Corrigo user guide

Ventilation application

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About this user guide

This user guide covers all the models in the Corrigo series used with the ventilation application.

The document only covers functions which are available to users with Operator access and lower.

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More information

More information about Corrigo can be found in:

- *Manual Corrigo Ventilation* – Complete manual for configuration and maintenance of Corrigo with ventilation application, available in Swedish, English, German and French.

- *Manual E tool*© – Manual on how to configure the controllers using the PC software E tool©, available in Swedish, English, German and French.

- *Lon-interface variable list* – Variable list for the Corrigo series, available in Swedish and English.

- *Corrigo ventilation variables for EXOline, Modbus and BACnet* – Variable list for EXOline, BACnet and Modbus communication, available in English.

- *Editable PDF files for Corrigo*

- *CE - Declaration of conformity, Corrigo*

- *Environmental declaration* – Product content declaration and information about environmental sustainability in its development and manufacturing process.

The information is available for download from Regin's website, www.regincontrols.com.

About Corrigo

Corrigo is a series of pre-programmed, configurable controllers for different applications.

The Corrigo series comprises three model sizes: 8, 15 or 28 in-/outputs.

The controllers are available with or without a front panel display and buttons. For units without a display and buttons, a separate, cable-connected terminal (E3-DSP) with display and buttons is available.

All normal handling can be carried out using the display and buttons or by using E tool©, a software tool that runs on a computer connected to the controller with an E-CABLE model communication cable or a crossover network cable.

Ventilation application, overview of functions

The controller comes loaded with programs for control of a ventilation unit. The temperature controller is based on a supply air PI-controller for heating control with a pre-programmed set of control modes. A number of different control functions as well as analogue and digital input and output functions can be bound to this controller. Certain functions are necessary, while others can be considered optional. This flexibility means that what is shown in the display may differ from one unit to another, depending on which functions have been selected.

Functional choices are not made in the operator level, but in the Admin access level by educated personnel with specialised knowledge. The same applies to other configuration. The program for an air handling unit contains, apart from other things, the following functions:

Different temperature control modes:

- Supply air temperature control, with or without outdoor temperature compensation.

- Room temperature control (cascade control).

- Extract air control (cascade control).

- Seasonal switching between supply air temperature control and room/extract air temperature control.

- Outdoor compensated room/extract air control.

- Extra, separate temperature control circuit for after-heaters, etc.

- Extra control sequences Y4 and Y5 (in addition to Y1, Y2 and Y3) for free integration into the controller output.

With control of:

- Heat exchanger (liquid connected, plate or rotating) or mixing dampers.
- Heating coil: Water with or without frost protection or electric with high temperature limit switch.
- Cooling: Water or DX cooling in up to 3 steps.
- Circulation pumps for heating, exchanger and cooling.
- Recirculation dampers.

Fan control

- 1- or 2-speed supply air and extract air fans.
- Frequency controlled supply and extract air fans with pressure or flow control, manual control or external control from a VAV system.
- Pressure controlled supply air fan with slave connected extract air fan (output dependent or flow dependent) or opposite function (pressure controlled extract air fan with slave connected supply air fan, output dependent or flow dependent).

Humidity control

Either humidification or dehumidification, or both humidification and dehumidification, can be used.

Timer control

For starting and stopping the unit. Up to 5 timer outputs for control of external functions such as lighting, door locks etc.

Demand controlled ventilation

In buildings with strongly varying occupancy the fan speeds or mixing dampers can be controlled by the air quality measured by a CO_2 sensor.

Support control

When using the control function room control or extract air temperature control, it is possible to utilise support-heating and/or support-cooling.

Free cooling

When this function has been activated it is used during the summer to cool the building during the night by using cool outdoor air, thereby reducing cooling needs during the day.

Free heating

If the outdoor temperature is higher than the indoor temperature and there is a heating demand, the recovery damper will not open for recovery but instead open fully for outdoor air. This may occur during low night-time outdoor temperatures, when the room has been cooled considerably and the outside heat is rising faster than indoors. This function is activated at the same time as "Free cooling".

Enthalpy control

Measures and compares the energy content (enthalpy) of the outdoor air and the extract air (temperature and air humidity). When this function is active, the mixing damper signal will be overridden to recirculation if the outdoor enthalpy is higher than indoors.

Pretreatment

Damper and pump control for preheating or precooling of the outdoor air via an underground intake channel.

Cooling recovery

If the extract air is colder than the outdoor air and cooling is required, the heat exchanger control is reversed in order to return the cool extract air.

Recirculation control

Recirculation of air using a supply air fan and (optionally) extract air fan and a recirculation damper with or without temperature control. Used as a recovery function or during heating with support control during the night. Recirculation control is available as an analogue or a digital function.

Step controllers Heating/Cooling

As an alternative to the analogue control of "Actuator heating Y1" or "Actuator cooling Y3" step controllers can be used for controlling heating or cooling in steps using digital control.

Change-over

In 2-pipe systems where a combination heater/cooler is operating together with a heat pump, Change-over is a function that enables using the same pipe for both heating and cooling, depending on which is currently required. It uses the output Y1 Heating/Y3 Cooling.
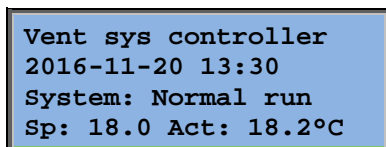
Display, buttons and LEDs

This section is applicable to Corrigo units with display and buttons but also to the hand terminal E3-DSP. For third generation controllers, it is also possible to connect an external display to units that are equipped with a display and buttons.

E3-DSP

Display

```
Vent sys controller
2016-11-20 13:30
System: Normal run
Sp: 18.0 Act: 18.2°C
```

The display has 4 rows of 20 characters. It has background illumination. The illumination is normally off, but is activated as soon as a button is pressed. The illumination will be turned off again after a period of inactivity.

Buttons and LEDs

ARROW UP:
Move up a row in the menu.
(Increase parameter value)

ARROW DOWN:
Move down a row in the menu.
(Decrease parameter value)

ARROW RIGHT:
Move to a lower menu level.
(Move the cursor to the right in the parameter)

ARROW LEFT:
Move to a higher menu level.
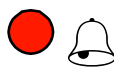(Move the cursor to the left in the parameter)

OK:
Open/Activate a selected menu/setting.
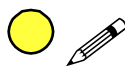(Confirm a parameter value)

ALARM:
Press to view the alarm list.

CLEAR:
Reset/Abort a parameter change unless OK has already been pressed.

ALARM LED:
Red, flashing light when there is an unacknowledged alarm. Non-flashing light when there is an acknowledged alarm which has not been reset.

WRITE LED:
Some menus contain settable values. This is indicated by the yellow LED flashing. The value can be changed by pressing OK.

The menu system

Navigating the menus

The choice of access level/user access determines which menus are shown.

```
Regulator vent. sys
2016-11-20 13:30
System: Running
Sp: 18.0 Act: 18.2°C
```

The display to the left is normally shown at start-up and is located at the basic level of the menu tree. The appearance of the start display may vary since there are 5 types to choose from during configuration. The text in the first row can also be changed using E tool©.

Sp and **Av** are setpoint and actual value for the supply air controller. This also applies when using cascaded room temperature or extract air temperature control.
Actual value = The current measured temperature.
Setpoint value = The desired configured temperature.

Pressing ARROW DOWN will move you through the menu choices at this, the lowest level. ARROW UP will move you back through the choices.
Which menus are shown depends on which access level you are using (see the section Access rights for more information about logging on to higher levels).

The basic access level, the level normally active when you have not logged on, only shows a limited number of menus and submenus:

Running mode

Here, you can view and set the unit's running mode, as well as view selected control functions and alarm events.

Temperature, Air control and Humidity control

Here, relevant values and setpoint values are displayed. Setpoints can only be changed if you have Operator access or higher.

Time settings

Here, the time, date and set running times are shown. Values can only be changed if you have Operator access or higher.

Access rights

Here, you can log on to a higher level, log off to the basic level and change the password.

```
Running mode
Temperature
Air control
Humidity control
Time settings
Configuration
Access rights
```

A user with Normal access, the basic level, can view a limited selection of menus. The unit's running mode can be changed and alarms acknowledged.

If you have Operator access, you can access more information and change other operation parameters like setpoints and time functions.

To get to the next menu level, use ARROW UP and ARROW DOWN to place the display marker opposite the menu you wish to access and press ARROW RIGHT. If you have sufficient log on privileges the display will change to the menu you have chosen.
At each level there may be several new menus through which you may move using the ARROW UP and ARROW DOWN buttons.

There are sometimes further submenus linked to a menu or menu item. This is indicated by an arrow symbol at the right-hand edge of the display. To choose one, use ARROW RIGHT again.

To go to a previous menu level, press ARROW LEFT.

Change parameters

In some menus there are parameters that can be set. This is indicated by the yellow LED with ✐ flashing.

A quick blinking (2 times/s) indicates that the parameter can be changed using the present user access.

A slower blinking (1 time/s) indicates that a higher user access is required to change the parameter.

To change a parameter, first press the OK button. If you need a higher user access than you have to change the parameter, a log on menu will be displayed, see below. Otherwise, a cursor will appear at the first settable value. If you wish to change the value, do so by pressing the ARROW UP and ARROW DOWN buttons.

In numbers containing several digits you can move between the digits using the ARROW LEFT/RIGHT buttons.

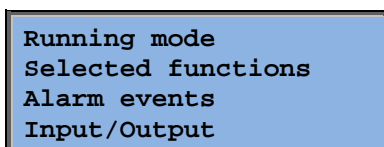When the desired value is displayed press OK.

If there are further settable values displayed the cursor will automatically move to the next one.

To pass a value without changing it, press RIGHT.

To abort a change and return to the initial setting, press and hold the C-button until the cursor disappears.

Collected here are a number of menus showing running mode, selected functions, alarm events and status of inputs and outputs.
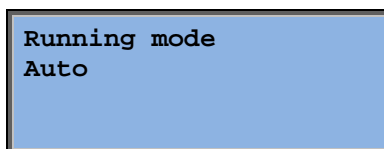
Running mode

```
Running mode
Selected functions
Alarm events
Input/Output
```

Running mode unit

The unit's running mode can be changed without logging on.

```
Running mode
Auto
```

The running mode can be set to **Auto**, **Off, Manual reduced run** or **Manual normal run**. The **Auto** mode should normally be used.
Off can be used to stop the unit for service and similar. **Manual normal run** or **Manual reduced run** will start the unit even if the timer says that the running mode should be "Off".

If the running mode is set to **Off**, **Manual normal run** or **Manual reduced run**, a C alarm is activated: Running mode Manual. The alarm automatically resets when the running mode is set to **Auto** again.

```
Running time
SAF:   14.6   h
EAF:   14.4   h
```

Shows the accumulated running times for the fans.

Selected functions

```
Control function
Supply air control
Fan control
Pressure
```

In these menus, you can see how some of the most important functions have been configured. Changes cannot be made.

```
Heating:  Water
Exchanger:  Plate exc
Cooling:  Water
```

Heater, exchanger and cooling type.
If one of the functions is not used, it will be shown as "Not used".

```
Free cool active: No
```

This function is used during the summer to cool the building night-time using cool outdoor air, thereby reducing the need for cooling during the day and saving energy.

```
Support control
active:   Yes
CO2/VOC active
If timer on
```

Support control is used for adjusting the room temperature outside of the normal running time. If there is a heating or cooling demand in the room, the unit will start and the temperature will be adjusted.

```
Fire damper function
Not active
Operation when alarm
Stopped
```

The fire function determines the settings for the fire dampers and the unit's running mode when a fire alarm is activated.

```
Frost protection
Active
Cooling recovery
Not active
```

Frost protection is normally always used in water heating systems. The cooling recovery function starts the heat exchanger in order to return cooling from the extract air when the extract air is colder than the outdoor air and cooling is required.

```
External setpoint
Not active
```

An analogue input can be configured for an external setpoint device e.g. TG-R4/PT1000.

Alarm events

```
24 Nov 14:32    B
Malfunction supply
air fan
Acknowledged
```

Alarm log, containing the 40 latest alarm events. The most recent event is listed first. The alarm log can only be used for viewing the alarm history. Alarms are handled in a special area, see the section Alarm handling.

Inputs/Outputs

```
AI
DI
UI
AO
DO
```

These menus show the current values for all configured inputs and outputs.

These are read-only menus. No changes can be made here.

Universal inputs can be configured as either analogue or digital inputs.

Analogue inputs and digital outputs are shown here as examples.

Analogue inputs/outputs

```
AI1: 18.5 Outd temp
AI2: 20.3 Supply temp
AI3: 28.2 Frost prot
AI4: 19.9 Room temp1
```

The current values for the analogue inputs and outputs are shown here.

Digital inputs/outputs

```
DO1:Off SAF 1/1-speed
DO2:Off EAF 1/1-speed
DO3: On SAF 1/2-speed
DO4:Off EAF 1/2-speed
```

This menu shows if the digital inputs and outputs are On or Off.

Temperature

Here you can view all actual and setpoint values for temperature control. The menu is visible to all users, regardless of log on level. However, to make changes you need at least Operator authority.

Only menus for activated functions will be shown.

Setpoint Supply air temperature control

```
Outd temp:18.4°C
Supply air temp
Act: 19.8°C    Setp→
Setp: 20.0°C
```

Here, actual and setpoint values are shown, as well as the outdoor temperature if a outdoor sensor has been configured. This is a read-only menu. No settings can be made here.

```
Supply air temp
Setp: 20.0°C
```

Submenu: Setpoint.

Setpoint Outdoor temperature compensated Supply air control

```
Outd temp:18.4°C
Supply air temp
Actual: 19.8°C   Setp→
Setp: 20.0°C
```

Here, actual and setpoint values are shown, as well as the outdoor temperature if a outdoor sensor has been configured. This is a read-only menu. No settings can be made here.

```
Outdoor comp setp
-20.0°C = 25.0°C
-15.0°C = 24.0°C
-10.0°C = 23.0°C
```

Submenus: Setpoint

In control modes Supply air control/Room control and Supply air control/Extract air control , the setpoint relationship is used when supply air control is active.

```
Outdoor comp setp
-5.0°C = 23.0°C
 0.0°C = 22.0°C
 5.0°C = 20.0°C
```

Use the eight breakpoints to generate a setpoint / outdoor temperature relationship.

```
Outdoor comp setp
10.0°C = 19.0°C
20.0°C = 18.0°C
```

In-between-values are calculated using straight lines between breakpoints.

Setpoints for temperatures lower than the lowest breakpoint and higher than the highest breakpoint are calculated by extending the line between the two last breakpoints at either end.

Example: At the lower end the setpoint is increasing by 1°C for every 5 °C lowering of the outdoor temperature. So the setpoint at –23°C would be 25°C + 0.6x 1.0°C = 25.6°C.

Setpoint Cascaded room temperature control

```
Room temp1
Actual: 22.0°C
Setpoint: 21.5°C    →
```

In control mode Supply air control/Room control, the setpoint is used when cascade connected room control is active.

```
If cascade control
max/min supply setp
Max: 30.0°C
Min: 12.0°C
```

Submenu for setting the min and max limitation temperatures for the supply air.

```
Room temp2
Actual: 21.8°C
```

If two room sensors have been configured you will also get this menu. The controller uses the average temperature of the two sensors.

Setpoint Cascaded extract air temperature control

```
Extract air temp
Actual: 21.0°C
Setpoint: 21.1°C
```

In control mode Supply air control/Extract air control, the setpoint is used when cascaded extract air control is active.

```
If cascade control
max/min supply setp
Max: 30.0°C
Min: 12.0°C
```

Sub menu for setting the min and max limitation temperatures for the supply air.

Setpoint Outdoor compensated room temperature/extract air control

```
Room temp1
Actual: 22.0°C
  Setp: 21.5°C    →
```

Offers the possibility to compensate the room temperature/extract air temperature against the outdoor temperature. Note that the curve must be adjusted for optimal functionality!

```
Outdoor comp setp
-20.0°C = 25.0°C
-15.0°C = 24.0°C
-10.0°C = 23.0°C
```

This function operates according to the assumption that one may accept a slightly higher indoor temperature when it is warm outside and vice versa, providing an excellent opportunity for conserving energy.

```
Outdoor comp setp
-5.0°C = 23.0°C
 0.0°C = 22.0°C
 5.0°C = 20.0°C
```

```
Outdoor comp setp
10.0°C = 19.0°C
20.0°C = 18.0°C
```

```
If cascade control
max/min supply setp
Max: 30.0°C
Min: 12.0°C
```

Support control heating/Support control cooling

```
Support heating
Room temp for
Start: 15.0°C
Stop: 21.0°C
```

Support control is normally used when room temperature control or extract air control has been configured, to prevent a too large offset in temperature when the unit is "Off".

```
Support cooling
Room temp for
Start: 30.0°C
Stop: 28.0°C
```

"Support control Heating" or "Support control Cooling" will run if support control is configured, the running mode is "Off" (timer control OFF and not in extended running) and if conditions call for support control.

Minimum run time is settable 0 to 720 minutes (FS= 20 minutes).

Frost protection temperature

```
Frost protection
     Actual: 30.9°C
```

Relevant value for the water temperature at the frost protection sensor. Frost protection can be set to function either on Y1, Y4 or on both. The function only supports a single sensor.

Exchanger de-icing

```
Deicing exchanger
   Actual: 11.2°C
     Setp: -3.0°C
Hysteresis:  1.0°C
```

This menu is shown if exchanger de-icing has been configured. If the temperature at the de-icing sensor drops below the setpoint value, the de-icing function is started. It is stopped when the temperature has risen above the setpoint plus the set differential.

Heat exchanger efficiency monitoring

```
Efficiency exch
Actual: 93%
Output exchanger
Actual: 100%
```

The function calculates the heat exchanger temperature efficiency in % when the output signal to the exchanger is higher than 5 % and the outdoor temperature is lower than 10°C. The function requires an extract air sensor, an exhaust air sensor and an outdoor sensor or an efficiency sensor, extract air sensor and outdoor sensor.

When the control signal is lower than 5% or the outdoor temperature is higher than 10°C the display will show 0%.

Recirculation

The first of the three below menus can be found under *Configuration* in the controller. The fourth menu is located under *Temperature*.

```
Enable temp
control when
recirculation
Heat and cooling →
```

Recirculation is a function for mixing the air in the room using the supply air fan. The function can be used even when there is no heating or cooling demand. When using recirculation control, the extract air fan stops and a recirculation damper opens which allows the air to circulate through the unit.

```
Constant or
setpoint offset
when recirculation:
Constant
```

```
EAF running during
recirculation: No
```

It is selectable whether or not the extract air fan should run during recirculation.

```
Offset SAF when
frequency control
and recirculation:
 0.0 Pa
```

During recirculation, offset SAF makes it possible to add to the supply air fan an offset to the setpoint during normal operation.

If pressure control has been configured, the offset is set in Pa. If flow control has been configured, it is set in m3/h. If manual control has been configured, the offset is set in %.

If you have selected the Offset function, which is a deviation from the regular supply air setpoint, you will instead be given the option to change this offset value here.

Extra controller unit

```
Extra unit
Actual: 21.2°C
Setpoint: 20.0°C
```

An independent temperature control circuit for control of for example after-heaters. The circuit can be configured to either heating or cooling.

Enthalpy control

```
Enthalpy indoor:
 35.5 kJ/kg
Enthalpy outdoor:
 36.4 kJ/kg
```

Enthalpy control is a function for overriding the mixing damper output signal to recirculation if the enthalpy is higher outdoors than indoors.

```
Outd temp
 Act: 19.2 °C
Humidity outdoors
Act: 51.1 % RH
```

Submenu for reading of outdoor temperature and outdoor air humidity.

```
Indoor temp
Act: 19.9°C
Humidity indoors
Act: 44.3 % RH
```

Submenu for reading of indoor temperature and air humidity in the room.

```
Override cool
recovery due to
enthalpy:
Active
```

Shows if enthalpy control is active or not.

Air control

This menu is only shown if frequency controlled fans have been configured.

Depending on the choice of fan control, different combinations of the menus below will be shown.

Pressure control SAF (there are also corresponding menus for EAF)

```
Pressure control SAF
Actual: 480 Pa
Setp: 490 Pa      →
```

Here, Actual and Setpoint values are displayed. This is a read-only menu. No settings can be made here.

```
Pressure control SAF
Setp 1/1: 490 Pa
Setp 1/2: 300 Pa
```

Submenu Setpoint values for normal speed (1/1) and reduced speed (1/2).

```
Outdoor comp setp
  -20 °C = -50 Pa
   10 °C =   0 Pa
Act comp:  -5 Pa→
```

Submenu outdoor compensation. An outdoor temperature dependent compensation of the pressure setpoint value can be added. The compensation can be set for either the supply air fan alone or for both fans.

```
Comp sens:Room temp1
15    °C = 0    Pa
20    °C = 0    Pa
25    °C = 0    Pa
```

Submenu extra compensation. A temperature dependent compensation similar to the one above but with selectable temperature source.

Flow control SAF (there are also corresponding menus for EAF)

```
Flow control SAF
Actual: 1800 m3/h
Setp: 2000 m3/h      →
```

Setpoint Flow control. Here, Actual and Setpoint values are displayed. This is a read-only menu. No settings can be made here.

```
Flow control SAF
Setp 1/1: 2000 m3/h
Setp 1/2: 1000 m3/h
```

Submenu Setpoint values for normal speed (1/1) and reduced speed (1/2).

```
Outdoor comp setp
  -15 °C =-200.0 m3/h
   10 °C = 0.0 m3/h
Act comp: 0.0 m3/h→
```

Submenu Outdoor compensation. An outdoor temperature dependent compensation of the pressure setpoint value can be added. The compensation can be set for either the supply air fan alone or for both fans.

```
Comp sens:Room temp1
15    °C = 0     m3/h
20    °C = 0     m3/h
25    °C = 0     m3/h
```

Submenu Extra compensation. A temperature dependent compensation similar to the one above but with selectable temperature source.

Manual frequency control SAF (there are also corresponding menus for EAF)

```
Frequency control
manual SAF
Output: 75%       →
```

Here, Actual and Setpoint values are displayed. This is a read-only menu. No settings can be made here.

```
Frequency control
manual SAF
Output 1/1: 75%
Output 1/2: 50%
```

Submenu Setpoint values for normal speed (1/1) and reduced speed (1/2).

The setpoint is set in % of the full output. 100 % = 10 V output signal.

```
Outdoor comp output
  -20 °C = -40 %
   10 °C = 0 %
Act comp: 0 % →
```

Submenu outdoor compensation. An outdoor temperature dependent compensation of the pressure setpoint value can be added.

The compensation can be set for either the supply air fan alone or for both fans.

```
Comp sens:Room temp1
15    °C = 0      %
20    °C = 0      %
25    °C = 0      %
```

Submenu extra compensation. A temperature dependent compensation similar to the one above but with selectable temperature source.

Frequency control external

```
Frequency Control
manual SAF
Output: 0 %       →
```

For fan control using an external control signal, e.g. via a VAV optimizer.

```
Outdoor comp outp
  -20 °C = -40 %
   10 °C = 0 %
Act comp: 0 % →
```

```
Comp sens:Room temp1
15    °C = 0      %
20    °C = 0      %
25    °C = 0      %
```

```
Controller output
comp if cooling
   0  at R U S= 0 %
100  at R U S= 0 %
```

```
Controller output
comp if heating
   0  at R U S= 0 %
100  at R U S= 0 %
```

```
Controller output
compensation
Not active
```

```
Compensation only
when
1/1-speed : No
defrosting: No
```

Frequency control SAF with EAF slave/flow control (also available for opposite function)

```
Pressure ctrl SAF
Actual: 480 Pa
 Setp.: 490 Pa     →
```

A pressure control where either the SAF or EAF is operated as a slave. This function is also available featuring flow control.

```
Pressure ctrl SAF
Setp 1/1: 500 Pa
Setp 1/2: 250 Pa
```

```
Outdoor comp output
  -20 °C = 0 Pa
   10 °C = 0 Pa
Act comp: 0 Pa →
```

```
Comp sens:Roomtp.1 15
°C = 0    Pa
20   °C = 0     Pa
25   °C = 0     Pa →
```

```
Controller output
comp if cooling
  0  at R U S= 0 %
100  at R U S= 0 %
```

```
Controller output
comp if heating
  0  at R U S= 0 %
100  at R U S= 0 %
```

```
Controller output
compensation
Not active
```

```
Compensation only
when
1/1-speed : No
defrosting: No
```

CO$_2$

```
CO2
Actual:920ppm
Setp:1000pm
```

In applications with varying occupancy, the fan speed can be controlled by the air quality as measured by a CO_2 sensor. CO_2 can be set to function either on Y2, Y4 or both.

Humidity control

This menu is only shown if humidity control has been configured.

Humidity sensor room

```
Humidity room
Actual: 51.9% RH
   Setp: 50.0% RH
```

Humidity control can be configured as either Humidification or Dehumidification or as combined Humidification/Dehumidification.

Humidity sensor duct

```
Humidity duct
    Actual: 72.2% RH
Max limit: 80.0% RH
     Hyst: 20.0% RH
```

A duct humidity sensor is only used for maximum limitation function.

Time settings

General

```
Time/Date
Timer normal speed
Timer reduced speed
Extended running
Timer output1      →
Timer output2      →
Timer output3      →
Timer output4      →
Timer output5      →
Holidays           →
```

Corrigo has a year-base clock function. This means that a week-schedule with holiday periods for a full year can be set.
The clock has an automatic summertime/wintertime change-over.

Individual schedules for each week-day plus a separate holiday setting. Up to 24 individual holiday periods can be configured. A holiday period can be anything from one day up to 365 days. Holiday schedules take precedence over other schedules.

Each day has up to two individual running periods. For two-speed fans and pressure controlled fans there are daily individual schedules for normal speed and reduced speed, each with up to two running periods.

Up to 5 digital outputs can be used as timer controlled outputs. Each with individual week-schedules with two activation periods per day. These outputs can be used to control lighting, door locks etc. Only outputs which have been configured will be shown. Timer output 5 can be used to control a recirculation function.

Time/Date

```
Current time: 18:21
Date: 2016-11-10
Weekday: Monday
```

This menu shows and permits the setting of time and date.

Time is shown in 24-hour format.

Date is shown in the format YY-MM-DD.

Timer Normal speed

```
Normal speed
Monday
Per 1: 07:00 – 16:00
Per 2: 00:00 - 00:00
```

There are 8 separate setting menus, one for each weekday and one extra for holidays.
Holiday schedules take precedence over other schedules.

For 24 hour running, set a period to 0:00 – 24:00.

To inactivate a period, set the time to 00:00 – 00:00. If both periods of a day are set to 0:00 – 0:00, the unit will not run at normal speed that day.

```
Normal speed
Monday
Per.1: 07:00 – 16:00
Per.2: 22:00 - 24:00
```

If you want to run the unit from one day to another, e.g. from Mon 22:00 to Tue 09:00, the desired running time for the various days must be entered individually.

First Mon 22:00 – 24:00....

```
Normal speed
Tuesday
Per.1: 00:00 – 09:00
Per.2: 00:00 - 00:00
```

...then Tue 00:00 – 09:00.

Timer reduced speed

```
Reduced speed
Sunday
Per.1: 10:00 – 16:00
Per.2: 00:00 - 00:00
```

These settings will be ignored if single speed fans are configured.

Should periods for normal speed and periods for reduced speed overlap, normal speed takes precedence.

Structure and function is otherwise identical with Timer Normal speed.

Extended running

```
Extended running
60 min
Time in ext running
0 min
```

Digital inputs can be used to force the unit to start although the timer says the running mode should be "Off".

For 2-speed fans and pressure/flow controlled fans, inputs for normal speed and reduced speed can normally be used.

The unit will run for the set time. If the running time is set to 0 the unit will only run as long as the digital input is closed.

Extra timer outputs 1…5

Up to 5 digital outputs can be used as timer controlled outputs. Only outputs which have been configured will be shown. Each with individual week-schedules with two activation periods per day.

```
Timer output2
Wednesday
Per.1: 05:30 - 08:00
Per.2: 17:00 – 23:00
```

Each timer output has 8 separate setting menus, one for each weekday and one extra for holidays. Holiday schedules take precedence over other schedules.

If the function Recirculation has been configured, Timer output 5 can be used for controlling start/stop of the Recirculation function.

Holidays

```
Holidays (mm:dd)
1: 01-01 - 02-01
2: 09-04 - 12-04
3: 01-05 - 01-05
```

Up to 24 separate holiday periods for a full year can be set.

A holiday period can be any number of consecutive days from one and upwards. The dates are in the format: MM-DD.

When the current date falls within a holiday period, the scheduler will use the settings for the weekday "Holiday".

Access rights

There are four different access levels, **Normal** level which has the lowest access and does not require logging on, **Operator** level, **Service** level and **Admin** level which has the highest access. The choice of access level determines which menus are shown, as well as which parameters can be changed in the displayed menus.

The basic level only permits changes in Running mode and gives read-only access to a limited number of menus.

Operator level gives access to all menus except Configuration.

Service level gives access to all menus except the submenus Configuration/In- and Outputs and Configuration/System.

Admin level gives full read/write access to all settings and parameters in all menus.

```
Log on
Log off
Change password
```

Repeatedly press down-arrow when the start-up display is shown until the arrow-marker to the left of the text-list points to Access rights. Press RIGHT.

Log on

```
Log on
Enter password:****
Actual level: None
```

In this menu it is possible to log on to any access level by entering the appropriate 4-digit code. The log on menu will also be displayed should you try to gain access to a menu or try to do an operation requiring higher authority than you have.

Press the OK button and a cursor marker will appear at the first digit position. Repeatedly press the UP button until the correct digit is displayed. Press the RIGHT button to move to the next position. Repeat the procedure until all four digits are displayed. Then press OK to confirm. After a short while the text on the line: Present level will change to display the new log on level. Press the LEFT button to leave the menu.

Factory set passwords:

Admin: 1111
Service: 2222
Operator: 3333
Normal: 5555

Log off

```
Log off?
No
Actual level:Admin
```

Use this menu to log off from the present level to the basic "no-log on" level.

Automatic logoff

If the access level is Operator, Service or Admin, the user will automatically be logged off to Normal after a settable time of inactivity. The time is settable.

Change password

```
Change password for
level:Operator
New password: ****
```

You can only change the password for access levels lower or equal to the presently active level.

Other functions
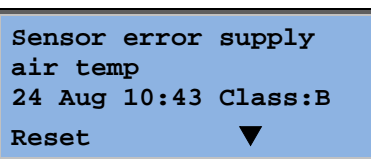
Alarm handling

If an alarm condition occurs, the red alarm LED on the front panel of units with display or the alarm LED on a connected display unit will start flashing. The LED will continue to flash as long as there are unacknowledged alarms.

Alarms are logged in the alarm list. The list shows type of alarm, date and time for the alarm and the alarm class (A, B or C alarm).

To access the alarm list, press the alarm button, the front panel button with the red button-top.

```
Sensor error supply
air temp
24 Aug 10:43 Class:B
Reset            ▼
```

If there are multiple alarms, this is indicated by up / down arrow symbols at the right-hand edge of the display.

Use the UP and DOWN buttons to access the other alarms.

At the left end of the bottom display line the alarm status is shown. For active, unacknowledged alarms the space is blank. Alarms that have been reset will be indicated by the text Acknowledged. Still active or blocked alarms are indicated by the text Acknowledged or Blocked.

Alarms are acknowledged by pressing the OK button. You are then given the choice of acknowledging the alarm or blocking the alarm.

Acknowledged alarms will remain on the alarm list until the alarm input signal resets.

Blocked alarms remain on the alarm list until the alarm has reset and the block has been removed. New alarms of the same type will not be activated as long as the block remains.

Since blocking alarms can be potentially hazardous, you need a high log on authority to block alarms.

Class A and B alarms will activate alarm output(s) if these have been configured.

Class C alarms do not activate the alarm output(s).

Class C alarms are removed from the alarm list when the alarm input resets even if the alarm has not been acknowledged.

Free text

If RIGHT is pressed once when the start menu is shown, a menu is shown in which it is possible to enter any text of your choice. This text can be used to show information concerning the commissioning company, name and phone number to service personnel etc. The easiest way to enter text is to use E tool©, but the buttons can also be used. Up to 4 lines of 20 characters each can be entered.

Revision numbers

If RIGHT is pressed twice when the start menu is shown, a menu is displayed showing the program revision number, its date of release and ID number.

Language

If RIGHT is pressed three times when the start menu is shown, a menu is displayed in which the language can be changed.

The different language files are stored in the application memory and are downloaded to the work memory. If a Corrigo has been reloaded with a program revision newer than the factory revision using E tool©, the controller will not allow language files to be downloaded from the application memory. This is because there is a risk that the language files are not compatible with the new revision. Therefore, you are limited to the two languages you have downloaded using E tool©.

Indication LEDs

Status indication can be found in the upper left corner of the controller. For controllers with display, the alarm indication and change mode LEDs are located in the keypad area.

Status indication

Designation	Colour	Description
Tx	Green	Port 1/2, transmitting
Rx	Green	Port 1/2, receiving
Serv (…Lon models)	Yellow	Service LED LON, commissioning
LAN (…W models)	Yellow/Green	Green: Connected to other network equipment Blinking green: Network traffic Blinking yellow: For identifying
P/B (Power/Battery)	Green/Red	Power on/Battery error
Controllers with built-in display:		
🔔	Red	Alarm indication. Flashing: There are unacknowledged alarms. Fixed: There are alarms which have been acknowledged but where the fault remains.
✏	Yellow	Change mode. Flashing rapidly: The display contains changeable values. Flashing slowly: A password is needed to make changes in the display.

Changing the battery

Corrigo has an internal battery to ensure the operation of the memory and real-time clock in the event of a power failure.
When the alarm "Internal Battery" is activated and the battery LED lights up red, the battery has become too weak and needs to be changed. Nonetheless, due to a backup capacitor, the controller will function at least 10 minutes without power supply.
Since changing the battery requires knowledge of proper ESD protection, as well as dismantling and opening of the unit, this should be handled by skilled service personnel.

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