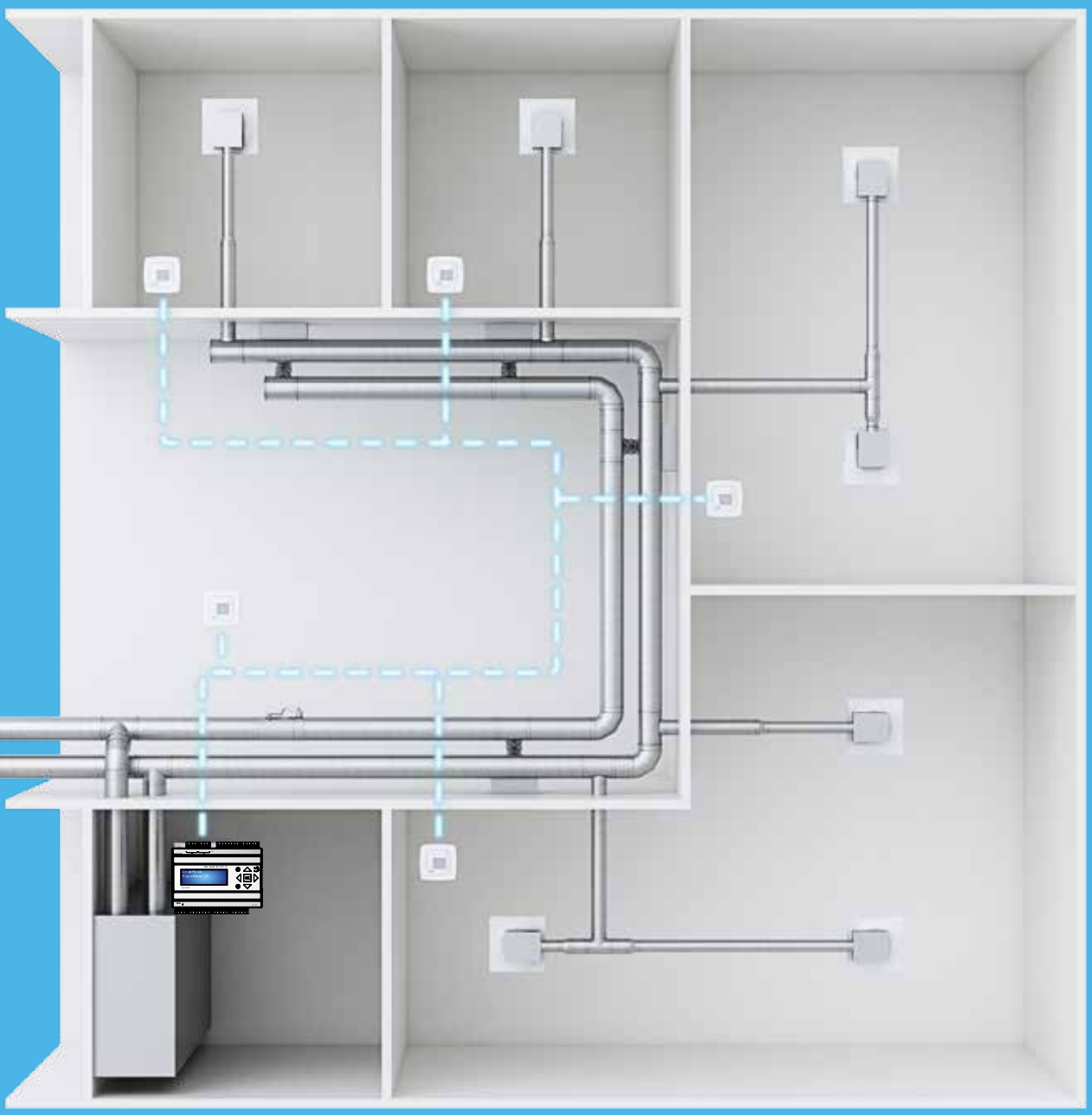


Lindab **Pascal**

Commissioning

Regula Master version 2.0
Regula Combi version 1.5

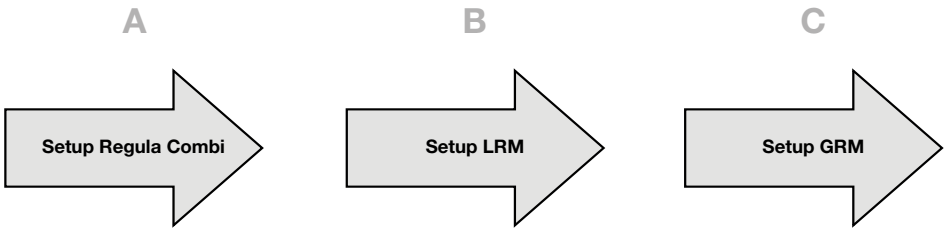
Table of content

Page

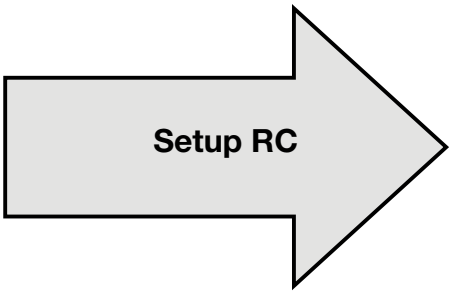
2018-06-19

Setup overview

The following describes the basic steps of setting up Pascal. This can be done either directly on Regula displays or via Pascal web configuration tool. Manual for Pascal web configuration can be found on www.lindqst.com.



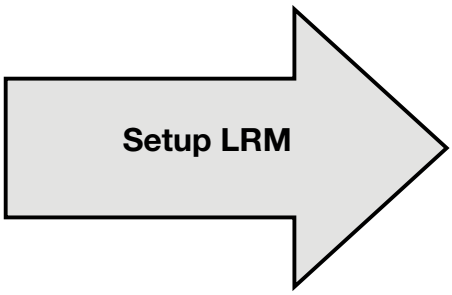
A: Setup of RC



1. Collect addresses of every SRC and ERC in the system. You can attach the stickers to a drawing or a list of the rooms.
   The address is named:
   PLA: ELA and has the format xxx:xxx (e.g. 156:201)
2. Change RC program to 6 (SRC), 7(ERC) or 8(Chillbeam)
3. Define number of dampers to be controlled by RC.
4. Define the size of the dampers.

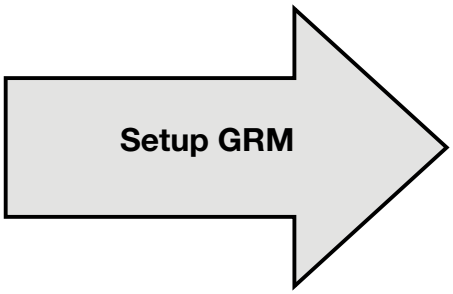
test

B: Setup LRM



1. Select Regula Master type: LRM.
2. Define number of SRC connected.
3. Define number of connected ULs
4. Assign ERC with PLA & ELA.
5. Assign all UL with PLA & ELA
6. Connect UL to ERC

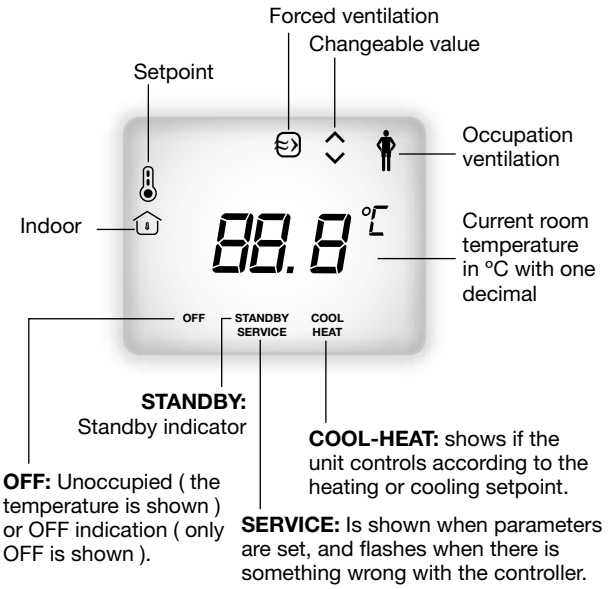
C: Setup GRM



1. Select Regula Master type: GRM.
2. Define number of LRM to be connected.
3. Connect LRMs to GRM by typing in LRM addresses.

Display buttons on Regula Combi

Display on Regula Combi



STANDBY: Standby indicator

COOL-HEAT: shows if the unit controls according to the heating or cooling setpoint.

OFF: Unoccupied (the temperature is shown) or OFF indication (only OFF is shown).

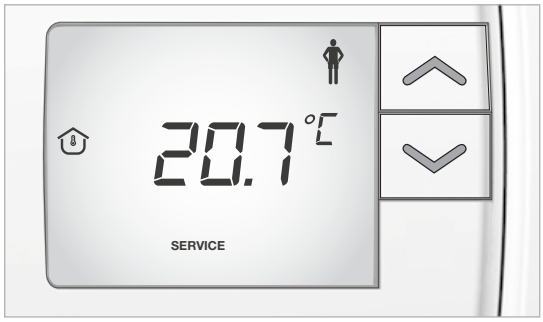
SERVICE: Is shown when parameters are set, and flashes when there is something wrong with the controller.

Regula Combi is shown in the picture to the left. There are four buttons on the RC, (the one in the bottom with no indication is not used).
In the top, there is a ”occupancy” button, and below it there are ”^”(increase) and ”v” (decrease) buttons.

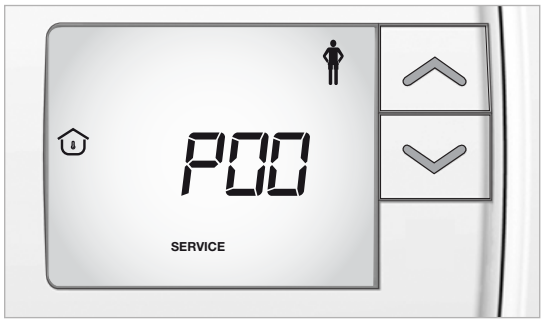
Configuration of Regula Combi is done in the ”service” menu.

To enter the service menu :

PUSH SIMULTANOUSLY ”^” and ”v” buttons and hold them down in for 5 seconds *until a ”service” indication appears in the display.*



Then ***PUSH ”^” button TWICE*** *which leads you to the parametermenu (servicemenu). The Display shows ”P00”.*



To scroll through parameters:

PUSH ”^” and ”v” buttons.

To see the actual value of the parameter:

PUSH ”occupancy” button,

and to scroll through possible values of the actual parameter:

PUSH ”^” and ”v” buttons.

PUSH the ”occupancy” button ONCE MORE *to exit the parameter.*

NB ! (Be careful with this. ”Occupancy” button saves the value of the parameter which is latest shown in the display). To achieve the original value, i.e. the value before change, press the “^ “ and “v “ button at the same time.

Setup of Supply Regula Combi

SRC, Supply Regula Combi , is configured by entering the parameter menu, as described above in the ”Display buttons on Regula Combi” segment.

Following parameters have to be set:

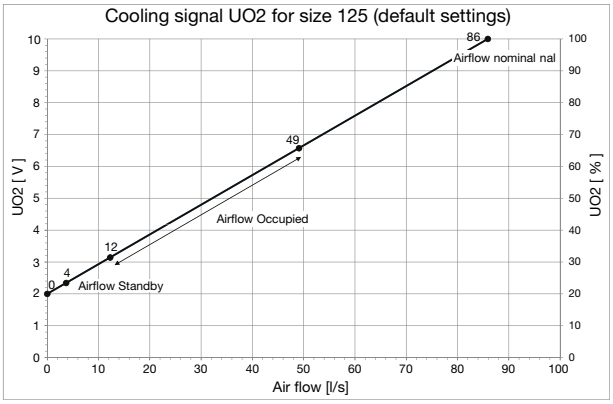
- Set Parameter ”P00” to value ”6”, to select program 6 (Pascal VAV Supply (SRC)).
- In parameter ”P138”, type in number of dampers controlled by the actual SRC.
  Dampers must have same size
- In parameter ”P139”, type in size of the damper in term of an index number from table 1.

Editing default (table) airflow values

- Parameter 140 is representing AirflowStandby
- Parameter 141 is representing AirflowMinOcc
- Parameter 142 is representing AirflowMaxOcc
- Parameter 143 is representing AirflowNominal

NOTE !

(AirflowNominal should NOT be changed manually).



Formula for the cooling signal:

UO2 (V) = (10V – 2V) / (AirflowNominal) * Air flow + 2V

Table 1: Default values for supply volume flow damper

Product	System	Size of damper	Size	Airflow Standby MBBV (0,4m/s; 2,46 V) VRU (0,7m/s; 2,80V)	Airflow MinOcc (1m/s; 3,14 V)	Airflow MaxOcc (4m/s; 6,57V)	Airflow Nominal (7m/s,10V)
Other	Supply / Extract	0	Unknown	0,01	0,01	0,01	0,01
MBBV-S-125 / DBV-125	Supply	3	125	5	12	49	86
MBBV-S-160	Supply	4	160	8	20	80	141
MBBV-S-200	Supply	5	200	13	31	126	220
MBBV-S-250	Supply	6	250	20	49	196	344
MBBV-S-315	Supply	7	315	31	78	312	546
VRU-100	Supply / Extract	22	100	5	8	31	55
VRU-125	Supply / Extract	23	125	9	12	49	86
VRU-160	Supply / Extract	24	160	14	20	80	141
VRU-200	Supply / Extract	25	200	22	31	126	220
VRU-250	Supply / Extract	26	250	34	49	196	344
VRU-315	Supply / Extract	27	315	55	78	312	546
VRU-400	Supply / Extract	28	400	88	126	503	880
VRU-500	Supply / Extract	29	500	137	196	785	1374
VRU-630	Supply / Extract	30	630	218	312	1247	2182

Control of Supply Regula Combi (SRC) from Local/Single Regula Master (LRM/ SRM)

For optimal control of states (modes) of SRC centrally from LRM (and with Exoline/Modbus commands via GRM/SRM) the SRC has to be configured properly regarding the preset mode and the DI1 (digital input for presence sensor).

Default setup in Regula Combi is without a presence sensor connected. If there is a presence sensor (NO) connected there are some parameters to be set.

No presence sensor (default):

- Parameter ”P60”
  is set to value ”0”, Normally Open.
- Parameter ”P45”
  is set to value ”3”, Occupied.
- Parameter ”P13”
  is set to value ”0”, disconnect timer
  with occupancy/unoccupancy: 0 min.
- Parameter ”P14”
  is set to value ”0”,
  Delay time for occupancy: 0 min.

Presence sensor:

- Set Parameter ”P60”
  to value ”0”, Normally Open.
- Set Parameter ”P45”
  to value ”2”, preset mode: Standby
- Set Parameter ”P13”
  to the desired delay time, Disconnect timer
  with occupancy / unoccupancy, e.g. 30 min.
- Set Parameter ”P14”
  to the desired switch on delay for occupancy,
  e.g. 1 min.
- On Regula master (LRM / SRM),
  under Supply Regula Combi ->
  SRCxx (SRC number in list) ->
  Set remote state to “ No remote control “

Setup of Extract Regula Combi

ERC, Extract Regula Combi, is configured by entering the parameter menu, as described in ”Display buttons on Regula Combi” segment.

The following parameters have to be set:

- Set Parameter ”P00”, to value ”7”,
  to select program 7 (Pascal VAV Extract (ERC)).
- In parameter ”P138”,
  type in number of dampers controlled by the actual ERC.

  The calculated Extract airflow will be divided if more than 1 damper is set.
  Dampers must have same size.
- In parameter ”P139”,
  type in size of the damper in term of an indication number from table “default values for dampers” shown below.

Table 1.b: Default values for Extract volume flow dampers

Product	System	Size of damper	Size	Airflow Standby MBBV (0,4m/s; 2,46 V) VRU (0,7m/s; 2,80V)	Airflow MinOcc (1m/s; 3,14 V)	Airflow MaxOcc (4m/s; 6,57V)	Airflow Nominal (7m/s,10V)
Other	Supply / Extract	0	Unknown	0,01	0,01	0,01	0,01
VRU-100	Supply / Extract	22	100	5	8	31	55
VRU-125	Supply / Extract	23	125	9	12	49	86
VRU-160	Supply / Extract	24	160	14	20	80	141
VRU-200	Supply / Extract	25	200	22	31	126	220
VRU-250	Supply / Extract	26	250	34	49	196	344
VRU-315	Supply / Extract	27	315	55	78	312	546
VRU-400	Supply / Extract	28	400	88	126	503	880
VRU-500	Supply / Extract	29	500	137	196	785	1374
VRU-630	Supply / Extract	30	630	218	312	1247	2182

Ultralink setup

UL-RC , Ultralink Regula Combi, is configured by entering the parameters menu, as described in ”Display buttonson Regula Combi” segment.

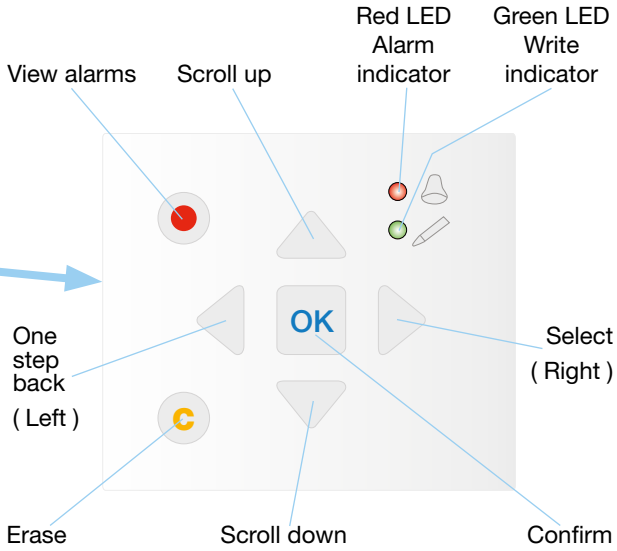
- Set parameter “P00” to value 6
- In parameter “P139” type in size of the damper in term of an indication number from table “default values for Ultralink” shown below.
- Set parameter “P42” to value 9
- Set parameter “P81” to value 10
- Set parameter “P83” to the size dependent value of Airflow Nominal according to the table below

Product	System	Size of damper	Size	Airflow Standby MBBV (0,4m/s; 2,46 V) VRU (0,7m/s; 2,80V)	Airflow MinOcc (1m/s; 3,14 V)	Airflow MaxOcc (4m/s; 6,57V)	Airflow Nominal (7m/s,10V)
Other	Supply / Extract	0	Unknown	0,01	0,01	0,01	0,01
FTMU/VRU-100	Supply / Extract	22	100	5	8	31	55
FTMU/VRU-125	Supply / Extract	23	125	9	12	49	86
FTMU/VRU-160	Supply / Extract	24	160	14	20	80	141
FTMU/VRU-200	Supply / Extract	25	200	22	31	126	220
FTMU/VRU-250	Supply / Extract	26	250	34	49	196	344
FTMU/VRU-315	Supply / Extract	27	315	55	78	312	546

For more information about ultralink see Ultralink documentation

Display buttons on Regula Master

Display buttons:



Display:

Lindab Pascal
RegulaMaster
Local / Global / Single RM
LRM / GRM / SRM

Display buttons are shown in the picture above:

“↑”, ”↓”, ”←”, ”→”, “ OK ”, “ C “ and “red” .

In the menu, use “↑” and ”↓” to scroll up and down.

To select, use ”→” button.

To go one step back, use ”←” button.

Edit, by pressing ”OK” button, and then use “↑”and ”↓” .

Use ”→” if a multi digit number is to be typed in and end with ”OK” (and ”←” to apply the change).

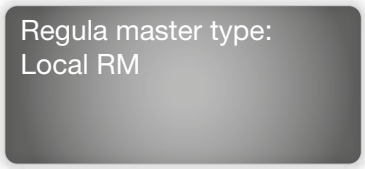
NOTE !

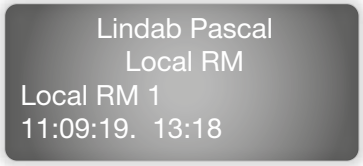
Regula Master is only registring changes if there is a change in the display, i.e. there will be no changes if the “Ok” button is pressed twice.

Setup of Local / Single RM Pascal

Setup of Local / Single Regula Master (LRM / SRM)

1. Select ***Local Regula Master*** in Regula master type.

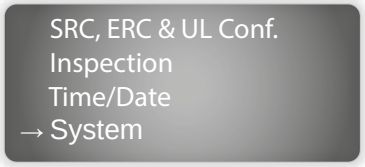




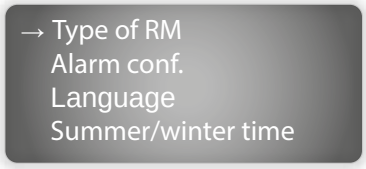
(Press right to see the IP address)

2. If Regula Master already is set to another mode, this can be changed as described in the following. ***Press*** "↓" ***button*** and then select ***Configuration***.

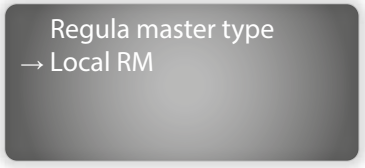
3. Select ***System***.



4. Select ***Type of RM***.

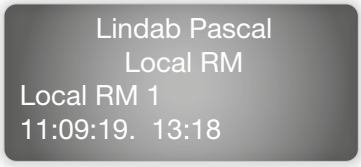


5. ***Press OK***, and then with "↑" and "↓" buttons select ***LRM / SRM***, and confirm with ***OK*** and "←".

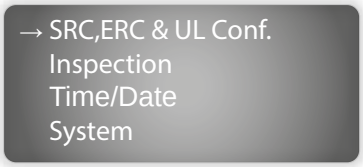


Define (create) number of Supply Regula Combi (SRC) and type in corresponding addresses

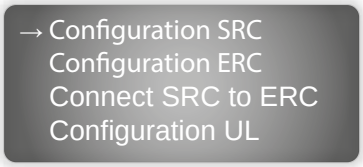
Push "↓" button to enter the main menu of Local Regula Master, then select ***Configuration.***



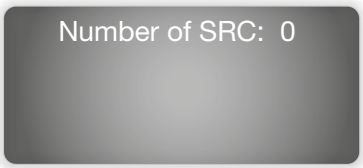
6. Under Configuration select ***SRC,ERC & UL Configuration.***

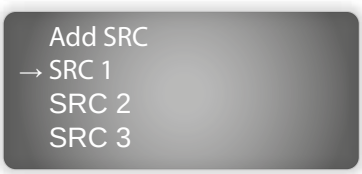


7. And select ***Configuration SRC***, to configure Supply Regula Combi.



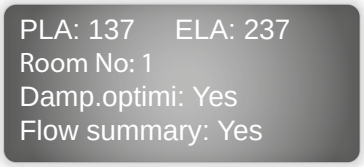
8. Here it is possible to add up to 26 SRCs by selecting ***Add SRC***, (or edit an already defined SRC by selecting it). To delete one or more already created SRC/SRCs, select ***Add SRC*** and type in a less number of SRCs, which will delete the last SRC/SRCs in the list.





9. Select created SRC, and ***type in the PLA and ELA address and corresponding Room number.*** When damper optimization is YES the SRC send it´s damper postion to GRM for fan optimization.

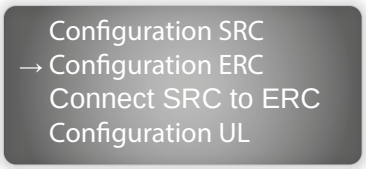
If flow summary is YES the flow from the SRC is summeraized to the total flow of the LRM.



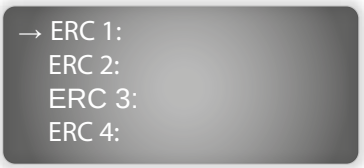
10. Repeat this for all created SRCs.

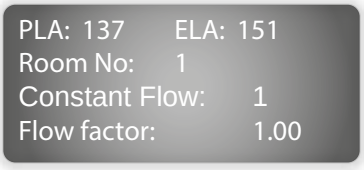
Define Extract Regula Combi (ERC) by typing in the corresponding addresses

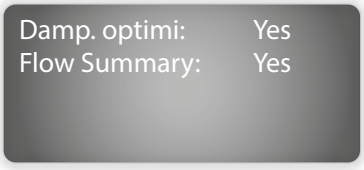
11. Use "←" to go back two steps, and select ***Configuration ERC*** to configure Extract Regula Combi



12. ERCs are added (created) by typing in ***PLA og ELA*** addresses to respectively ERC1 - ERC16
ERCs without a valid PLA and ELA address are seen by the system as inactive.
Here you also add constant flow and/or flow factor.





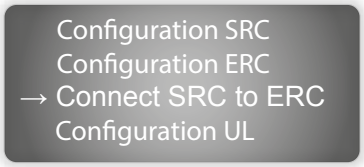


Definition:

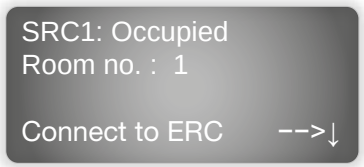
Flow factor = Extract flow / Supply flow:
For balanced flow, flow factor = 1.00
Constant flow, positive value = more Extract

Connect Supply Regula Combi (SRC) to Extract Regula Combi (ERC)

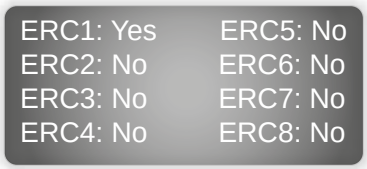
13. Again use "←" to go back, and then select ***Connect SRC to ERC*** to define the ERC which handles the extract for the selected SRC.



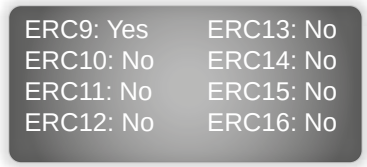
14. To connect an SRC to one or more ERCs, enter a given SRC and select "***yes***" or "***no***" whether the SRC has to affect the respective ERC or not.



Press the right button

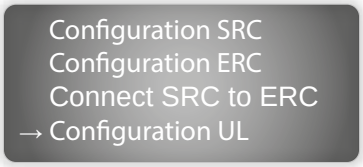


Press the down button

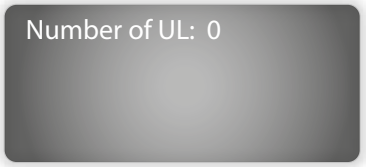


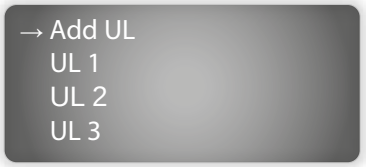
Configuration UL and connect UL to ERC

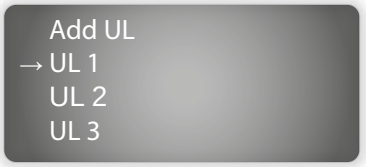
15. Use "←"to go back to the menu and select ***Configuration UL*** to configure Ultralink.



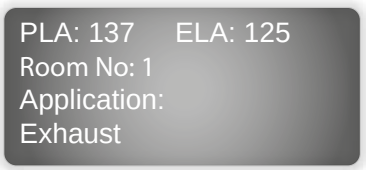
16. Here it is possible to add up to 8 ULs by selecting ***Add UL***, (or edit an already defined UL by selecting it). To delete one or more already created UL/ULs, select ***Add UL*** and type in a less number of ULs, which will delete the last UL/ULs in the list.





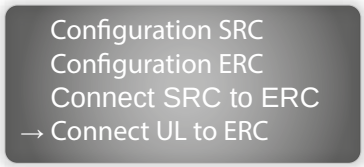


17. Select created UL and type in PLA and ELA address, corresponding room number and application. (Supply or Extract)

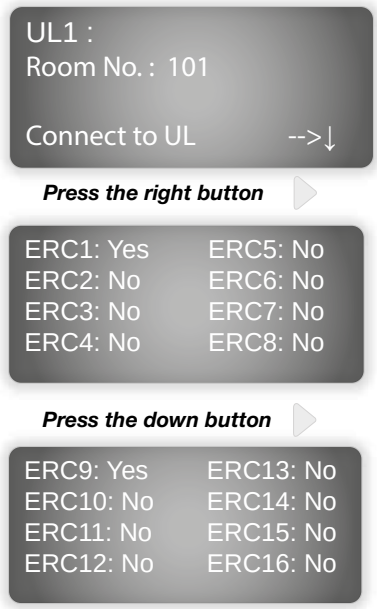


18. Repeat this for all created ULs

19. Connect Ultralink (UL) to Extract Regula combi (ERC)



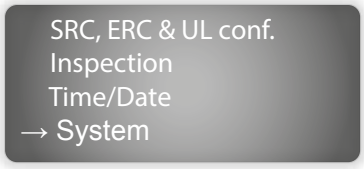
20. To connect an UL to one or more ERCs, ***enter a given UL*** and select "***yes***" or "***no***" whether the UL has to affect the respective ERC or not.



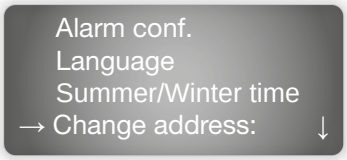
Assign LRM with a unique address

21. When all SRCs and ULs are connected to the respective ERCs, use "←"to go back to the menu and select ***Configuration.***

16. Select ***System***

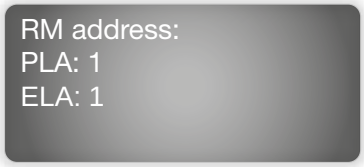


17. Use "↓", and then select ***Change Address,***



18. PLA and ELA are predefined for all new RM (254,30). Select a unique address for the LRM (hint; use 1:1 LRM1, 2:2 LRM2 etc). Even when you use TCP between the masters the unique PLA:ELA address must be set.

NOTE ! *There can't be two or more RMs with the same PLA:ELA in the same system.*

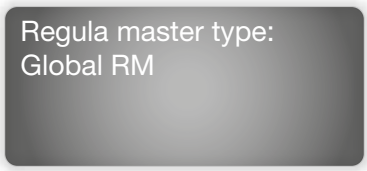


Now Local Regula Master is configured.

Setup of Global / Single RM Pascal

Setup of Global / Single Regula Master (GRM / SRM)

1. Select ***Global Regula Master*** in Regula Master type.

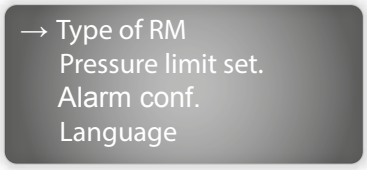


(Press right to see the IP address)

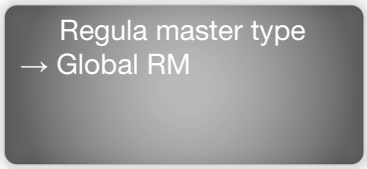
2. If Regula Master already is set to another mode, this can be changed as described in the following. Press "↓" button and then select ***Configuration***.

3. Select ***System***.

4. Select ***Type of RM***.



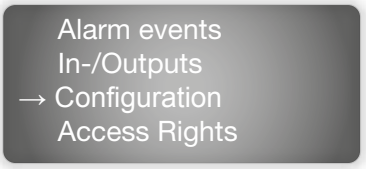
5. Press OK, and then with "↑" and "↓" buttons, select ***GRM / SRM***, and confirm with OK and "←".



Define (create) number of Local Regula Master (LRM) and type in corresponding addresses (Only GRM)

6. Use "↓" to enter the main menu for Global Regula Master.

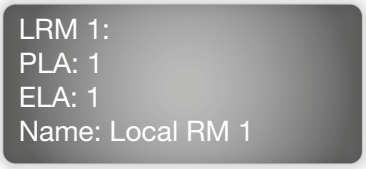
7. Select ***Configuration***, by scrolling down with "↓".



8. Select ***Configuration LRM***, to add (create) or edit Local Regula Masters in the system.

9. Select ***Add LRM*** to add a LRM to the system.

10. Type in PLA, ELA address and name for the added LRM.

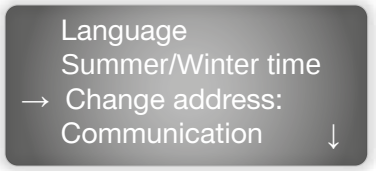


11. When this is done, the LRM is created and connected to the system. Repeat this for all LRM in the system and then use "←" to return back to the menu.

Assign GRM/SRM with a unique address

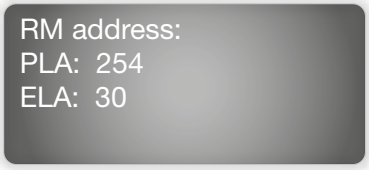
12. Select ***system***.

13. Then scroll down with "↓" and select ***Change address***.



14. Make sure that the GRM/SRM has a unique address: ***PLA and ELA***. To avoid possible conflicts with ExoScada BMS, PLA:ELA addresses above 240:30 should not be used***.***

NOTE ! *The address must not be the same as one of the LRMs*



After this, the GRM/SRM is configured and ready.

Communication settings GRM/SRM/LRM

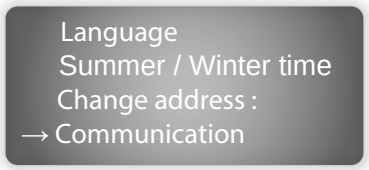
To be able to communicate between the Regula masters and to BMS it´s necessary to make some setting s in Regula master, when the settings is done you can select Modbus,BACnet or EXOline via BMS and the the master automatically changes.

1. When TCP cable is connected to RM the RM will get a unique TCP address, the address is visible in the RM display. Go to the top of the display and press ”→”,

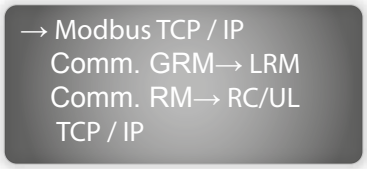
2. Commuication between GRM and LRM and set Modbus address on GRM
Go to configuration menu.

3. The select ***System***

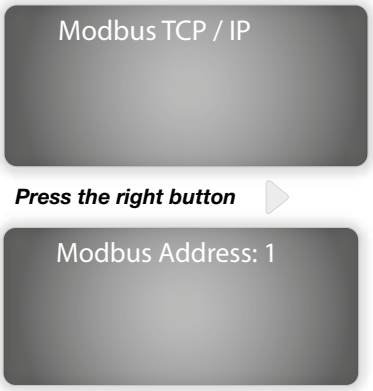
4. Then select ***Communication (Password 1111)***



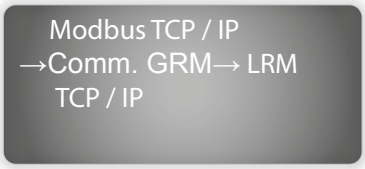
5. Set Modbus address to GRM/SRM/LRM (for BMS) right arrow at Modbus TCP/IP



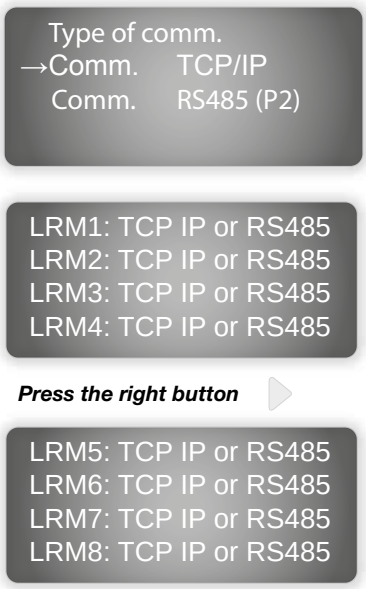
6. Select ***Modbus address default is 1***



7. Press ***left arrow*** to come back to this menu, and ***right arrow*** on Type of comm.

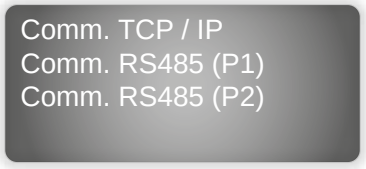


8. Select ***TCP or RS485***. Note! If selecting RS485 it´s not possible to communicate with BMS

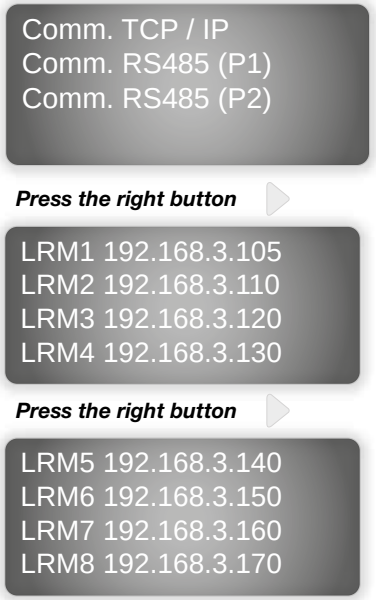


9. Arrow left to come to this and right arrow at Comm. TCP/IP

Press the right button

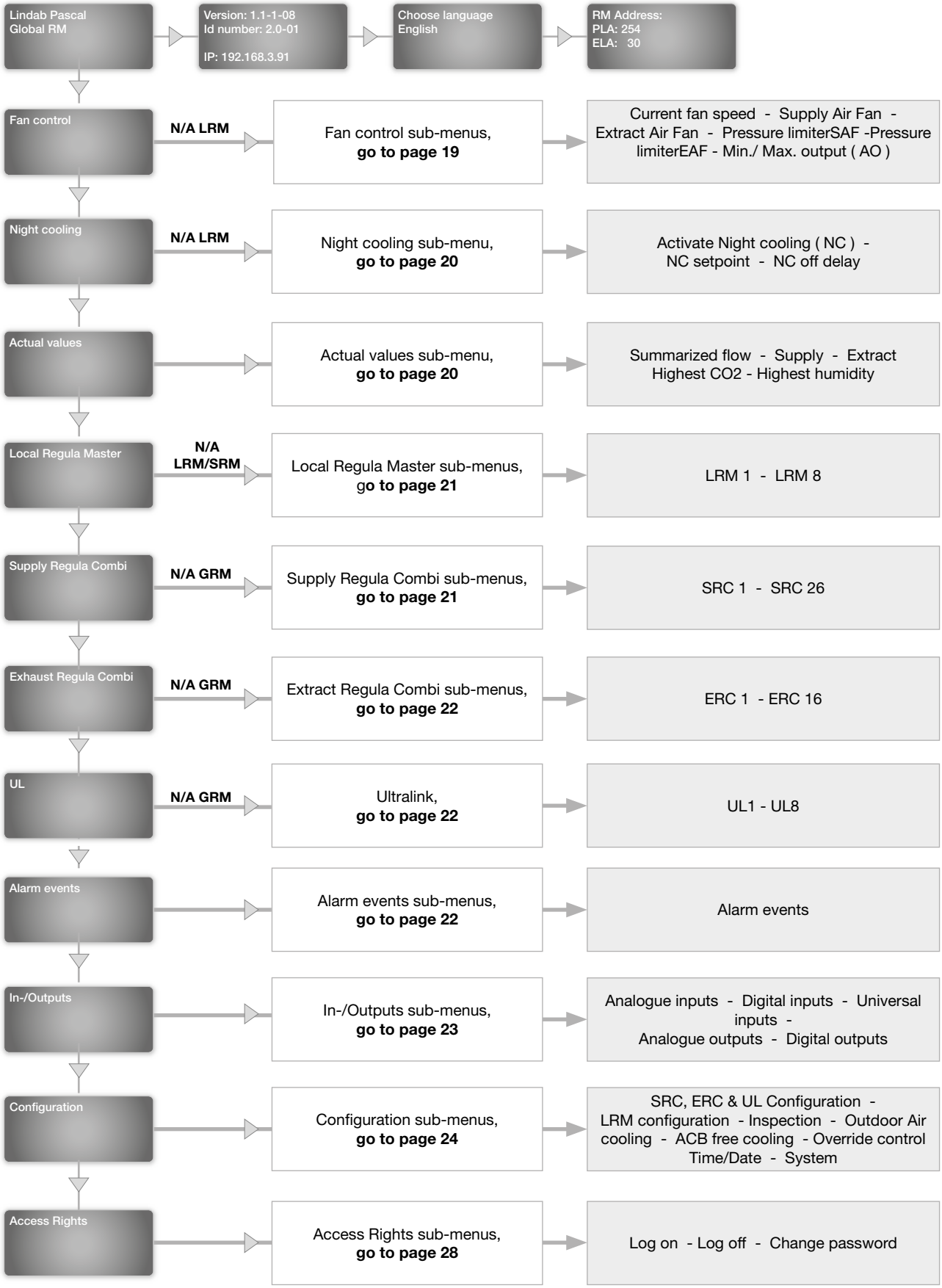


10. Write the TCP IP addresses for all connected LRMs

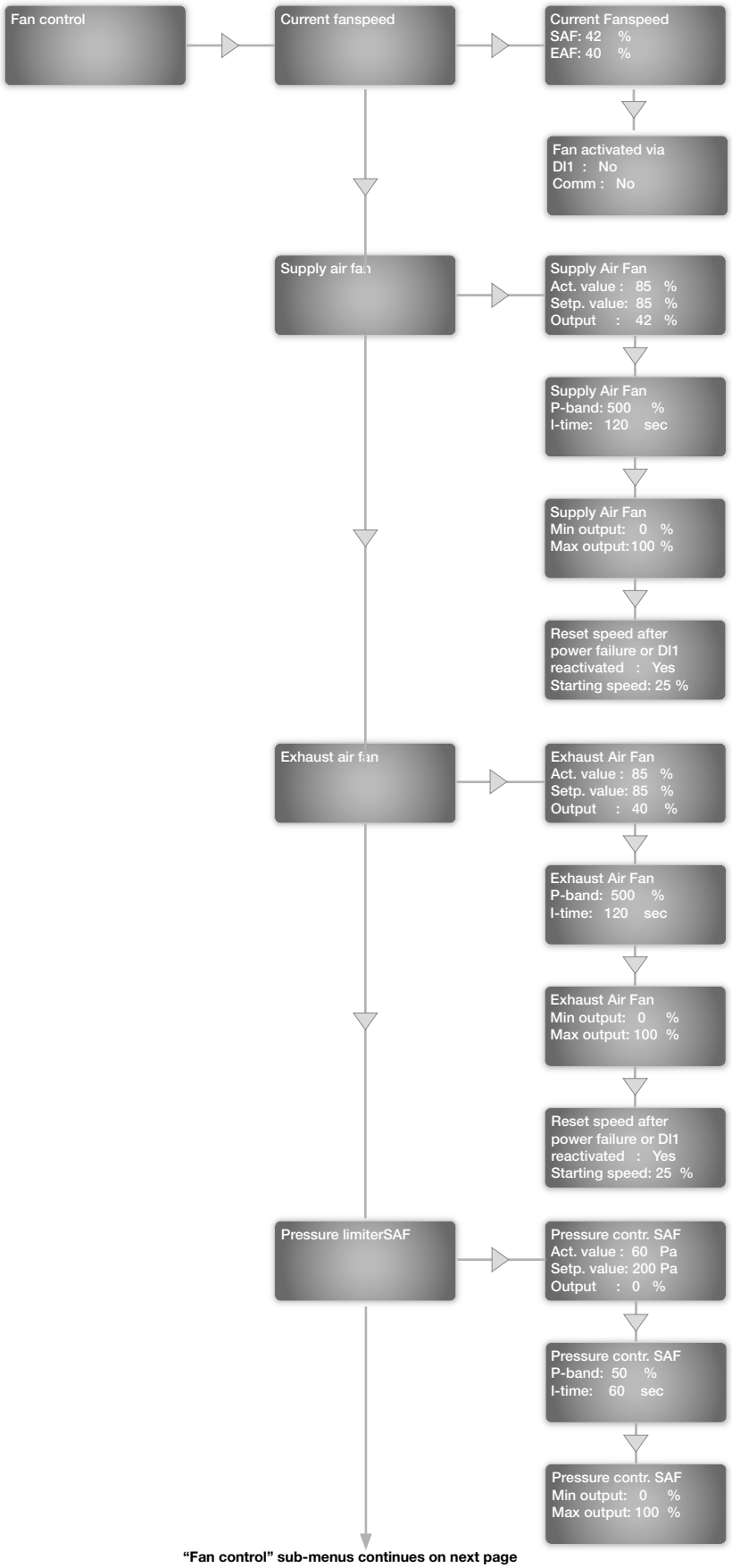


RM Display overview Pascal

Regula Master (RM) display overview of main menus



Fan control display and sub-menus **(Not available in LRM)**



The resulting output to the fan.

Actual value: The most open damper in percent.

Set point: Set point value for the most open damper default is 85% but is changeable.

Output: Output signal to supply fan from damper position.

P-band and *I-time* for the supply fan, both are changeable. For faster immediate respons lower the P-band, for slower immediate respons higher the P-band. The I-time should be kept around 120s, taking the damper travel time into consideration.

Restriction of *minimum* and *maximum output signal* that comes from damper position and regulates the supply fan.

Yes: The selected starting speed is used.

No: The fan starts at the same percent as it had before it was shutoff.

Starting speed: Select starting speed in percent after power failure or DI1 reactivated.

Actual value: The most open damper in percent.

Set point: Set point value for the most open damper default is 85%, but is changeable.

Output: Output signal to Extract fan from damper position.

P-band and *I-time* for the Extract fan, both are changeable. For faster immediate respons lower the P-band, for slower immediate respons higher the P-band. The I-time should be kept around 120s, taking the damper travel time into consideration.

Restriction of *minimum* and *maximum output signal* that comes from damper position and regulates the Extract fan.

Yes: The selected starting speed is used.

No: The fan starts at the same percent as it had before it was shutoff.

Starting speed: Select starting speed in percent after power failure or DI1 reactivated.

Pressure control SAF (supply air fan).

Actual value: Actual pressure in Pa.

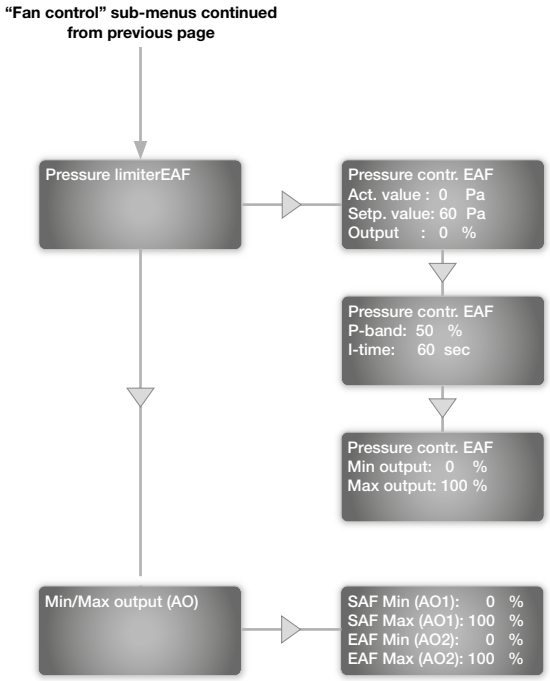
Setpoint value: Pressure set point value.
Login display to change setpoint value. Password 1111

P-band and *I-time* for pressure regulation.

Restriction of *minimum* and *maximum output signal* that comes from the pressure controller and regulates the supply fan, changeable.

“Fan control” sub-menus continues on next page

RM Display sub-menus Pascal



Pressure control EAF (Extract air fan).

Actual value: Actual pressure in Pa.

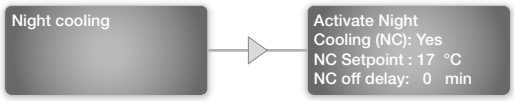
Setpoint value: Pressure set point value.
Login display to change setpoint value. Password 1111

P-band and *I-time* for pressure regulation.

Restriction of *minimum* and *maximum output signal* that comes from the pressure controller and regulates the extract fan, both are changeable.

Restriction of *minimum* and *maximum output signals* to the fans.

Night cooling display and sub-menu **(Not available in LRM)**

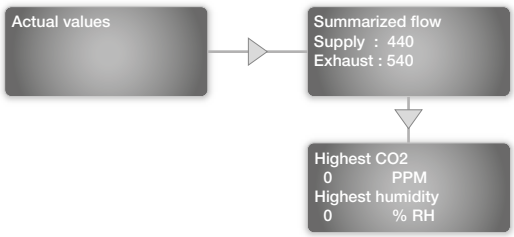


Activate night cooling: Enables night cooling function

NC set point: Night cooling set point, this unoccupied cooling set point is sent to all connected SRCs (default value is 17°C) when night cooling is activated by the AHU controller.

NC off delay: Night cooling continues after signal for NC has stopped.

Actual values display and sub-menu

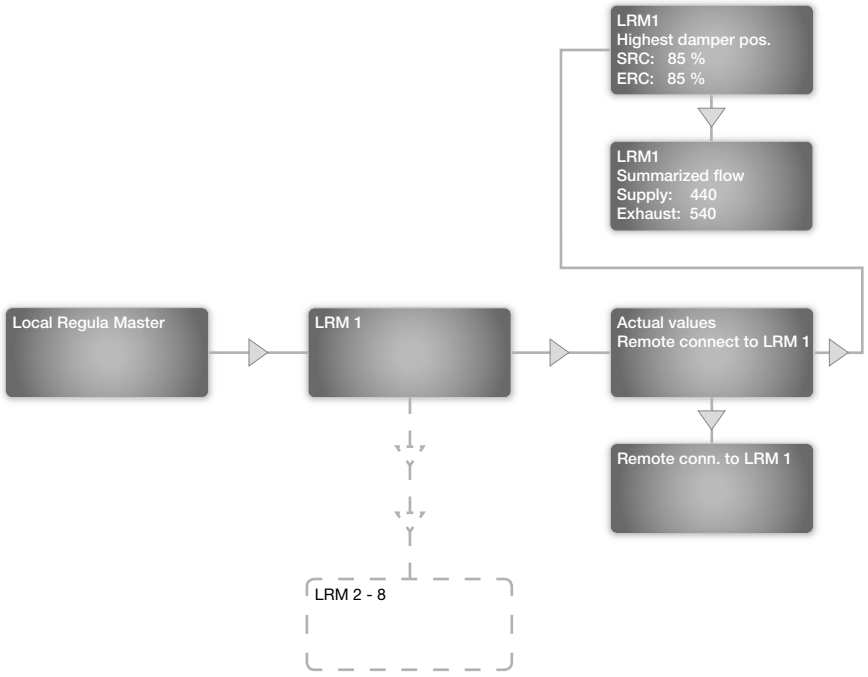


Summarized flow for supply and Extract fans for all LRMs

Highest CO_2 value for all LRMcs

RM Display sub-menus Pascal

Local Regula Master (LRM) display and sub-menus **(Not available in LRM / SRM)**

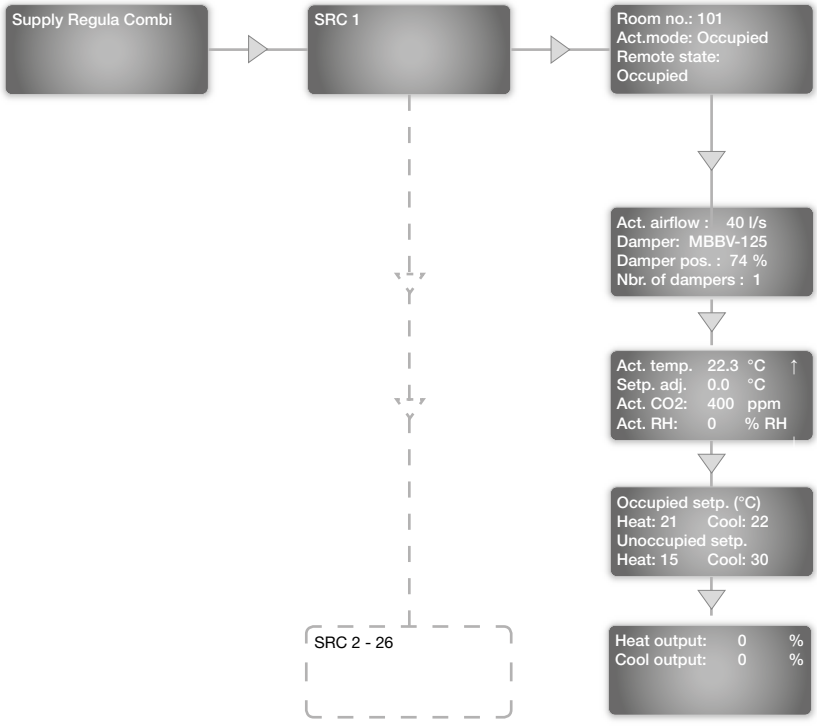


Highest damper position for SRC and ERC that are connected to the LRM.

Summarized flow in LRM, supply and extract.

Remote control to LRM1-8: Enables remote connection to the chosen LRM from the GRM. All functions that are possible in LRM are also possible here.

Supply Regula Combi (SRC) display and sub-menus **(Not available in GRM)**



Room number

Actual mode: SRCs actual mode.

Remote state = By changing this mode you are able to change mode on the SRC from LRM.

Mode will only change if there is a change in the display. To access *Bypass* from *Unoccupied / Off* and vice versa, it is necessary to use *Occupied* as a temporary mode.

Actual air flow = Actual airflow in the SRC. Flows from all connected diffusers are added together.

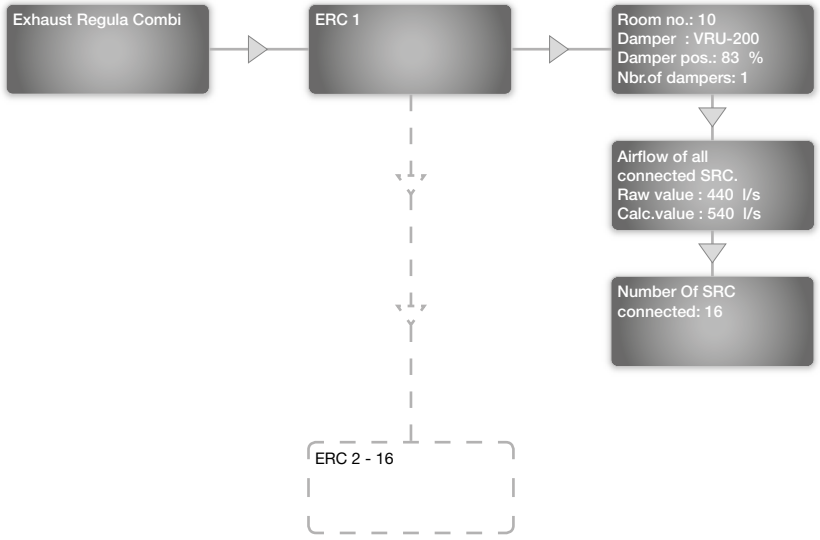
Damper pos. = Actual damper position.

Number of dampers: Number of dampers.

Occupied and *Unoccupied set points*.

Actual values from SRC can´t be read but they are changeable.

Extract Regula Combi (ERC) display and sub-menus **(Not available in GRM)**



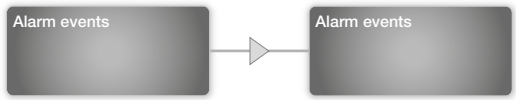
Raw value: Only flow from all connected ERCs .

Calculated flow:
Connected SRCs + constant flow+ flow factor.

Ultralink

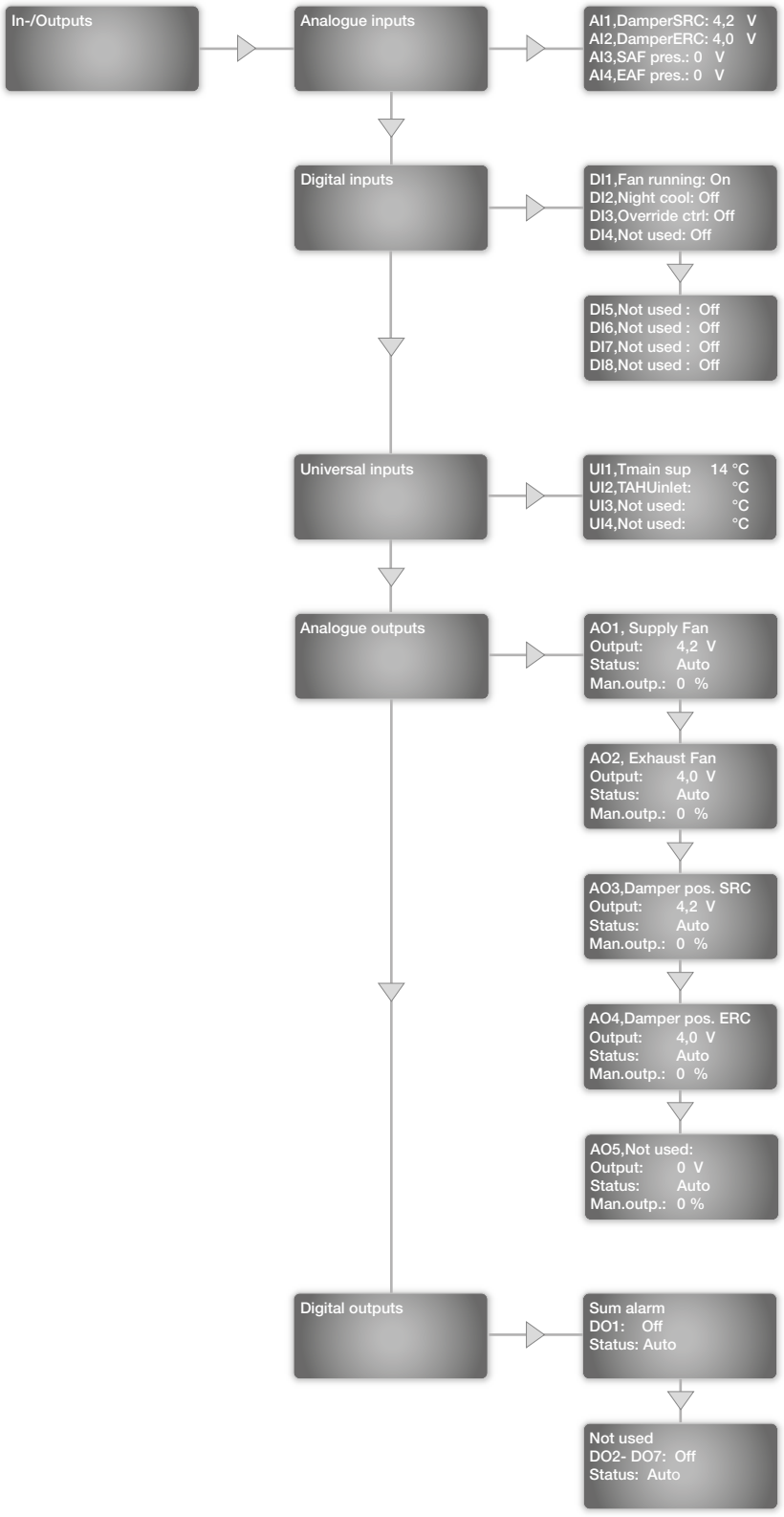
Ultralink events: Ultralink list, possible to see the actual airflow.

Alarm events display and sub-menu



Alarm events: Alarm list. Alarms are shown, possible to acknowledge, block or view the alarms.

In-/Outputs display and sub-menus



Cascade damper position signals, supply (*AI1*) and extract (*AI2*).

The signal from pressure sensor to the fan supply (*AI3*) and extract (*AI4*).

Fan signal from AHU controller
Night cooling signal from AHU controller.
DI3 - DI4 - NOT USED

NOT USED

UI1: Tmain supply, is used for ACB freecooling and Outdoor air cooling
UI2:T AHU inlet (Airhandling unit inlet temperature) is used for ACB free cooling
UI3: Not used
UI4: Not used

Output = Output to the supply fan.

Status of the fan, manual/auto or off.

Man. output = Manual output, can be used if status is set to manual, the output signal to the fan is in % .

Output = Output to the supply fan

Status of the fan, manual/auto or off.

Man.output = Manual output, can be used if status is set to manual, the output signal to the fan is in % .

Maximum *supply damper position* to GRM, cascade output.

Maximum *extract damper position* to GRM, cascade output.

NOT USED

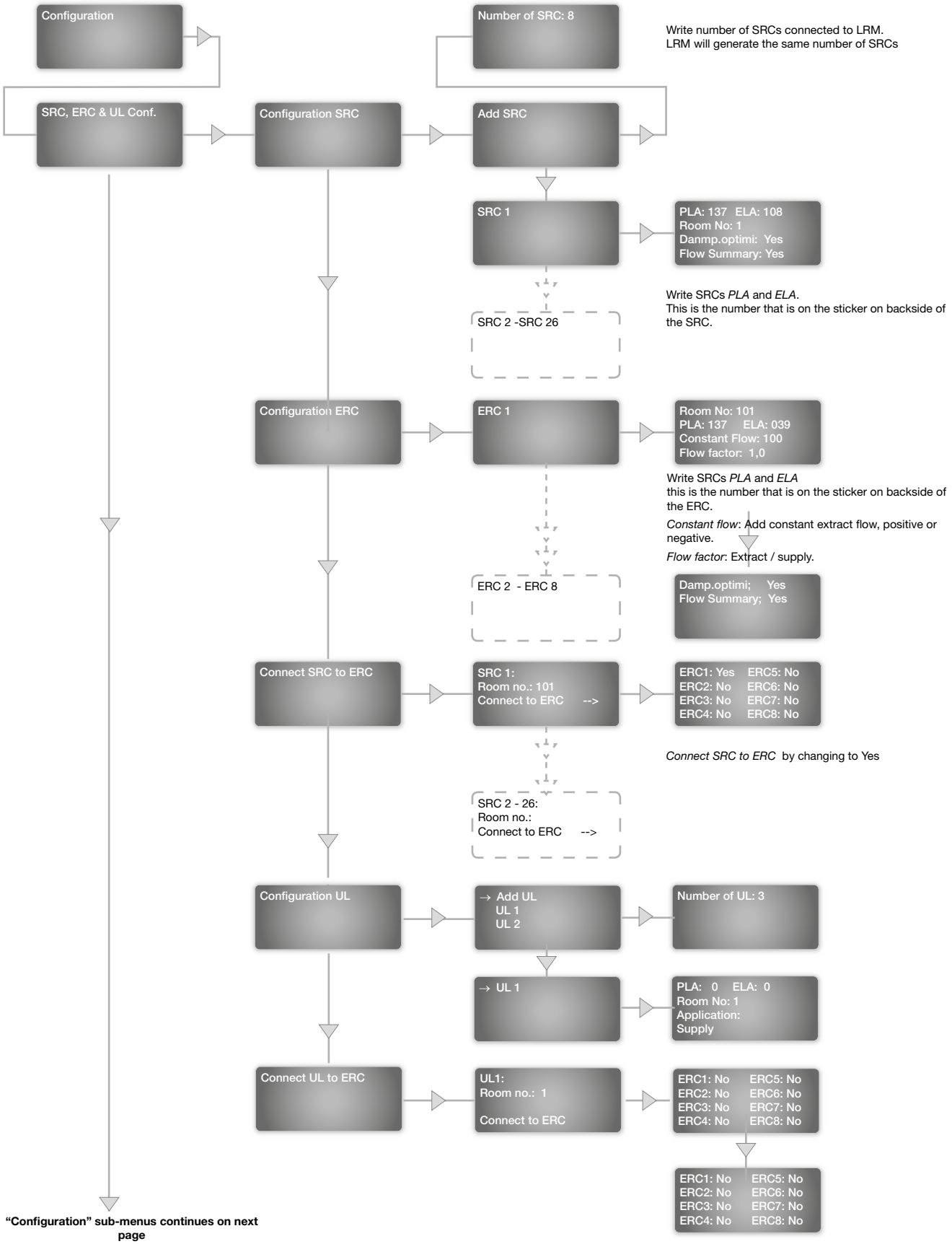
Sum.alarm: Digital output activated if there is any alarms.

Status: Yes/No or Auto

NOT USED

RM Display sub-menus Pascal

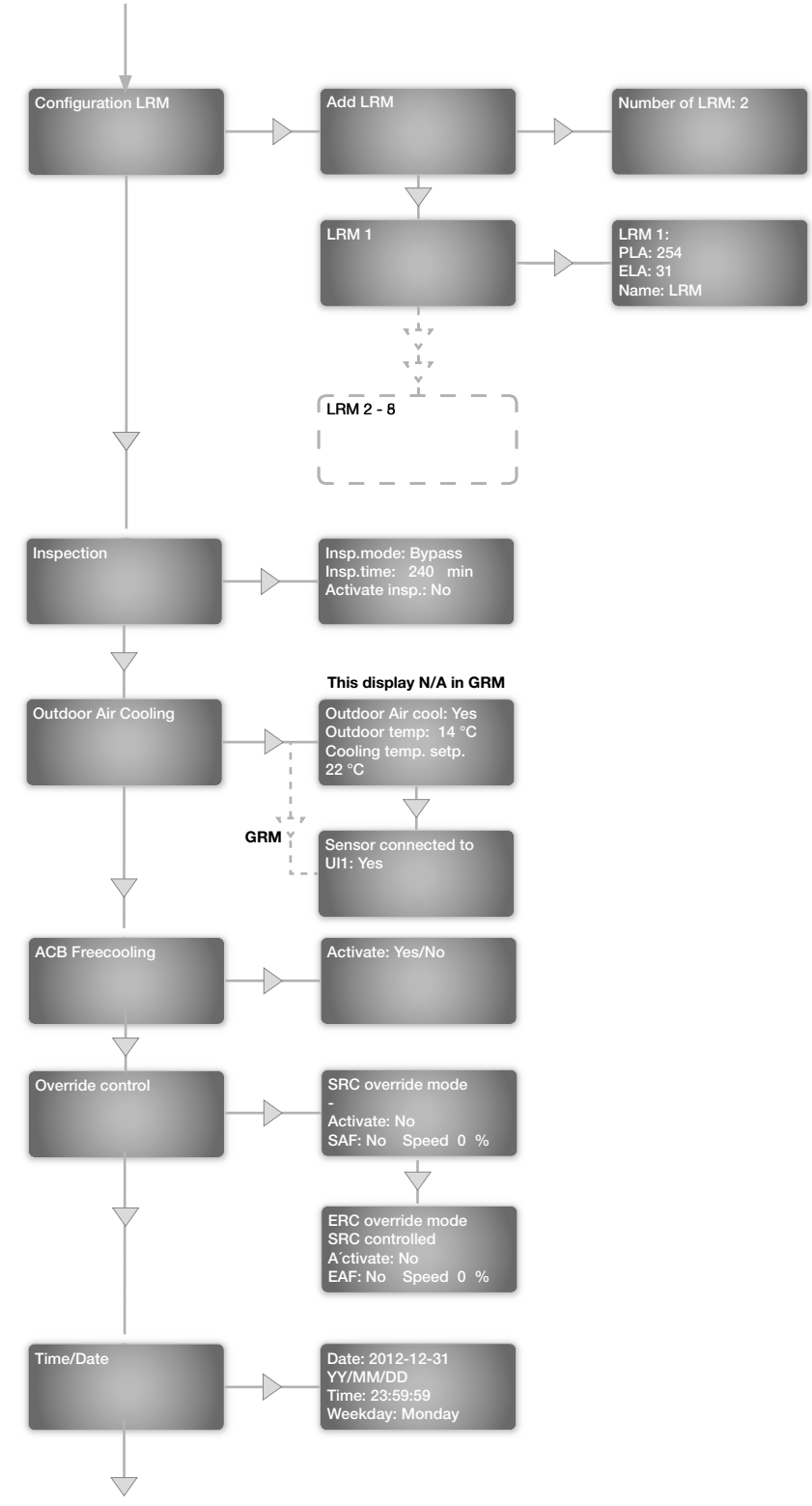
Configuration display and sub-menus



"Configuration" sub-menus continues on next page

RM Display sub-menus Pascal

Configuration display and sub-menus



Write the *number of LRMs* that are connected to GRM. GRM will generate the same number of LRMs.

Write the unique *PLA*/*ELA* address and *name of the LRM*.

Set all connected SRCs in a specific mode. (*Occupied*, *Off*, *Bypass*, *Standby* or *Unoccupied*).
If *inspection mode* isn´t deactivated it will go back to original mode after this time.

Activate inspection: Inspection starts or stops.

Outdoor Air cooling: Activate outdoor air function.

Outdoor temp: Actual value of temperature sensor.

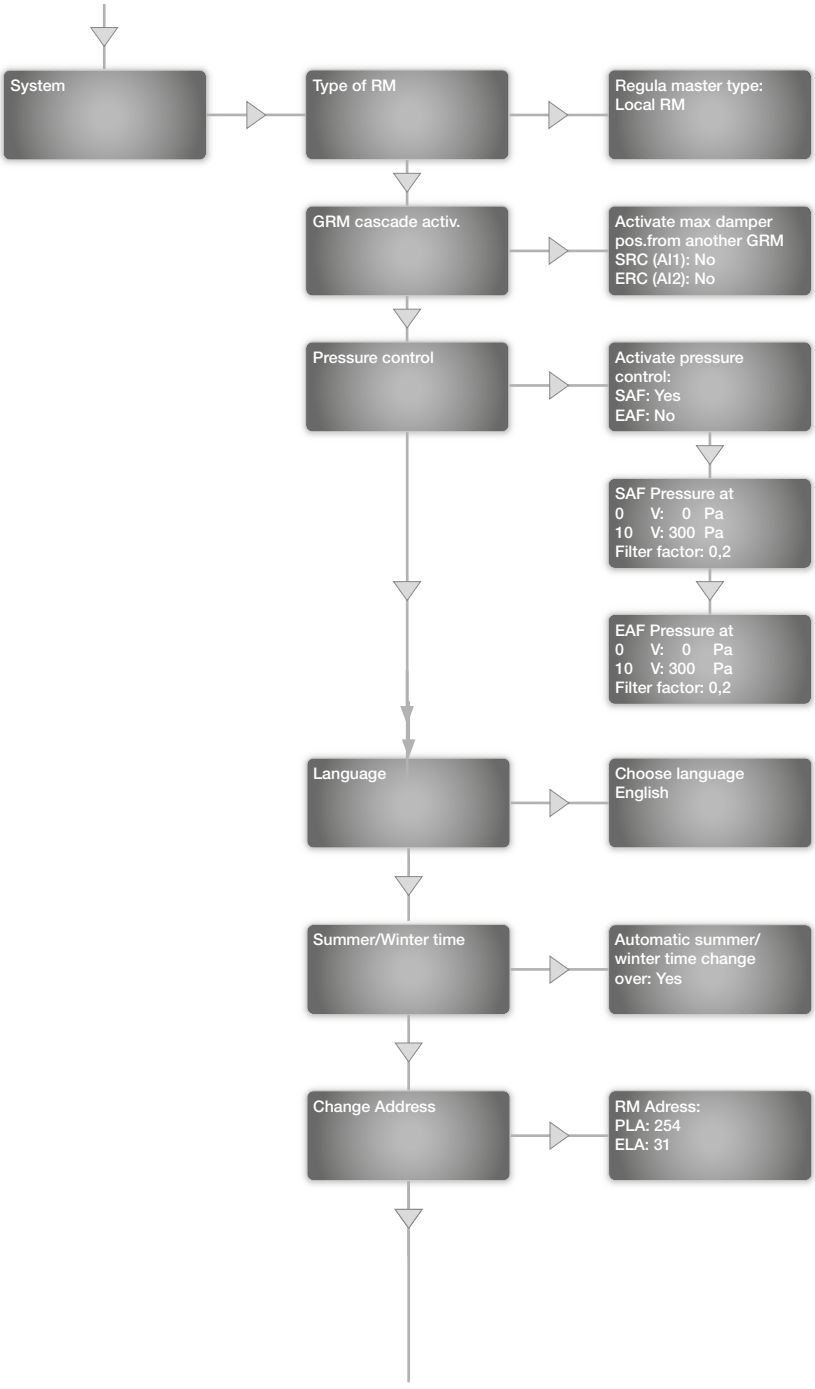
Cooling temp setp: Common basic cooling setpoint for all connected SRC.

Sensor connected to UI1: Sensor connected for outdoor temperature Yes/No

Sub-menus continues on next page

Configuration display and sub-menus

Sub-menus continued from previous page



Regula master type: Select which Regula master it should be.
Local (LRM) / Global (GRM) or single (SRM).

Get *max. damper position* from another GRM.

Activate pressure control for exhaust and/or supply.

Set the *pressure range* of the supply pressure sensor.
Filter factor: Pressure fluctuations in the system is damped with this factor.
Login display to change setpoint value. Password 1111

Set the *pressure range* of the exhaust pressure sensor.
Filter factor: Pressure fluctuations in the system is damped with this factor.
Login display to change setpoint value. Password 1111

Only english available

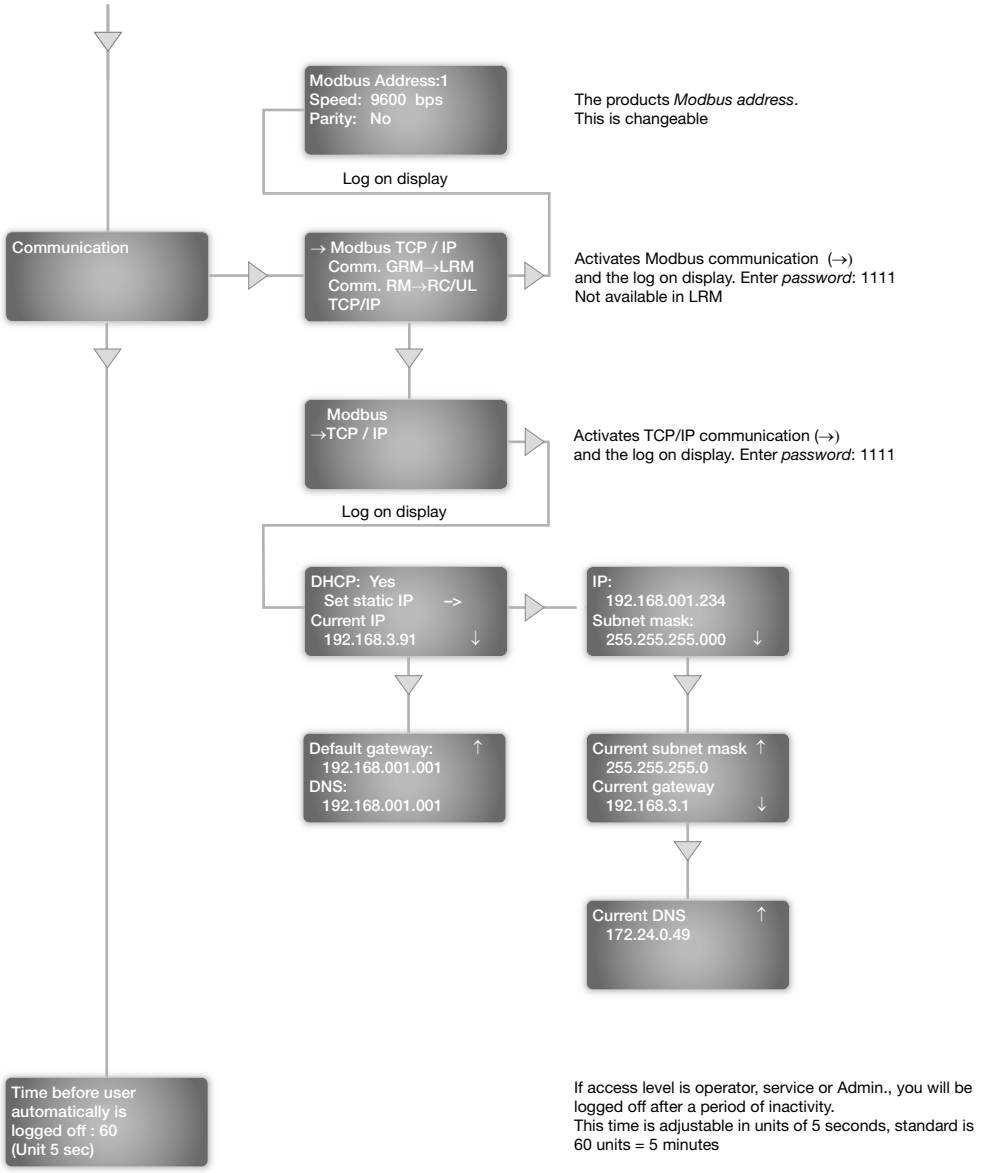
Yes / No

The products *address*, changeable.

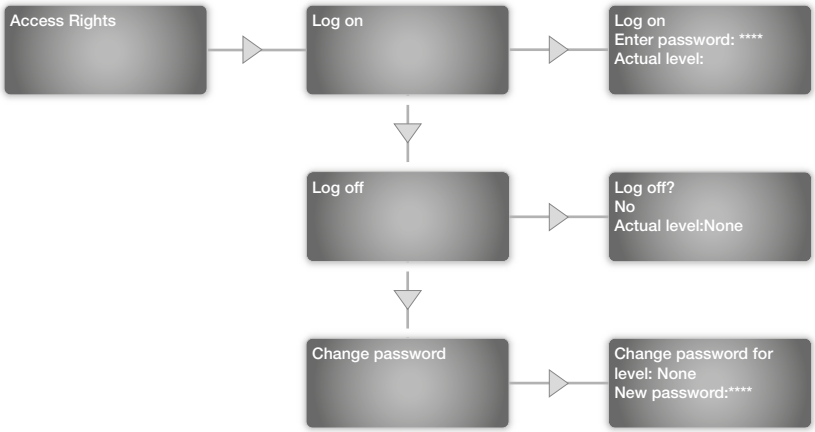
“System” sub-menus continues on next page

Configuration display and sub-menus

"System" sub-menus continued from previous page



Access Rights display and sub-menus



Enter 4-digit password 1111 .

Enter 4-digit password 1111 .

Good Thinking

At Lindab, good thinking is a philosophy that guides us in everything we do. We have made it our mission to create a healthy indoor climate – and to simplify the construction of sustainable buildings. We do that by designing innovative products and solutions that are easy to use, as well as offering efficient availability and logistics. We are also working on ways to reduce our impact on our environment and climate. We do that by developing methods to produce our solutions using a minimum of energy and natural resources, and by reducing negative effects on the environment. We use steel in our products. It's one of few materials that can be recycled an infinite number of times without losing any of its properties. That means less carbon emissions in nature and less energy wasted.

We simplify construction

Lindab®