioning internal Modbus TCP	26
5. Save and reset commissioning/factory settings	27
5.1 Save	27
5.2 Reset	27

1. External HMI (DM)

Operating elements

The external HMI has the following operating elements:

Hand unit



Logging in

Use "Password enter 1000" (basic access level) for editing the most common parameters, such as setpoints, temperatures, etc.

If additional parameters and setpoints require editing, use "Password enter 2000" (normal access level)..

C. Display screen

Displays menus, parameters, parameter settings, operating settings, etc.

E. Navigation and OK dial

- Select menus, parameters, parameter values: **Turn.**
- Other parameter values: **Turn.**
- Go to lower levels or setting pages: **Press.**
- Exit setting pages and assume changed values: **Press.**
- Go to password enter page: **Press long.**

D. ESC button

- Go to next higher level: **Press.**
- Exit setting pages and reject changed values: **Press.**
- Go back to last active page (after going to password handling page using the navigation dial): **Press.**
- Go back to last active page (after going to Main Menu page using the Info button): **Press.**

B. Alarm button

LED:

- Off: No alarm.
- Blinking: Alarm pending.
- Lit continuously: Pending acknowledged alarm.

Press button to do the following:

- Go to last alarm.
- Go to alarm list (displays pending alarms and alarm history).
- Go to alarm history.
- Go to alarm settings.
- Acknowledge and reset alarms in alarm list or history.

More information

More information on alarms is available in Section 3, Alarms

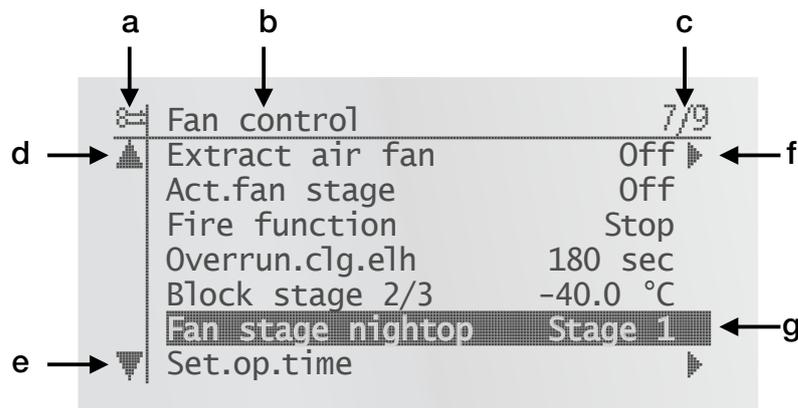
A. Info button

- Go to the main menu and alternate between the main menu and start page: **Press.**

Display screen

Display design:

- a Present access levels:
 - No symbol: No level
 - 1:a key: basic access level (Password enter: 1000)
 - 2:a key: normal access level (Password enter: 2000)
 - 3:e key: technical access level
- b Title of displayed pages.
- c 7: Number of the selected line; 9: Total number of lines on page.
- d Page includes additional lines above, visible when you scroll upward.
- e Page includes additional lines below, visible when you scroll downward.
- f From here you can access another level below.
- g Currently selected line.



Navigation lines



On navigation lines, the object is highlighted in black when selected. It displays the present value for a component in front of the navigation arrow.

Navigation:

- Select line: **Turn the navigation dial.**
- Switch to level below: **Press the navigation dial.**

Display line



The object is also highlighted in black when selected for display lines (read only). It displays the present value for a component.

Setting line



The parameter name and its present value are highlighted against a black background.

To set a value:

- Select the line: **Turn the navigation dial.**
- To switch setting page: **Press the navigation dial.**
- Set the parameter value on setting page: **Turn the navigation dial.**
- Exit the setting page and assume the changed parameter value: **Press the navigation dial.**
- Exit setting page without assuming changed parameter value: **Press ESC**

To set discrete parameter values..

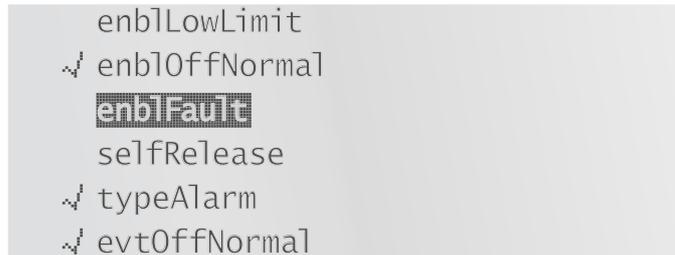
When only one value is selectable:



The checked off line (Fire Setpoint) displays the presently set value. Change the value as follows:

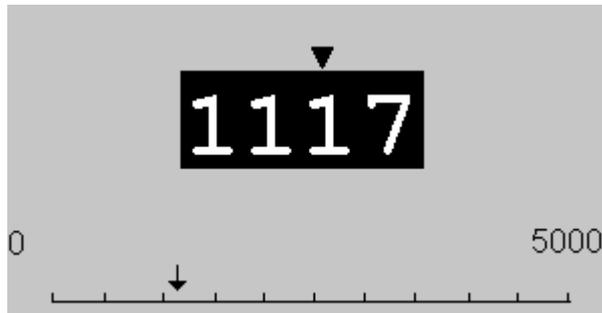
- Select new value: **Turn the navigation dial.**
- Assume new value and exit the setting page: **Press the navigation dial.**
or
- Retain old value and exit the setting page: **Press the ESC button.**

When multiple values can be selected:



Checked off lines display presently selected values. Change values as follows:

- Select new value: **Turn the navigation dial.**
- Select or deselect value: **Press the navigation dial.**
- Assume the new value:
 - Select **Done: Turn the navigation dial.**
 - Select **Done: Press the navigation dial.**
- or
- Retain the old value and exit the setting page: **Press the ESC button.**



The scale displays minimum and maximum adjustable values.

Change the preset value as follows:

- Adjust the number under the arrow ▼: **Turn the navigation dial.**
- To move the arrow to the left: **Turn continuously via increments of ten** (9--->0 or 0--->9).
- To move the arrow to the right: **Do not turn the knob for at least one second.**
- Assume the new value and exit the setting page: **Press the navigation dial.**
or
- Retain the old value and exit the setting page: **Press the ESC button.**

2. Functions

2.1 Overall functions

2.1.1 General

This section describes special functions that relate to the application as a whole.

Parameter **Main menu > Overall functions.**

Parameter	Value	Function
Summer-winter calculation	<ul style="list-style-type: none"> – Summer – Winter 	<p>Displays present status for summer and winter operation.</p> <p>Go to page to parameterize summer/winter changeover.</p>
Manual operation	<ul style="list-style-type: none"> – Auto. – Manual 	<p>Displays whether one of the outputs is not in auto mode (intervention via HMI), a sensor is out of service or the manual operation mode is not on auto.</p> <p>Go to page with all digital inputs, e.g. to set the alarm class for enabled manual alarm.</p> <ul style="list-style-type: none"> – Auto mode: No element in manual mode or out of service. Manual mode: At least one element is in manual operation or out of service.
Enable manual alarm	<ul style="list-style-type: none"> – No – Yes 	<p>Enables an alarm if in Manual mode = Manual.</p> <ul style="list-style-type: none"> – No alarm will trip. – Alarm enabled.
Enable comm. test		The function is not available.
Communications test		The function is not available.

2.1.2 Summer/winter changeover

Prerequisites

None.

Function

It decides whether the plant is operating in the summer or winter mode based on various options (hardware input, date, temperature). This information is required (as an option) to shut down humidification in summer, to changeover the Combi Coils and to changeover temperature control (Tmp control mode = RmSplyC Su or RtSplyC Su).

A hardware input enabled for the changeover (Main menu > Configuration > Configuration 1 > Su/Wi input = Yes) has the highest priority (Signal 1 = Summer).

The temperature or date can affect the changeover depending on parameterization. Both criteria must be met when both are enabled. There will be no changeover and the plant will operate continuously in the winter mode if no criterion is enabled.

Main menu > General func. > Summer-winter calculation

Parameter	Value	Function
Status	<ul style="list-style-type: none"> – Winter – Summer 	Status for summer/winter changeover: <ul style="list-style-type: none"> – Winter operation is enabled. – Summer operation is enabled.
Su/Wi input	<ul style="list-style-type: none"> – Winter – Summer 	Status of input on hardware side for changeover. Go to page with all digital input settings to change the input's direction of control, for example change the output signal. <ul style="list-style-type: none"> – Winter operation enabled: Signal 0. – Summer operation enabled: Signal 1.
Outs. temp. dampened		Dampened outside air temperature.
Date/Time, summer	** *.*	Set date and time for changeover to summer operation. Example: 23:30 01.Apr ---> Changeover on April 1 at 11:30 PM. <ul style="list-style-type: none"> – Asterisks only (*.* *.*): Changeover date is not relevant; changeover occurs based on temperature. Permissible time entries: *.* ---> 00:00 *.:20 ---> 00:20 10:* ---> 10:00 <ul style="list-style-type: none"> – Date entry: Allowed: 15.May Not allowed by month: Odd/Even.
Date/Time, winter	** *.*	Set date and time for changeover to winter operation. Example: 10:40 PM 01.Oct ---> Changeover on October 1 at 10:40 PM. Note: See summer Date / Time parameter.
Time constant	0...36000 [h]	Time constant to calculate dampened (determined over this period) outside air temperature. Set this value for the short period to 0 to reset the dampened or assume present outside air temperature.
Outs temp summer	-64...64 [°C]	Changes over to summer operation when the dampened outside air temperature is greater than this value.
Outs temp winter	-64...64 [°C]	Changes over to winter operation when the dampened outside air temperature is less than this value.

2.2 Operating mode

2.2.1 General

Purpose	Function to set and display all settings for the operating mode in question, i.e. start conditions, switch-off conditions, operating mode. The plant may also be controlled using the HMI.
Prerequisites	None.
Parameterization	None. The configuration in Configuration1 and Configuration 2 provide the various ways to switch on the plant.

Display/settings **Main menu > Unit > Operating mode**

Parameter	Value	Function
Present	<ul style="list-style-type: none"> – Off – On/Comfort – Economy – Na – Osstp – Night clg – UnOcc – TempTest – FireDamper – Fire – Stop – OverRun – Startup 	Plant operating state: <ul style="list-style-type: none"> – Plant is switched off. – Plant operating in Comfort Mode. – Plant operating in Economy Mode. – Extra operating mode, currently unused. – Optimum start (boost function active). – Night cooling, active. – Unoccupied mode; heating or cooling active. – TempTest active for the plant to update the duct sensor temperature. – Fire damper test running. – Plant in Fire mode (depending on the parameterization of Fire mode). – Plant stopped and locked (Controller in Start-up Phase, Configuration not Done; HighClass Alarm; Emergency Stop). – Fan overrun to cool the air heater – Plant in start-up routine..
Schedule	<ul style="list-style-type: none"> – Off – Stage 1...Stage 3 	Displays current command for time switch program (only if Tsp funct. = Stage). Goes to the page for setting parameters of the time switch program.
Schedule	<ul style="list-style-type: none"> – Off – Eco.St1...Eco.St3 – Comf.St1...Eco.St1 	Displays current command for time switch program (only if Tsp funct. = Step+temp). Goes to the page for setting parameters of the time switch program.
From BMS	<ul style="list-style-type: none"> – Auto. – Off – Stage 1 – Stage 2 – Stage 3 	Displays operation from BMS (only if Tsp.funct. <> Step+temp). The value can be set via HMI also for inactivated communication. <ul style="list-style-type: none"> – Auto mode: The plant can be switched on via time switch program, night cooling, etc. – Plant off. – Plant operating at stage 1 (using setpoint stage 1 for analogue controlled plants). – Plant operating at stage 2 (using setpoint stage 2 for analogue controlled plants). – Plant operating at stage 3 (using setpoint stage 3 for analogue controlled plants).

From BMS	<ul style="list-style-type: none"> – Auto. – Off – Eco St1 – – Comf.St1 – – Eco St2 – – Comf.St2 – – Eco St3 – – Comf.St3 	<p>Manual plant operation via HMI (only possible for Tsp function = Stages+Tmp). Value can be set via HMI even if communication is deactivated.</p> <ul style="list-style-type: none"> – Auto mode: The plant can be switched on via time switch program, night cooling, etc. – Plant switched off. – Plant operating in Economy mode at stage 1 (using setpoint stage 1 for analogue controlled plants). – Plant operating in Comfort mode at stage 1 (using setpoint stage 1 for analogue controlled plants). – Plant operating in Economy mode at stage 2 (using setpoint stage 2 for analogue controlled plants). – Plant operating in Comfort mode at stage 2 (using setpoint stage 2 for analogue controlled plants). – Plant operating in Economy mode at stage 3 (using setpoint stage 3 for analogue controlled plants). – Plant operating in Comfort mode at stage 3 (using setpoint stage 3 for analogue controlled plants).
External control	<ul style="list-style-type: none"> – Auto. – Off – Stage 1 – Stage 2 – Stage 3 	<p>Displays current command from external controller.</p> <ul style="list-style-type: none"> – Auto mode: The plant can be switched on via time switch program, night cooling, etc. – Plant switched off. – Plant operating at stage 1 (using setpoint stage 1 for analogue controlled plants). – Plant operating at stage 2 (using setpoint stage 2 for analogue controlled plants). – Plant operating at stage 3 (using setpoint stage 3 for analogue controlled plants).
NightOpTemp.test	---	<p>Starts plant to update sensor values for return-air controlled plant and activated night cooling or UnitStart TmpDelta. (Temperature difference start). Jumps to page to parameterize night kick.</p>
Night cooling	---	<p>Night cooling (free cooling). Jumps to page to parameterize night cooling.</p>
UnOcc mode	---	<p>Starts plant at night based on temperature difference. Jumps to page to parameterize temperature difference start.</p>
Boost	---	<p>Boost plant start. Jumps to page to parameterize boost plant start.</p>
Powerup delay	0...36000 [s]	<p>Delayed plant start after controller restart.</p>

2.2.2 Supply air/extract air fan control

Function

Fans can be directly controlled, pressure-controlled, flow controlled or controlled as master-slave. Common or separate outputs are used depending on the configuration.

Fans may include an alarm and/or active feedback contact.

Up to 3 setpoints per fan can be defaulted for controlled fans and achieving the setpoints can be monitored.

You can influence the fan stage (speed) by room temperature, air quality, humidity, outside air temperature or supply air temperature.

Operating hours are recorded separately. A message can be triggered upon reaching a certain number of operating hours for the supply air fan.

Parameterization

Main menu > Unit > Fan control > Supply air fan

Main menu > Unit > Fan control > Extract air fan

Parameter	Value	Function
Actual value	xx [l/s], [Pa]	Depends on control type (Fan control mode), for example actual pressure value.
Controller	0...100 [%]	Actual controller value. Go to page for all controller settings.
Output signal	0...100 [%]	Actual value on output. Go to page for all settings for analogue outputs.
Command	<ul style="list-style-type: none"> – Off – Stage 1 – Stage 2 – Stage 3 	Actual fan mode. Go to page for all settings for modulated digital outputs.

Main menu > Unit > Fan control > Supply air fan > Setpoints/Settings

Main menu > Unit > Fan control > Extract air fan > Setpoints/Settings

Parameter	Value	Function
Act.fan stage	<ul style="list-style-type: none"> – – Off – Stage1 – Stage2 – Stage3 	Actual fan mode. <ul style="list-style-type: none"> – Off. – Stage 1 (setpoint 1) active. – Stage 2 (setpoint 2) active. – Stage 3 (setpoint 3) active.
Act.setp.sa	0...100 [%] 0...40'000 [l/s] 0...5000 [Pa]	Depends on control type (fan control mode <> Direct or DirectVar): Present calculated setpoint for fan.
Stage 1	0...100 [%] 0...40'000 [l/s] 0...5000 [Pa]	Depends on control type (fan control mode <> Direct or DirectVar): Setpoint for stage 1 (TSP stages >= 1 for controlled fans).
Stage 2	0...100 [%] 0...40'000 [l/s] 0...5000 [Pa]	Depends on control type (fan control mode <> Direct or DirectVar): Setpoint for stage 2 (TSP stages >= 2 for controlled fans).
Stage 3	0...100 [%] 0...40'000 [l/s] 0...5000 [Pa]	Depends on control type (fan control mode <> Direct or DirectVar): Setpoint for stage 3 (TSP stages >= 3 for controlled fans).
Max boost	0...(100 – highest setp.) [%] 0...(40'000 – highest setp.) [l/s] 0...(5000 – highest setp.) [Pa]	Depends on control type (fan control mode <> Direct or DirectVar): Highest possible setpoint: Setpoint for highest stage + Max boost [%], [l/s], [Pa] (see also Fan compensation).
Min runtime	0...36000 [s]	Minimum running time of fan after start.

Switch on delay.	0...36000 [s]	For supply air fan only! Defines switch-on delay for the supply air fan after an extract fan start.
Start up delay fdbk.	0...36000 [s]	Defines the period after the fans have started without feedback before a feedback alarm trips. A delayed feedback error alarm can be set separately while the plant is operating.
Deviation alarm	<ul style="list-style-type: none"> – Passive – Active 	Conditions: Fan control mode <> Direct, Dir.Var or Fixed frequ. Present state for the setpoint/actual value monitoring of the supply air pressure (or volume). Go to parameter page for supply air monitoring. <ul style="list-style-type: none"> – No alarm. – Pending alarm.

Important!

If Contact function = NO (normally open) and the element is On, feedback can be used as alarm only.

2.2.3 Manual control of outputs

Function	Supply air fan, extract air fan, heat recovery, cooling, etc. can be controlled manually by setting the input and output respectively.
Parameterization	Main menu > Unit > Outputs > Digital outputs/Manual outputs
Digital	Fan, Pump, Damper, etc. Manual control > Select <i>ON</i> , <i>OFF</i> , or <i>Stage</i> The actual value changes, the LED is blinking Reset: <i>Manual control</i> > Select <i>NULL</i> .
Analogue	Fan, Recovery, Heating, Cooling, etc. Manual control % > Select (set required output signal). Manual control changes to <i>Active</i> , and the LED is blinking. Reset: Select <i>Manual control Active</i> and change to <i>NULL</i> .
Reset all	<i>NULL</i> denotes that the output is controlled by the program's parameters and functions. <i>Active</i> denotes that the output has been manually set. The LED blinks when some output is manually controlled. Reset by changing <i>Active</i> to <i>NULL</i> or by selecting Main menu > General functions > Reset I/O to Auto > Select <i>Auto</i> and confirm (OK).

2.3 Time switch program - details

This section describes the functions and entries for time switch programs and calendars.

Possible entries vary depending on the configuration. It is set in Configuration 1:

Main menu > Configuration > Configuration 1 > TSP function.

Main menu > Configuration > Configuration 1 > TSP stages

Aux-time sched. program

The auxiliary time switch program has the set entries Off and On:

Main menu > Configuration > Configuration 2 > Aux.TSP.

Function

When no elements with a higher priority (e.g. Manual Operation <> Auto) are enabled, the plant can be switched Off or any stage (for frequency controlled fans to the given stage setpoint) using the time switch program. A maximum of 6 switching time entries are possible per week.

The calendar Fix Off (in operating mode only) overrides the calendar exception and this in turn overrides the normal time switch program. Up to 10 periods or exception days can be defined for each calendar.

Note!

TSP function=Step+tmp: Both the fan stage setpoint and the temperature setpoint (Comfort/Economy) are determined by the time scheduler.

2.4 Week scheduler

Parameter

Quick menu > Time switch program > Schedule

Main menu > Unit > Operating functions > Time switch program > Schedule

Parameter	Value	Function
Present value	---	Switching according to schedule or mode selected for continuous operation.
Continuous operation	No Stage 1 Stage 2 Stage 3	The <i>Continuous operation</i> function is switched off. The unit runs according to the TSP schedule. The unit runs constantly at operating stage 1. The unit runs constantly at operating stage 2. The unit runs constantly at operating stage 3.
Monday		Displays enabled command if present day is Monday. Last entry of the day applies to 23:59 (11:59 PM). Go to daily switching schedule for Mondays.
Copy schedule	Mon. to Tues.–Fri. Tues.–Sun.	Copies entries for the time switch program from Monday to Tuesday through Friday: Passive position (copy disabled). Copying starts. Returns to display. Copying starts. Returns to display.
Tuesday		Same function as for Monday.
...		...
Sunday		Same function as for Monday.
Exception		Displays enabled command if present day is an exception. Go to daily switching schedule for exception days.
Period:Start		(Available at <i>Technical access level</i> only.) Start date for weekly schedule. The entry *,*.00 denotes that the weekly schedule is always enabled. ---> Enable weekly schedule.
Period:End		(Available at <i>Technical access level</i> only.) Start date and time for when the weekly schedule no longer applies.

2.5 Day scheduler

Parameter

Parameter	Value	Function
Present value	---	Switching according to schedule when the present day of the week is the same as the switching day.
Day schedule	– Active	Status of the current week or exception day: – Present week day (system day) is the same as the switching day.
Time 1		Special case: This entry must not be adjusted, it must always be set to 00:00.
Value-1		Switching command for Time 1.
Time 2		Switching time 2. *: * ---> Entry disabled.
Value-2 ... Value-6		Analogue value 1.
Time-3 ... Time-6		Analogue time 2.

2.6 Calendar (exception and stop)

Exception days are defined in the calendar. These may include specific days, periods or days of the week. The exception days override the weekly schedule.

The plant switches according to the weekly scheduler under the exceptions set in the daily schedule when an entry is enabled in the calendar exception.

The plant switches off when the entry Calendar stop is enabled.

- **Main menu > Unit > Op. functions > Time switch program > Calendar exception**
- **Main menu > Unit > Op. functions > Time switch program > Calendar stop**
- **Main menu > Unit > Auxiliary > Time switch prog.output > Calendar exception**

Parameter	Value	Function
Present value	– Passive – Active	Displays whether a calendar entry is currently enabled: – No calendar entry is currently enabled. – A calendar entry is currently enabled.
Choice-x	– Date – Range (Interval) – Weekday – Passive	Specifies the type of exception: – A certain day (e.g. Friday). – A period (e.g. vacation). – A certain day of the week. – Entries are ignored. This value should always be set at last, after the dates.
-(Start)Date		– Choice-x = range: Enter start date for the period. – (Choice-x = date: Enter data for a single day)
-End date		Choice-x = range: Enter end date for the period. End date must always be after the start date.
-Weekday		For Choice-x = weekday only: Enter the day of the week..

Only the entry in (start) is relevant.

- -(Start) Date = *,01.01.09
Result: January 1, 2009 is an exception date.
- -(Start) Date = Mon,*.*.00
Every Monday is an exception day.
- -(Start) Date = *,*.Evn.00
The days for the entire month are exception days for each even month (February, April, June, August, etc.).

Examples:

Choice-1 = Range

The entries in (start) date and end date are relevant.

- -(Start) Date = *,23.06.09 / -End date = *,12.07.09
23 June 2009 through 12 July 2009 are exception days (e.g. vacation).
-(Start) Date = *,23.12.00 / -End date = *,31.12.00
23–31 December is an exception period each year. End date = *,01.01.00 does not work here, since 1 January is before 23 December.
- -(Start) Date = *,23.12.09 / -End date = *,01.01.10.
23 December 2009 through 1 January 2010 are exception days.
- -(Start) Date = *,*.00 / -End date = *,*.00
Caution! This entry is always enabled! The plant is continuously on exception or off.

Examples:

Choice-1 = Week day

The entries for week day are relevant.

- Weekday = *,Fri,*
Every Friday is an exception day.
- Weekday = *,Fri,Evn
Each Friday in even months (February, April, June, August, etc.) is an exception day.
- Weekday = *,*,*
Caution! This entry is always enabled! The plant is continuously on exception or off.

2.7 Temperature control

2.7.1 General

Prerequisites

Displays only functions that are enabled in Configuration 1 or Configuration 2. All other functions are hidden.

Parameterization

Main menu > Unit > Temp. control

Parameter	Function
Act controlled tmp.	Present temperature is used for control. Either supply air, room air or extract air temperature, depending on the setting and control type.
Temp setpoints	Go to setpoint page with all setpoints affected by temperature control, e.g. comfort, economy, cascade min max, deviation alarm, summer-winter compensation..
Cascade controller	Displays heating and cooling setpoint. Go to cascade controller page with detailed settings.
Min/max ctrlr sply	Go to page for min/max ctrlr sply to parameterize the minimum and maximum limit controller. You can use the existing supply air sensor to limit the minimum or maximum allowable supply air temperature if purely room or return air control is active..
Hrec damper	Present value of the mixed air damper control. Go to parameter page for mixed air damper control.
Heat recovery	Present value for heat recovery control. Go to parameter page for heat recovery control.
Heating	Present value for heating register control. Go to parameter page for heating register control..
El heating	Present value for electric heating register control. Go to parameter page for electric heating register control.
Cooling	Present value for cooling register control for an additional register. Go to parameter page for cooling register control.
Extra heating	Present value for heating register for an extra register. Go to parameter page for heating register control.
Extra el heating	Present value for electric heating register control for an extra register. Go to parameter page for electric heating register control.
Extra cooling	Present value for cooling register control for an extra register. Go to parameter page for cooling register control.
Fan heating	Present value for fan heating sequence. Go to parameter page for fan heating sequence.
Fan cooling	Present value for fan cooling sequence. Go to parameter page for fan cooling sequence.
Fan compensation	Present value for fan temperature compensation. Go to parameter page for fan temperature compensation.

2.7.2 Temperature setpoints

Prerequisites

Displays only functions that are enabled in Configuration 1 or Configuration 2. All other functions are hidden.

Parameterization

Main menu > Unit > Temp. control > Temp. setpoints

Parameter	Value	Function
Pres.ctrd tmp	---	Present temperature used for control. Either supply air, room air or extract air temperature, depending on setting and control type.
Pres.setp.clg	---	Present calculated room or supply air setpoint for cooling.
Pres.setp.htg	---	Present calculated room or supply air setpoint for heating.
Pres.sasetp.clg	---	Present calculated supply air setpoint for cooling using cascade control.
Pres.sasetp.htg	---	Present calculated supply air setpoint for heating using cascade control.
External setpoint	---	Present external setpoint or setpoint compensation.
Supply air comp.	-10.0...10.0 [°C]	Setpoint compensation for winter operation for: Tmp control mode = RmSplyC Su (Room supply air cascade control in summer, pure supply air control in winter). or Tmp control mode = RtSplyC Su (return supply air cascade control in summer, pure supply air control in winter). The room setpoint for cascade control, active in the summer, are active (summer - winter changeover). During winter, these room setpoints must be adapted to the supply air control.
Comfort heating	0...99 [°C]	Comfort based setpoint for heating. Only available when Tmp stpt selection = +/-Half Dz.
Comfort dead zone	0...20 [°C]	Comfort dead zone. Only available when Tmp stpt selection = Clg - degrees Celsius or Htg + degrees Celsius or +/- Half Dz.
Setp.extra sequ.	0...99 [°C]	Setpoint for extra heating, extra electric heating, extra cooling if configured as stand alone.
Setp.min sply.temp	15.0... Setp.max supply temp [°C]	Lowest permissible supply air temperature for pure room or extract air control with additional available supply air sensor. Limited control of the cooling setpoint occurs if the supply air temperature < Setp.min sply.temp. The heating register is started if this is not enough.
Setp.max sply.temp	Setp.min supply temp ... 50.0 [°C]	Highest permissible supply air temperature for pure room or extract air control with additional available supply air sensor. Limited control of the heating setpoint occurs if the supply air temperature > Setp.max sply.temp.
Setp.min sply.temp	-64.0 ...99.0 [°C]	Lowest permissible supply air temperature for cascade control.
Setp.max sply.temp	-64.0 ...99.0 [°C]	Highest permissible supply air temperature for cascade control.
Delta flt.maxlim.	0.0...64.0 [°C]	Maximum difference between supply air and room air temperature for heating when Floating Min/Max is enabled (Configuration 2).
Delta flt.minlim.	0.0...64.0 [°C]	Maximum difference between supply air and room air temperature for cooling when Floating Min/Max is enabled (Configuration 2).
Fan htng deadz	0...20 [°C]	Controller dead zone: Setpoint = Supply air heating setpoint - dead zone.

Fan clg dead zone	0...20 [°C]	Controller dead zone: Setpoint = heating setpoint for supply air – dead zone. If sequence is placed last: Supply air cooling setpoint + dead zone.
Fan comp tmp stpt	0...99 [°C]	Setpoint for room related fan compensation. See Fan compensation; Function: Increase/decrease fan setpoint based on room temperature.
Fan comp tmp functn	Increase Decrease	See Fan compensation; Function: Increase/decrease fan setpoint based on room temperature.
Summer comp.	---	Present value for summer compensation. Go to parameter page for summer compensation.
Winter comp.	---	Present value for winter compensation. Go to parameter page for winter compensation.
Sply tmp dev alarm	---	Present state for the setpoint/actual value for monitoring the supply air pressure: Passive: No alarm. Active: Pending alarm. Go to parameter page for supply air temperature monitoring.
Room tmp dev alarm	---	Present state for the setpoint/actual value for monitoring the room temperature: Passive: No alarm. Active: Pending alarm. Go to parameter page for room temperature monitoring

Supplementary temperature setpoints for enabling Step+temp.:

Comfort setpoint	0...99 [°C]	Comfort setpoint. Available only when Setpoint type temp. = +/- HalfDz.
Comfort cooling	0...99 [°C]	Comfort setpoint for cooling. Available only when Setpoint type temp. = HeatingCooling or Cooling–Dz.
Economy setpoint	0...99 [°C]	Economy setpoint. Available only when Setpoint type temp. = Sph + HalfDz.
Economy cooling	0...99 [°C]	Economy setpoint for cooling. Available only when Setpoint type temp. = HeatingCooling or Cooling–Dz.
Economy heating	0...99 [°C]	Economy setpoint for heating. Available only when Setpoint type temp. = HeatingCooling or Heating–Dz.
Economy dead zone	0...20 [°C]	Economy dead zone. Available only when Setpoint type temp. = Cooling–Dz, Heating + Dz or +/- HalfDz.

2.7.3 Freeze protection sensor performance test

Prerequisites

Displays only the functions enabled in Config.

Parameterization

Main menu > Unit > Inputs > Temperatures > Freeze guard temp.test

Select -> Test

Enable alarm and freeze guard functions in the alarm list.

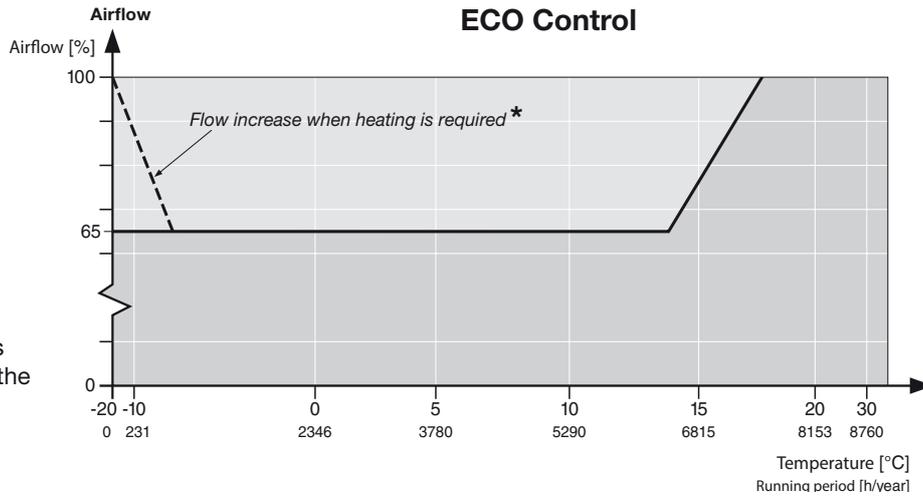
Confirm/Reset.

2.8 ECO control

Parameter

Main menu > Unit > ECO Control

Parameter	Value	Function
Sply fan st2 stpt	500l/s	Supply fan normal speed winter
Sply fan st3 stpt	800l/s	Maximum speed on supply fan summer (increased fan speed at cooling and heating demand)
Exh fan stage 2 stpt	500l/s	Extract fan normal speed winter
Ext fan stage 3 stpt	800l/s	Maximum speed on extract fan summer (increased fan speed at cooling and heating demand)
Comfort htg stpt	20.0°C	Winter temperature
Comfort tmp deadz	2.0°C	Summer temperature (Comfort htg setp plus dead zone 22.0°C)
ECO 2 Fan comp tmp deadz	-0.5°C	Increased fan speed to meet heating demand (Comfort htg setp minus dead zone 19.5°C)
ECO 1 Outs air tmp summer	14°C	Outdoor air temperature for supply air temperature control change to cascade control
ECO 1 Outs air tmp winter	12°C	Outdoor air temperature for cascade control change to supply air temperature control



* Flow increase, if needed, if the unit is utilized for keeping the premises warm.

3. Alarms

3.1 General

This section deals with the following topics:

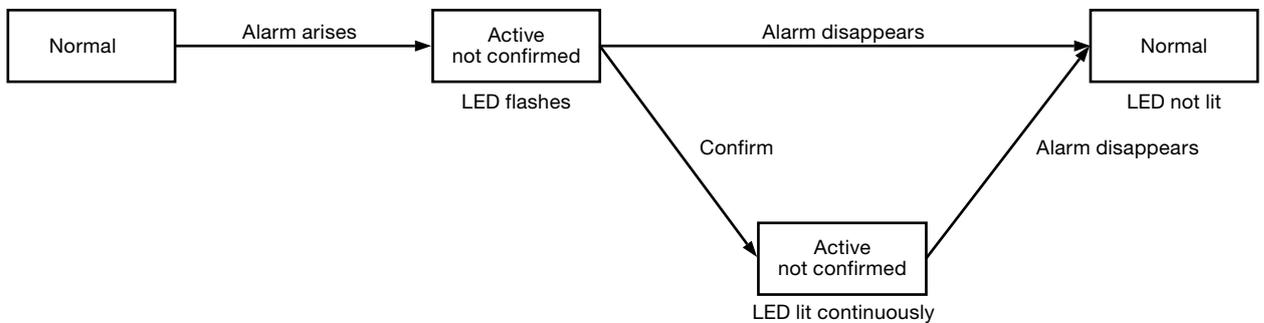
- Alarms.
- Alarm lists.
- History lists.
- Acknowledged alarms.
- Reset alarms.

Principles

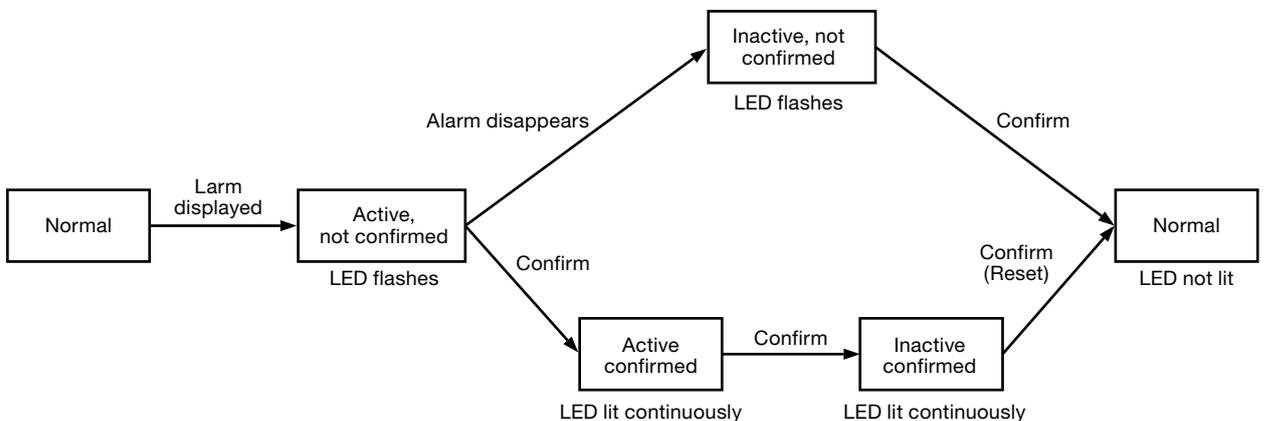
- Alarm and history lists may include a maximum of 50 entries.
- Each alarm entry includes a description, notification class, alarm group, date and time.
- Each new alarm generates a line in the alarm list and in the history list.
- Active alarms:
 - The alarm LED blinks on the external HMI.
 - The alarm symbol is displayed in the built-in HMI.
- Acknowledged but still active alarms:
 - The alarm LED is lit on the external HMI.
 - The alarm symbol is still displayed in the built-in HMI
- Reset alarms:
 - Alarm list: Line is deleted.
 - History list: The alarm entry indicates that the alarm has been deleted.

Saving and non-saving alarms

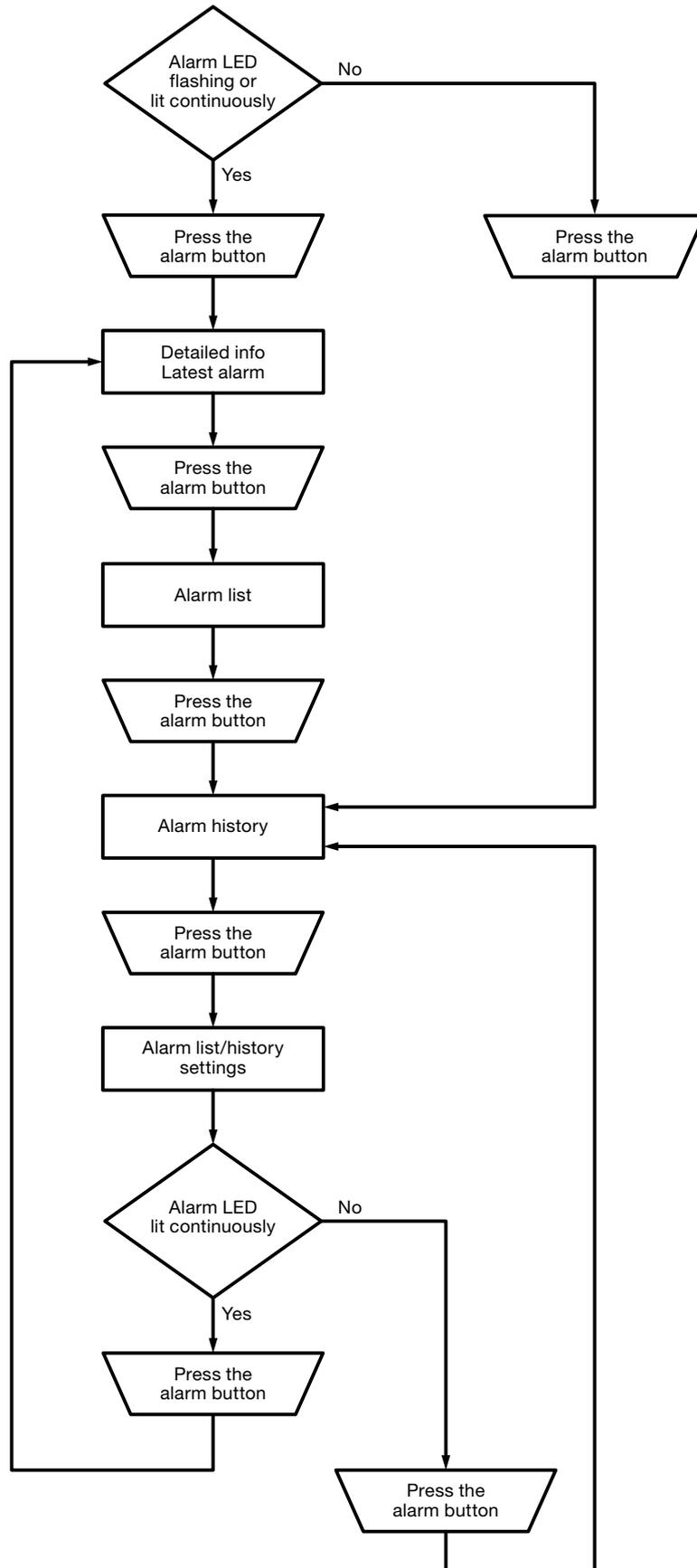
Procedure for non-saving alarms:



Procedure for alarms that maintain values:



Alarm button functions



3.2 Alarm list details

The alarm list contains the following information about the most recent alarm:

Line 1	+ Alarm name	Status
Line 2	Notification class	(Notification group)
Line 3	Date	Time of day
Example:	+FrGuardTemp.htg: 0 15.10.2009	Alarm Emerg(A) 21:32

3.3 Alarm list

The following details about active alarms are included in the alarm list:

Line 1	The line displays how many alarms are still not acknowledged: Acknowledged Passive number. Example: Acknowledged Passive 14 Press the knob on the HMI to acknowledge all unacknowledged alarms.	
Other lines	+ Alarm name	Status
	Example: + Extract air temp.:	Alarm
	<ul style="list-style-type: none"> – Press the navigation dial to display details about the alarm. – Press the alarm button to display the list settings. 	

Note!

The list can include up to 50 entries.

3.4 Alarm history

The following details on active and passive alarms are included in the alarm list:

Line 1	The line displays how many alarms are still not reset: Acknowledged Passive number Example: Acknowledged Passive 14 Press the knob on the HMI to acknowledge all unacknowledged alarms.	
Other lines	+ Alarm name:	Status
	Example: + Extract air temp.:	Alarm (notified alarm).
	- Extract air temp.:	OK (deleted larm).
	<ul style="list-style-type: none"> – Press the navigation dial to display details about the alarm. – Press the alarm button to display the list settings. 	

Note!

The list can include up to 50 entries.

3.5 Alarm settings and history list

Parameter

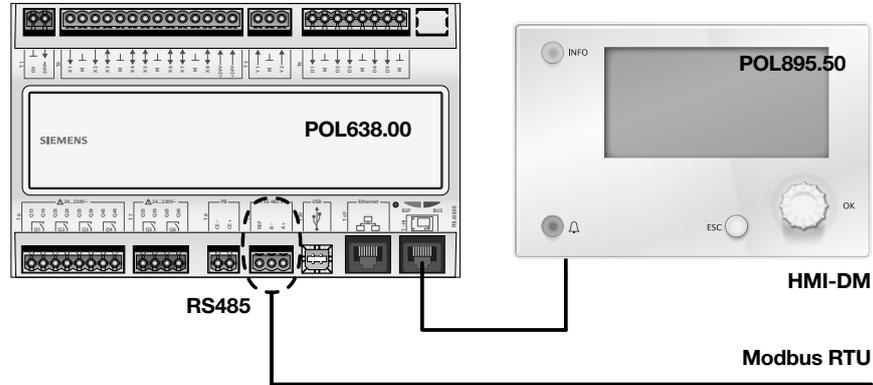
Parameter	Value	Function
Larm list:		
Reset		Reset / acknowledge pending alarms.
Sorting order 1	<ul style="list-style-type: none"> – Time – Name – Class – Status 	Main sorting criteria: <ul style="list-style-type: none"> – Sort by data and time. – Sort alphabetically in ascending order. – Sort by notification class (0,1,2,3 corresponding to Danger/High/Low/Warning). – Sort by status (fault, no fault).
Sorting order 2	<ul style="list-style-type: none"> – Time – Name – Class – Status 	Auxiliary sorting criteria: See Sorting order.1
Descending	<ul style="list-style-type: none"> – Passive – Active 	<ul style="list-style-type: none"> – Alarms sorted in ascending or descending order. What is the criteria applied for? – Ascending. – Descending.
Alarm history		
Reset		Deletes history list..
Sorting order 1	<ul style="list-style-type: none"> – Time – Name – Class – Status 	Main sorting criteria See Alarm list.
Sorting order 2	<ul style="list-style-type: none"> – Time – Name – Class – Status 	Auxiliary sort criteria: See Alarm list.
Descending	<ul style="list-style-type: none"> – Passive – Active 	See Alarm list.
Last entry		See Alarm list.

4. Commissioning Modbus

4.1 Commissioning internal Modbus RTU

Present units

The illustration shows the devices and connections involved in commissioning:



Connection

Proceed as follows to connect the Climatix controller to the Modbus bus:

Stage	Action
1	Switch OFF the power to the controller.
2	Connect Modbus bus cable to RS485 interface (pins A+ ,B-, Ref).
3	Switch ON the power to the controller.

Configuration via hand unit

Proceed as follows to configure the controller for internal Modbus RTU:

Stage	Action
1	Log onto HMI by entering the password 2000.
2	Select Main menu > System overview > Communication > Modbus >
3	Select Internal Modbus : Select the integrated Modbus-interface RS485 to be used as a slave. Warning! The integrated RS485 cannot be used as a slave if already used as a Master. This selection is blocked when a function requires a Master.
4	Select Internal slave address : Enter the correct Modbus slave address (1...247). Caution! This selection is true for the Modbus TCP as well.
5	Select Internal settings for RS485 >
6	Select the Baudrate : Enter the transmission rate for the Modbus (2400, 4800, 9600, 19200 or 38400). All the units connected in the chain must have the same setting.
7	Select Modbus stop bits : One or two stop bits All the units connected in the chain must have the same setting.
8	Select Parity : None, Even or Odd parity All the units connected in the chain must have the same setting.
9	Select Delay time : Delays the response time by X milliseconds.
-	Modbus timeout : For setting the access time if unit is used as a Master. The Modbus Master must have time to read data within this time, otherwise an alarm will trip. This has no significance if the unit is run as a slave.

10	Select Termination : The RS485 topology must always be terminated using wave resisters. They can be enabled or disabled here.
11	Select Restart : After you are done entering settings; restart the controller using this command.
Extra	Modbus comm is the alarm object and settings like alarm class etc. for Modbus related alarms can be changed here.

After restarting, the internal Modbus RTU will be configured and ready to be used.



Generally speaking, the controller must always be restarted using “Restart” or by switching the power supply to the unit off and on after making changes in order for the new settings to be valid.

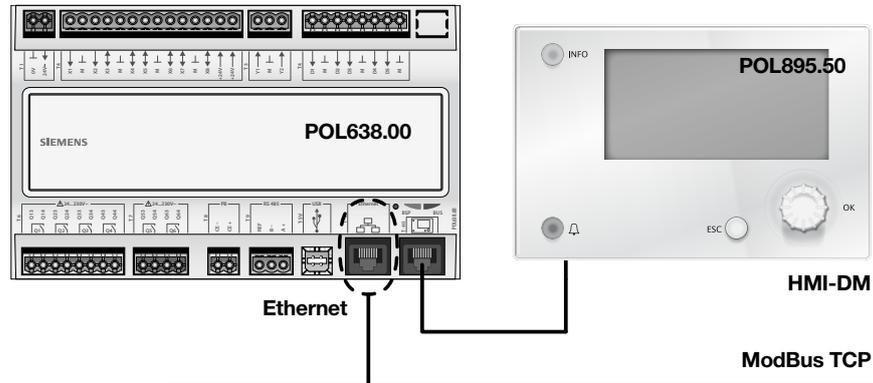


Settings other than those described above have nothing to do with a Modbus RTU operated as a slave and should therefore not be changed.

4.2 Commissioning internal Modbus TCP

Present units

The illustration shows the devices and connections involved in commissioning:



Connection

Connect Climatix controller to Ethernet (Modbus TCP) using an ordinary network cable.

Configuration via hand unit

Proceed as follows to configure the controller for internal Modbus TCP:

Stage	Action
1	Log onto HMI by entering the password 2000.
2	Select Main menu > System overview > Communication > Modbus >
-	Internal Modbus: Determine whether the integrated Modbus interface RS485 will be used as a Master or Slave. This will not affect the Modbus TCP.
3	Select Internal slave address: Enter the correct Modbus slave address (1...247). Warning! This also applies to the RTU.
4	Select Internal settings for TCP/IP > Caution! Settings for TCP/IP can also be viewed - and changed here: Main menu > System overview > Communication > TCP/IP >
-	Make sure that you change the TCP/IP setting if the controller is already connected to Ethernet for some other purpose.
5	Select DHCP (normally Passive): Active, the DHCP server distributes addresses. Passive, the IP address is fixed.
6	Select Set IP: Enter the controller's IP address if the DHCP is set to Passive.
7	Select Set Mask: Enter the subnet-mask if the DHCP is set to Passive.
8	Select Set Gateway: Enter the controller's gateway address if the DHCP is set to Passive.
9	Select Restart: Use this command for restarting the controller when you have finished.

After restarting, the internal Modbus TCP will be configured and ready to be used.



Generally speaking, the controller must always be restarted using "Restart" or by switching the power supply to the unit off and on after making changes in order for the new settings to be valid.



Settings other than those described above have nothing to do with a Modbus TCP operated as a slave and should therefore not be changed.

5. Save and restore commissioning/factory settings

After you have entered your settings and adjustments you should save the parameters and settings in both the internal memory of the Climatix controller and in the SD memory in order to be able to restore them after a possible loss of data.

5.1 Save

5.1.1 Commissioning settings

Parameter settings

Main menu > System overview > Save/Restore >

Select **Save comm.settg. > Execute**. Valid settings are saved in the internal memory of the main unit.

5.1.2 Settings to the SD memory

Parameter settings

Main menu > System overview > Save/Restore >

Insert an SD memory card in the memory card reader of the main unit.

Select **Save param.to SD > Execute**. Valid settings are saved in the SD.

Caution! Already existing parameters in the SD card will be written over with the new ones.

5.2 Restore

5.2.1 Commissioning settings

Parameter settings

Main menu > System overview > Save/Restore >

Select **Restore comm.settg. > Execute**. The latest saved settings will be restored from the internal memory in the main unit to active applicable settings.

5.2.2 Settings from the SD memory

Parameter settings

Main menu > Configuration > Konfiguration via > Download

RESTART - The unit will restart by itself when the option is changed from **HMI** to **Download** or vice versa. When the unit has started again, proceed to:

Main menu > System overview > Save/Restore >

Insert the SD memory card with the saved parameters in the memory card reader of the main unit. Select **Load param.from SD > ExecuteFull**. The saved settings on the SD card will be loaded to active valid settings in the controller. After this is done, a restart is required;

Main menu > System overview > Save/Restore > Restart.

5.2.3 To restore the factory settings

Parameter settings

If you need to reinstate the settings the unit was supplied with from the factory, you can choose to restore the factory settings as follows:

Main menu > System overview > Save/Restore >

Select **Restore factory settg. > Execute**. The saved factory settings in the internal memory will then be loaded to the active valid settings in the controller.

RESTART - The unit will restart itself after you have selected **Execute**.

After this automatic restart, restart the system one more time;

Main menu > System overview > Save/Restore > Restart.



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