



Saving energy with Synco

Tips and hints for installers

Answers for infrastructure.

SIEMENS

Content

| | |
|---|-----------|
| Massive savings made easy..... | 4 |
| Synco controller: Our response to energy efficiency..... | 5 |
| Operation | 6 |
| Operating mode concept | 7 |
| Energy saving functions: Heating | 8 |
| Savings potential for Heating..... | 8 |
| Optimum start control | 9 |
| Optimum stop control | 10 |
| Quick setback | 11 |
| Heating limit switch..... | 12 |
| Set mixing controller | 13 |
| Domestic hot water setpoints | 14 |
| Interval operation circulation pump..... | 15 |
| Energy saving functions: Ventilation | 16 |
| Savings potential for Ventilation | 16 |
| Demand-controlled indoor air quality..... | 17 |
| Demand-controlled room temperature..... | 19 |
| Monitor efficiency of heat recovery system | 21 |
| Max. economy changeover of heat recovery..... | 22 |
| Night cooling..... | 23 |
| Additional assistance for installers | 24 |

Massive savings made easy

The duties of an installer

Installers are faced with high demands:

- Plants and controls that are increasingly becoming more complicated should be set up in a manner that optimizes energy use.
- Customers turn to installers to upgrade their plants to save energy.

Savings without investments

Measures applied to control technology are very attractive to the end customers since they deliver noticeable savings without the need for large investments. This guide is a reaction to the demand for a compact guide on enabling Synco energy-saving control functions.

Siemens HVAC technology

The installer does not need to “reinvent the wheel” regarding upgrades and optimization. Siemens building technologies enjoys over 70 years of experience: No matter the function, the Synco standard controller has it just waiting to be enabled.

Synco applications and functions

In contrast to freely programmable systems, faulty functions are out of the question for Synco controllers (e.g. simultaneous heating and cooling).

The applications are tested, subjected to the HVAC lab and proven thousands of times over in the field.

Document information

- This guide compiles in concentrated form Synco heating and ventilation functions used to save energy.
- The experienced Synco installer can use the list of functions as a checklist: Are all the saving functions enabled?
- We have purposely kept the descriptions of the functions brief. We make reference to documents with detailed descriptions where appropriate.
- The guide often starts off with a crash course on operation and a short summary of the operating mode concept since the user's guides are often not (or no longer) close at hand.

Target

- This guide provides a quick overview of where you can achieve energy savings.
- And implementing savings on the Synco controller is so simple that your customer will have nothing but praise for the results.

Siemens wishes you all the best when it comes to saving energy and optimizing your HVAC plants!

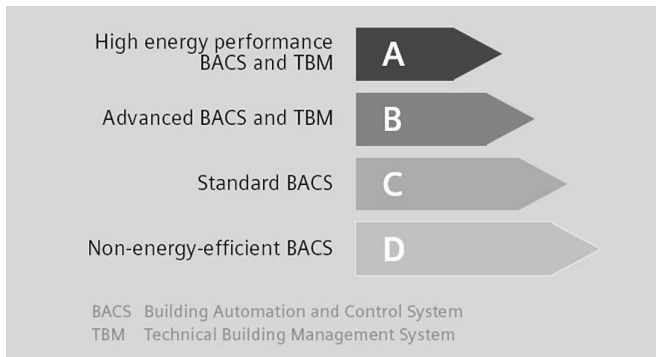
Synco controller: Our response to energy efficiency

The Synco controllers from Siemens represent an unrivaled response to energy efficiency in buildings:

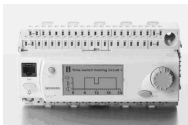
- Standard applications of the Synco controller range are classified **fully** under European standard EN 15232 ("Energy performance of buildings – Impact of building automation, controls, and building management).
- eu.bac-certified Synco controllers (Synco RXB, RXL) guarantee tested quality, control accuracy, and energy performance under European standards and international test standards.

Energy performance information

- Energy performance class A provides for e.g. 30% energy savings in offices as stipulated in EN 15232.



- High control accuracy helps optimize the room climate and prevents unnecessary changes to the room temperature setpoint. A setpoint reduction by 1 °C already results in up to 6% energy savings. eu.bac-certified controllers achieve up to 14% energy savings compared to non-certified controllers at a control accuracy value of 0.1 to 0.2 K depending on climate range.



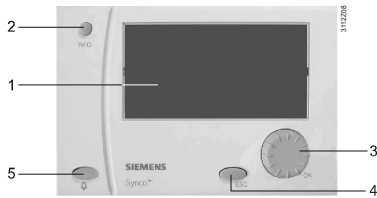
- Synco offers a comprehensive range of standard controllers for all your heating, ventilation, air conditioning and refrigeration technology needs.
- **The descriptions of functions used in this guide are all implemented with Synco 700 controllers (communicative controllers for the system area).**
- Stand-alone controllers are also available for small buildings and simple applications (Synco 100 and Synco 200).

Operation


Operator elements



Plug-in type operator unit

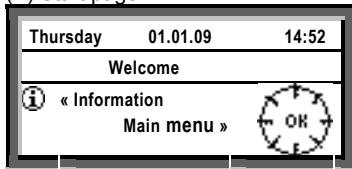


Detached operating unit

- 1 **Display**
- 2 **INFO button**
Function 1: Display key plant data.
Function 2: Display information about the individual data points on the current menu.
- 3 **OK select-and-press knob**
Turn: Select operating lines or adjust values.
Press: Confirms operating line or setting.
- 4 **ESC button**
 Return to previous menu.
- 5 **Fault button**  **with LED**
LED lit/flashing: Fault displays.
Press: Acknowledge or unlock fault.

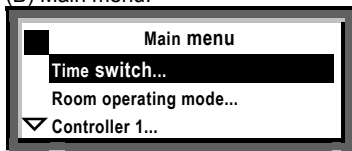
Navigate menus

(A) Start page:

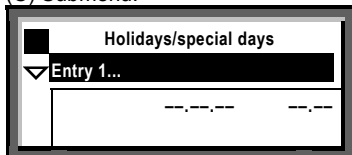


Start page (A) displayed when unused.

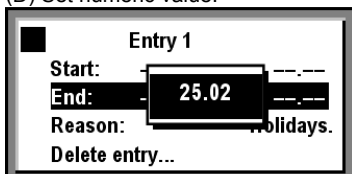
(B) Main menu:



(C) Submenu:



(D) Set numeric value:



1. Press **OK**.
Main menu menu list (B) appears.
2. Turn **OK**.
Cursor moves from line to line.
3. Select the desired menu item.
4. Press **OK**.
Submenu (C) appears.
5. Press **OK**.
Numeric value appears as pop-up (D).
6. Change value:
Turn **OK**.
7. Confirm value:
Press **OK**.
The cursor moves to the next value or back to the data point, if no more values requiring setting.
8. Press the **ESC** button one or more times.
Pressing the **ESC** button returns back to the previous entry field or menu item. Press multiple times to return to the start page.

Operating mode concept





Operating mode concept

The Synco device product range (heating and ventilation) has a common operating mode concept. Operating modes are set once, but used multiple times by the controller. The workflow is as follows:

1. Keep the setpoints for operating modes on reasonable defaults or modify to meet individual needs.
2. Set times for the given operating modes (Time switch with weekly and special days).
3. Enable various controller functions.
The controller uses the entered operating mode setpoints for various functions.




Room

4 room operating modes available for the room (applies to heating and ventilation):

| | | |
|------------|---|---|
| Comfort |  | Setpoint for an occupied room. It ensures a comfortable room climate. |
| Precomfort |  | Energy saving setpoint for the room to quickly achieve Comfort levels when switching to Comfort mode. |
| Economy |  | Plant Off. Only minimum or maximum room temperature is guaranteed for the room (sustained mode). |
| Protection |  | Plant Off. Frost protection active. |




Domestic hot water

3 additional domestic hot water operating modes for heating:




| | | |
|------------|---|---|
| Normal |  | Domestic hot water (DHW) is maintained at the normal temperature. |
| Reduced |  | DHW is maintained at a reduced temperature. |
| Protection |  | No DHW; the storage tank remains, however, protected against frost. |

Default values

Room temperature guide values (heating and ventilation) as follows:

| <i>Symbol</i> | <i>Room operating mode</i> | <i>Reference value for heating</i> | <i>Reference value for cooling</i> |
|---|----------------------------|------------------------------------|------------------------------------|
|  | Comfort | 21 °C | 24 °C |
|  | Precomfort | 19 °C | 28 °C |
|  | Economy | 15... 16 °C | 30 °C |

Temperature guide values for domestic hot water:

| <i>Symbol</i> | <i>Room op. mode</i> | <i>Reference value</i> |
|---|----------------------|------------------------|
|  | Normal | 55 °C |
|  | Reduced | 40 °C |
|  | Protection | 5 °C |

Energy saving functions: Heating

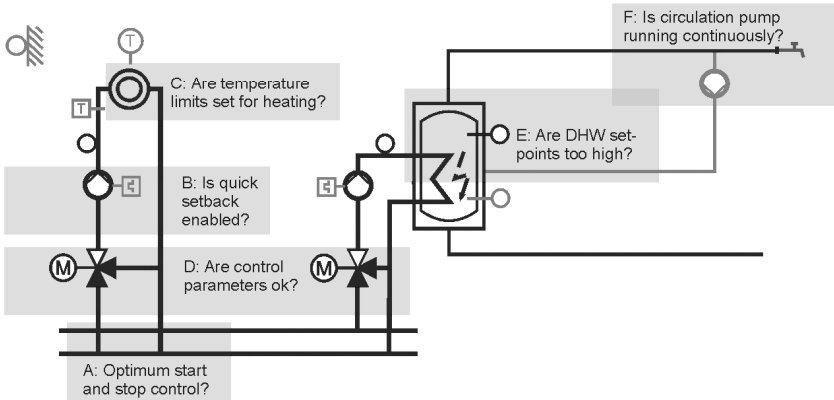
Savings potential for Heating

Heating circuit

Domestic hot water (DHW)

Circulation

| | | |
|--|--|--|
| G: Does time switch correspond to use periods? | G: Does time switch correspond to use periods? | G: Does time switch correspond to use times? |
| H: Are holidays/special days entered? | H: Are holidays/special days entered? | H: Are holidays/special days entered? |
| J: Are room operating modes adapted? | J: Are DHW operating modes adapted? | |



Overview of saving functions:

| | | | |
|---|--|---|---|
| A | Optimum start/stop control (pp. 9, 10) | F | Interval operation of circulation pump (pg. 15) |
| B | Quick setback (pg. 11) | G | Heating circuit time switch (not described) |
| C | Heating limit switch (pg. 12) | | DHW circulation time switch (pp. 14, 15) |
| D | Set mixing controller (pg. 13) | H | Holidays/special days (not described) |
| E | Domestic hot water setpoints (pg. 14) | J | Room and DHW operating modes (pg. 14) |

Symbols:

| Symbol | Meaning | Symbol | Meaning |
|--------|------------------------------------|--------|--|
| | Auto mode by time schedule | | DHW production to normal setpoint |
| | Comfort room operating mode | | DHW production to reduced setpoint |
| | Precomfort room operating mode | | Protection mode for domestic hot water |
| | Economy room operating mode | | Time switch for DHW production |
| | Protection mode (frost protection) | | Time switch for the circulation pump |
| | Heating circuit | | Holidays |
| | Time switch | | Special day |
| | DHW heating | | |

Optimum start control

Plant Heating
Controller Synco RMH760
Target Achieve Comfort or Precomfort setpoint at the start of use (per time switch).

Savings potential

- Precise reaching of the desired temperature conditions.
- Prevent user interventions that waste energy.

Description

The heating circuit is switched on at an earlier time. The main parameters are the outside air and room temperatures (measured or calculated). 2 cases:

- Room temperature sensor available: Controller learns the heat up time per Kelvin room temperature.
- Room temperature sensor **not** available: Controller uses a room model to calculate the room temperature; manual entries required.


Prerequisites

Applies only when **no** room temperature sensor is available:

- Optimization mode is set to "With room model".
- Building time constant is entered.
- Room temperature rise is entered.

Enable function

Function is disabled as factory setting by setting the maximum forward shift to 0 hours.
 Enable function by entering a value > 0 hours.

 **Main menu > Settings > Heating circuit 1...3 > Optimizations/influences**

| <i>Operating line</i> | <i>Recommendation</i> |
|-----------------------|-----------------------|
| Forward shift on max | 6 hour |

Further information

| <i>Topic</i> | <i>Doc.</i> | <i>Sec.</i> | <i>Comment/Recommendation</i> |
|------------------------|-------------|-------------|--|
| Optimum start control | P3133 | 9.7.2 | Principles and additional details |
| Room model | P3133 | 9.7.1 | |
| Building time constant | P3133 | 9.5.1 | Maintained at factory setting 20 hours: – Light construction: 10 hours – Medium construction: 20 hours – Heavy construction: 50 hours |
| Room temperature rise | P3133 | 9.7.2 | Maintained at factory setting of 60 min/K |

Optimum stop control

Plant Heating
Controller Synco RMH760
Target Achieve Economy or Protection mode setpoint at the end of use (per time switch).

Savings potential


- Precisely accurate achievement of the desired temperature conditions.
- Prevent user interventions that waste energy.

Description The heating circuit is switched off at an earlier time. Main parameters are outside air and room temperatures.

Prerequisites

- A room temperature sensor is available.
- Optimization mode is set to "With room temperature sensor".

Enable function Function is disabled as factory setting by setting the maximum early shutdown to 00:00 h.min.
 Enable function with a value > 00:00 h.min.

 **Main menu > Settings > Heating circuit 1...3 > Optimizations/influences**

| <i>Operating line</i> | <i>Recommendation</i> |
|-----------------------|-----------------------|
| Early shutdown max | 01:00 h.min |

Further information

| <i>Topic</i> | <i>Doc.</i> | <i>Sec.</i> | <i>Comment/Recommendation</i> |
|----------------------|-------------|-------------|---|
| Optimum stop control | P3133 | 9.7.2 | Principles and additional details |
| Type of optimization | P3133 | 9.7.1 | Must be set to "With room temperature sensor" |

Quick setback

Plant Heating
Controller Synco RMH760
Target Quick setback achieves the new setpoint earlier for a change to room operating mode.

Savings potential – Significantly reduces the operating hours of the heating circuit pumps and thus its energy consumption.

Description Quick setback is enabled when changing room operating mode from Comfort or Precomfort to Economy or Protection mode, the heating circuit pump is shut down and the heating circuit mixer is closed. The heating circuit remains shut down until the desired room temperature is achieved.
 The function is ended, when the room temperature achieves the new setpoint or it is switched to Comfort or Precomfort operating mode.

Prerequisites 2 cases:

- Room temperature sensor available: Actual room temperature is used to abort quick setback.
- Room temperature sensor **not** available: Controller uses room model. The setback period depends in this case on the outside air temperature and the building time constant.

Enable function Function is enabled as factory setting.

 **Main menu > Settings > Heating circuit 1...3 > Optimizations/influences**

| <i>Operating line</i> | <i>Factory setting</i> |
|-----------------------|------------------------|
| Quick setback | On |

Further information

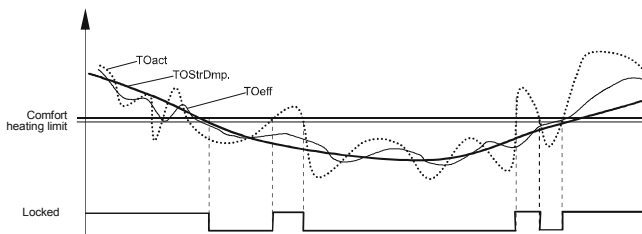
| <i>Topic</i> | <i>Doc.</i> | <i>Sec.</i> | <i>Comment/Recommendation</i> |
|------------------------|-------------|-------------|--|
| Quick setback | P3133 | 9.7.3 | Principles and additional details |
| Room model | P3133 | 9.7.1 | |
| Building time constant | P3133 | 9.5.1 | Maintained at factory setting 20 hours: – Light construction: 10 hours – Medium construction: 20 hours – Heavy construction: 50 hours |

Heating limit switch

Plant Heating
Controller Synco RMH760
Target Prevents unnecessary heating when the outside air temperature is “high”.

Savings potential – The heat limit switch shuts down the heating circuit pump and heat output to the heating circuit.

Description A heat limit (outside air temperature value) is established above which heating is not possible. The controller uses the actual outside air temperature (TOact), the effective outside air (TOeff) and the dampened outside air temperature (TOStrDmp) to nevertheless ensure a comfortable warmth in the residence.



Prerequisites – Building time constant is set/adapted.

Enable function Function is enabled as factory setting.
 Adjust the values to meet your needs as required.

Main menu > Settings > Heating circuit 1...3 > Space heating

| <i>Operating line</i> | <i>Recommendation</i> |
|--------------------------------|-----------------------|
| Comfort heating limit | 17 °C |
| Economy heating limit | 5 °C |
| Heat limit with Comfort preset | Active |

Further information

| <i>Topic</i> | <i>Doc.</i> | <i>Sec.</i> | <i>Comment/Recommendation</i> |
|------------------------|-------------|-------------|--|
| Heating limit switch | P3133 | 9.5.4 | Principles and additional details. |
| Building time constant | P3133 | 9.5.1 | Maintained at factory setting 20 hours: – Light construction: 10 hours – Medium construction: 20 hours – Heavy construction: 50 hours |

Set mixing controller

Plant Heating
Controller Synco RMH760
Target High level of control accuracy achieved by setting the mixing heating circuit in an optimum manner.

Savings potential – An optimally set mixing valve achieves the desired temperature in an energy-efficient manner.

Description The actuator runtime must be adjusted to the actual actuators. The setting is important for both 3-point actuators as well as for DC 0...10 V actuators.
 For 3-point actuators, the set time should be higher when in doubt, since the actuator does not operate optimally in the range from 0 % or 100 % open.

Prerequisites None

Enable function In addition to P-band Xp and integral action time Tn, it is, above all, the actuator runtime that needs to be adapted or checked.

 **Main menu > Settings > Heating circuit 1...3 > Mixing circuit controller**

| <i>Operating line</i> | <i>Recommendation</i> |
|-----------------------|--|
| Actuator running time | Positioning time actuator: <ul style="list-style-type: none"> • Per actuator type label • From the actuator datasheet • Stop using time |

Further information

| <i>Topic</i> | <i>Doc.</i> | <i>Sec.</i> | <i>Comment/Recommendation</i> |
|----------------------|-------------|-------------|-----------------------------------|
| Mixing valve control | P3133 | 5.7.2 | Principles and additional details |

Domestic hot water setpoints

Plant Heating
Controller Synco RMH760
Target Use domestic hot water operating modes together with the domestic hot water time switch.

Savings potential – Adapting domestic hot water production to actual use opens up significant savings.

Description A time switch project can be set for domestic hot water production (weekdays, special days). Domestic hot water production can operate in “normal” or “reduced” operating modes. Domestic hot water setpoints are defined for the operating modes.

Prerequisites None

Enable function Adapt domestic hot water time switch program to actual use.

■ Main menu > DHW > DHW time switch

Example

| <i>Operating line</i> | <i>Factory setting/example</i> |
|-----------------------|---|
| Monday | As of 05:00 Normal As of 22:00 Reduced |
| through | |
| Sunday | As of 05:00 Normal As of 22:00 Reduced |
| Special day | As of 05:00 Normal As of 22:00 Reduced |

■ Main menu > DHW > Setpoints...

| <i>Operating line</i> | <i>Factory setting</i> |
|-----------------------|------------------------|
| Normal setpoint | 55 °C |
| Reduced setpoint | 40 °C |

Further information

| <i>Topic</i> | <i>Doc.</i> | <i>Sec.</i> | <i>Comment/Recommendation</i> |
|--------------------------------|-------------|-------------|-----------------------------------|
| Domestic hot water setpoints | P3133 | 10.3.5 | Principles and additional details |
| Domestic hot water time switch | P3133 | 5.1.2 | Principles and additional details |

Interval operation circulation pump

Plant Heating
Controller Synco RMH760
Target Circulation pumps are operated at intervals (1/3 of the time) only. This saves electricity for the pump and is sufficient to maintain hot water supply.

Savings potential – Savings of 2/3 of the electricity for circulation pump versus standard operations.

Description During interval operation, the circulation pump operates on the hour and half hour for 10 minutes each time, in other words, with interruptions of 20 minutes. The pump only operates when enabled per time switch or parameterization. At the start of an enable the pump always operates for 10 minutes; regardless of the time.

Prerequisites None

Enable function Function is enabled as factory setting.

 **Main menu > Settings > DHW > DHW**

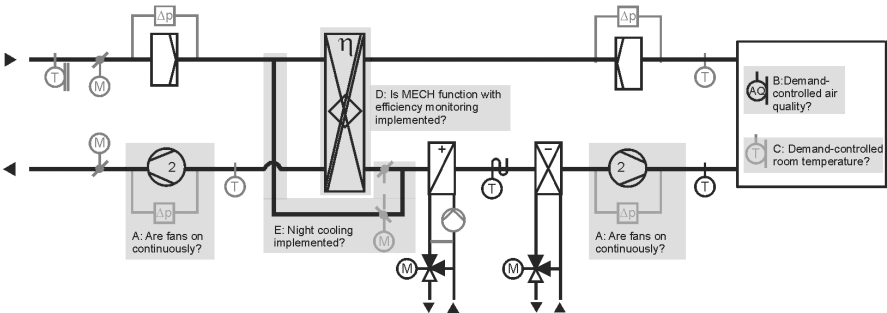
| <i>Operating line</i> | <i>Factory setting</i> |
|------------------------------|------------------------|
| Interval operation circ pump | Yes |

Further information

| <i>Topic</i> | <i>Doc.</i> | <i>Sec.</i> | <i>Comment/Recommendation</i> |
|-------------------------------------|-------------|-------------|-----------------------------------|
| Interval operation circulation pump | P3133 | 10.11.3 | Principles and additional details |
| Circulating pump time switch | P3133 | 5.1.2 | Principles and additional details |

Energy saving functions: Ventilation

Savings potential for Ventilation



Starting point

We assume a plant with 2-speed fans, heating, cooling and heat recovery for the following function extensions.

- ① **Function...**
 - Indoor air quality (B) is demand controlled.
 - Fans (A) for indoor air quality operate only when indoor air quality limit values are exceeded.
- ② **Function...**
 - Room temperature (C) is demand controlled.
 - Fans (A) for room temperature operate only when temperature limit values are exceeded.
- ③ **Function...**
 - Maximum Economy Changeover (MECH) (D) is implemented.
 - Heat exchanger is monitored for efficiency (D).
- ④ **Function...**
 - Night cooling (E) is implemented.

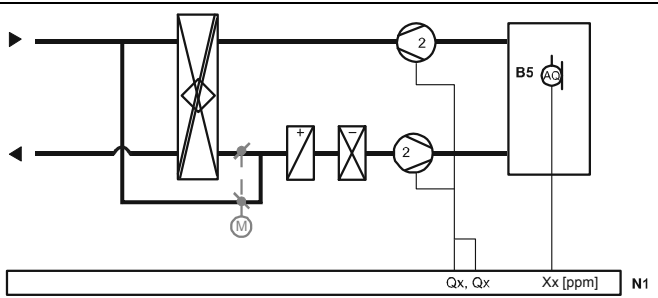
Overview of energy saving functions

| | |
|---|--|
| ① | Demand-controlled by indoor air quality (pg. 17) |
| ② | Demand-controlled by room temperature (pg. 19) |
| ③ | Maximum Economy Changeover (MECH) of heat recovery (pg. 22). Monitor efficiency of heat recovery system (pg. 21) |
| ④ | Night cooling (pg. 23) |

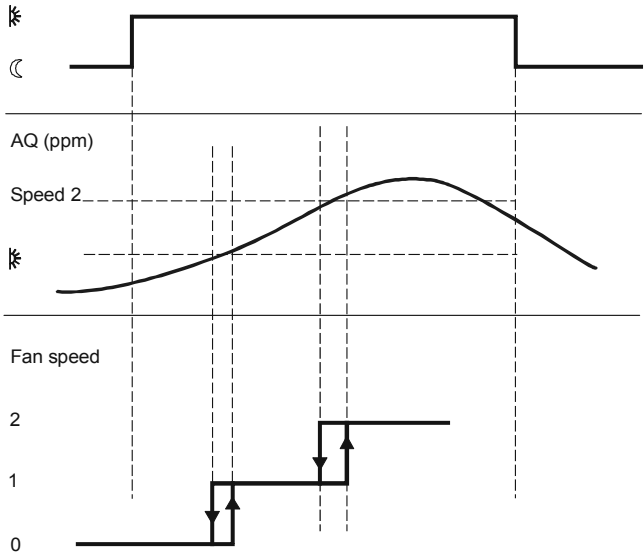
Notes

- The energy saving functions depicted represent a selection of available functional extensions for Synco ventilation controllers.
- For their part, the configurations of the functional extensions described may represent a variant of multiple possibilities. Please consult referenced documents for alternative configurations.
- Setting parameters must be checked on a plant-by-plant basis.
- Supplemental configurations are not described; they may, however, be derived from the plant diagrams.

Demand-controlled indoor air quality



Time switch program



Plant
Controller
Target

Ventilation
Synco RMU7x0
The plant is only switched on if the indoor air quality limit values are exceeded.

Savings potential

– Minimizes fan operating hours.

Description


The plant is ramped up in auxiliary mode for the Precomfort operating mode. Fans are switched on by indoor air quality.

Prerequisites


- Fans are available.
- The measured value for indoor air quality (CO₂/VOC) is available on the controller.

Enable function

 **Main menu > Settings > Operating mode...**

| <i>Operating line</i> | <i>Setting value</i> |
|--|----------------------|
|  Plant operating mode | Sustained mode |
| Sustained mode time minimum | 00.30 hour |

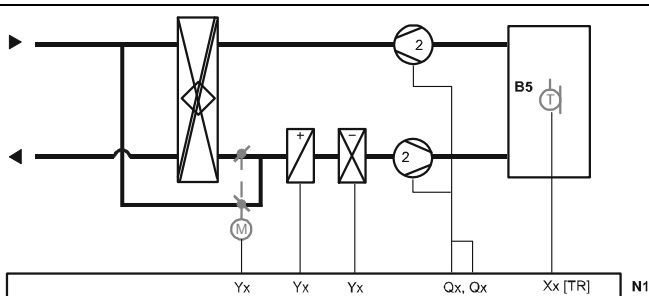
 **Main menu > Settings > IAQ controller...**

| <i>Operating line</i> | <i>Setting value</i> |
|---|----------------------|
|  Setpoint indoor air quality | 1000 ppm |
| Setpoint fan speed 2 | 1200 ppm |

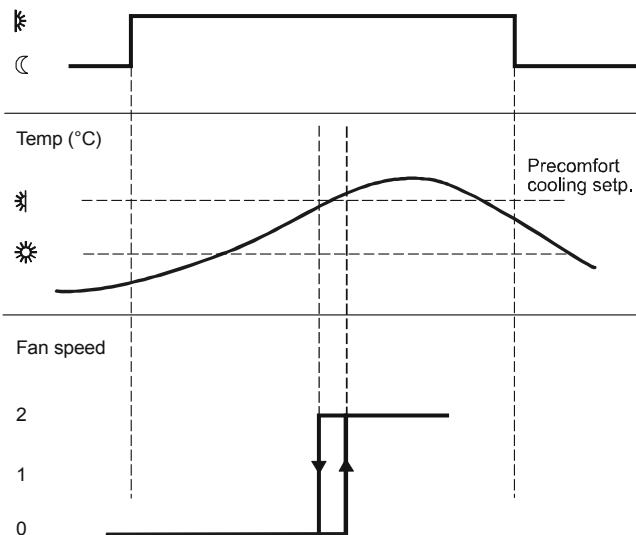
Further information

| <i>Topic</i> | <i>Doc.</i> | <i>Sec.</i> | <i>Comments</i> |
|------------------------------|-------------|-------------|--|
| IAQ controller | P3150 | 16 | Principles and additional details |
| Sustained mode | P3150 | 19 | Principles and additional details |
| Outside air damper | P3150 | 16.2 | The outside air damper is opened depending on indoor air quality |
| Economy plant operating mode | P3150 | 16.3 | Possible in Economy operating mode, similar to sustained mode |

Demand-controlled room temperature



Time switch program



Plant
Controller
Target

Ventilation
Synco RMU7x0
The plant is only switched on if the temperature limit values are exceeded.

Savings potential

– Minimizes fan operating hours.

Description


The plant is ramped up in sustained mode for the Precomfort operating mode. Fans are switched on by room temperature. Typical measured values for sustained mode include temperature, humidity or other universal controlled variables.

Prerequisites

- Fans are available.
- Room temperature is available on the controller.



Enable function

 **Main menu > Settings > Operating mode...**

| <i>Operating line</i> | <i>Recommendation</i> |
|--|-----------------------|
|  Plant operating mode | Sustained mode |
| Sustained mode time minimum | 00.30 h |

 **Main menu > Settings > Controller 1 > Room setpoints...**

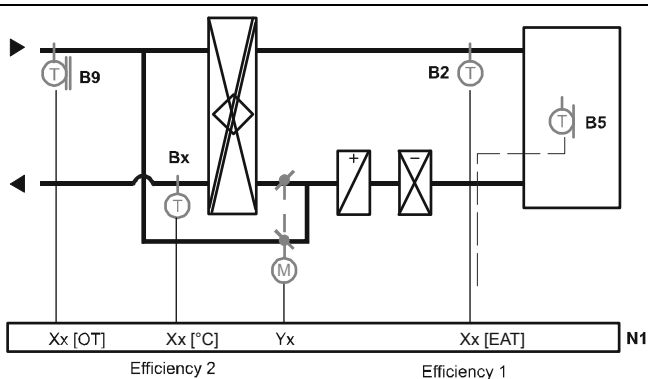
 **Main menu > Settings > Controller 1 > Setpoints**

| <i>Operating line</i> | <i>Recommendation</i> |
|---|-----------------------|
|  Precomfort cooling setpoint | 25 °C |
|  Comfort cooling setpoint | 24 °C |

Further information

| <i>Topic</i> | <i>Doc.</i> | <i>Sec.</i> | <i>Comments</i> |
|------------------------------|-------------|-------------|---|
| Sustained mode | P3150 | 19 | Principles and additional details |
| Sustained heating mode | P3150 | 19.2.1 | Similarly, sustained mode is possible for heating |
| Economy plant operating mode | P3150 | 19.1 | Possible in Economy operating mode, similar to sustained mode |
| Input identifier EAT | P3150 | 8.3 | Identifier not permitted for sustained mode |

Monitor efficiency of heat recovery system



Measuring arrangement for exhaust air

Plant

Ventilation

Controller

Synco RMU7x0

Target

Ensure optimum heat recovery operation.

Savings potential

- Savings on operating costs by alarming in the event of insufficient heat recovery efficiency.

Description

- Comparative measurements between outside air, room/extract and exhaust air temperature. Heat recovery efficiency is determined from these values. A message is generated if efficiency is below the settable fault status message threshold.
- Possible causes include a dirty heat exchanger or electro-mechanical fault to the heat recovery damper.

Prerequisites

- Outside air and room/extract air temperature sensors.
- Exhaust air temperature (supplemental sensor depending on the measurement arrangement).

Enable function

Main menu > Settings > Aggregates > Heat recovery equipment

| <i>Operating line</i> | <i>Recommendation</i> | <i>Comments</i> |
|-------------------------|-----------------------|--|
| Measurement arrangement | Exhaust air | |
| Efficiency limit | 50% | From ventilation supplies (heat recovery data) |

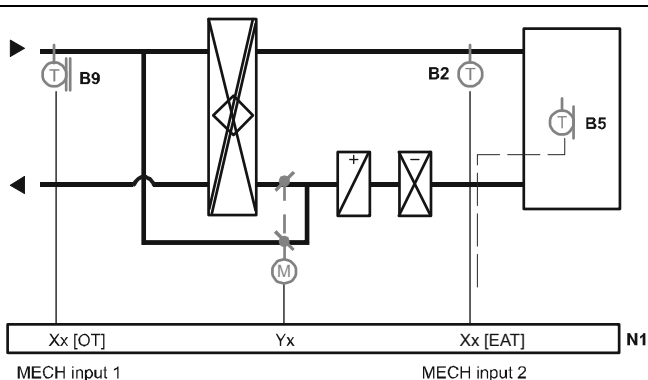
Fault status message

| <i>No.</i> | <i>Text</i> |
|------------|-------------------------|
| 3111 | HR efficiency deviation |

Further information

| <i>Topic</i> | <i>Doc.</i> | <i>Sec.</i> | <i>Comments</i> |
|-------------------------|-------------|-------------|--|
| Heat recovery equipment | P3150 | 10.4 | Principles and additional details |
| Monitor efficiency | P3150 | 10.4.4 | Principles and additional details |
| Conditions | P3150 | 10.4.4 | Take note of the section on conditions |

Max. economy changeover of heat recovery



Plant Ventilation
Controller Synco RMU7x0
Target Optimized heat recovery saves heat and cooling energy (using a maximum economy changeover).

Savings potential – Optimum control of heat recovery with regard to operating costs.

Description

- Principle: Comparative measurements between outside air and room/extract air temperature.
- The output for the heat recovery equipment is inverted, if the set MECH limit value is exceeded.
- Acts on heating as well as cooling sequences.

Prerequisites

- Heat recovery equipment is available.
- Outside air and room/extract air temperature sensors are available on the controller.

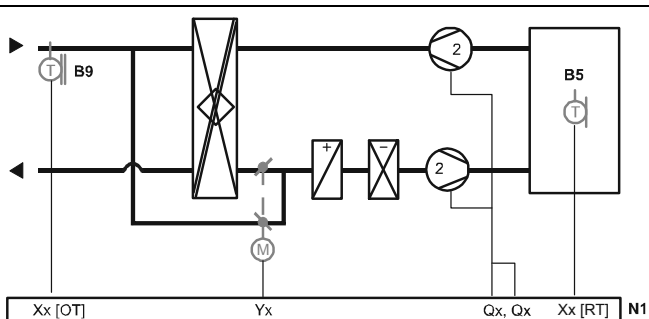
Enable function  Main menu > Settings > Aggregates > Heat recovery equipment

| Operating line | Recommendation |
|------------------|----------------|
| MECH limit value | 3.0 K |

Further information

| Topic | Doc. | Sec. | Comments |
|-------------------------|-------|--------|--|
| Heat recovery equipment | P3150 | 10.4 | Principles and additional details |
| Changeover options | P3150 | 10.4.3 | <ul style="list-style-type: none"> • With external signal • With set value • Based on an adjustable difference (the example here) |

Night cooling



Plant Ventilation
Controller Synco RMU7x0
Target Cooling of a room in summer during vacancy using the lower outside air temperature.

Savings potential – Saves cooling energy.

Description – Principle: Comparative measurement between outside air and room temperature.
 – Also possible with heating plants (without a cooling sequence).

Prerequisites – Outside air temperature is available on the controller.
 – Room temperature is available on the controller.

Enable function Enable function by setting the "Precooling time max" > 0 minutes.

 **Main menu > Settings > Night cooling**

| <i>Operating line</i> | <i>Recommendation</i> |
|-----------------------|-----------------------|
| Operating time min | 30 min |
| Precooling time max | 320 min |
| Speed | Speed 2 |

Further information

| <i>Topic</i> | <i>Doc.</i> | <i>Sec.</i> | <i>Comments</i> |
|--------------------------|-------------|-------------|--|
| Night cooling | P3150 | 21 | Principles and additional details |
| Switch on/off conditions | P3150 | 21.2 | |
| Input identifier EAT | P3150 | 8.3 | Identifier not permitted for night cooling |

Additional assistance for installers

Your regional Siemens partner looks forward to supporting you with a number of offerings. Current highlights include:

Web server OZW775

The Synco Web server OZW775 allows you to operate the plant in an optimum and efficient manner achieving savings. Extract from a June 2, 2009 press article:

"You can control and monitor an HVAC plant at any time regardless of location via the web server OZW775 with any PC or smartphone. The integrated alarming system sends maintenance suggestions and messages on potential faults per email, SMS, pager or fax depending on the configuration."

https://www.buildingtechnologies.siemens.com/press/press_release

HIT tool

All Synco applications are now accessible in one integrated online tool. And you can make your selection based on energy efficiency.

www.siemens.com/HIT

Technical principles documentation

High-value Siemens documents on the technical principles of building technology are available for download and self-study.

<https://www.buildingtechnologies.siemens.com/support>

Download Center > category: Building Automation

End user information

For further supporting measures, a document ("Saving energy with Synco - Tips and hints for end users") with practical energy saving tips and a brief overview of potential energy savings using Synco controllers is published.

Installers may print the end user information and provide it to end customers to support their case.

The document can be downloaded at:

www.siemens.com/HIT

Select country version > Info Center > Products overview > Control units-Synco

Siemens Switzerland Ltd
Industry Sector
Building Technologies Division
International Headquarters
Gubelstrasse 22
CH-6301 Zug
Tel. +41 41-724 24 24
Fax +41 41-724 35 22
www.siemens.com/buildingtechnologies

© 2009 Siemens Switzerland Ltd
Subject to change

Notes

Notes

Siemens Switzerland Ltd
Industry Sector
Building Technologies Division
International Headquarters
Gubelstrasse 22
6301 Zug
Switzerland
Tel +41 41 724 24 24

Siemens Ltd
Industry Sector
Building Technologies Division
Units 1006-10
10/F, China Resources Building
26 Harbour Road
Wanchai, Hong Kong
Tel +852 2870 7888

Siemens Building Technologies
Industry Sector
Brunel House
Sir William Siemens Square,
Frimley
Camberley
Surrey, GU16 8QD
United Kingdom
Tel +44 1276 696000

The information in this document contains general descriptions of technical options available, which do not always have to be present in individual cases. The required features should therefore be specified in each individual case at the time of closing the contract.

© Siemens Switzerland Ltd • Order no. 0-92195-en • 10907 Ah