



CORRIGO E (Ventilation)

Controllers for Air Handling

CORRIGO E is a series intended to control temperature, humidity and pressure in HVAC-applications.

The controllers are user friendly and flexible, and they are also easy to integrate in various applications. The E-models can work stand-alone or be integrated in a network.

- Temperature, pressure and humidity control
- E tool, a powerful configuration tool for PC
- Easy to integrate in an existing installation

- Broad product range
- Different options for communication
- Flexible configuration

CORRIGO E is a complete new range of programmable controllers intended for HVAC control in building facility systems.

The controllers are easy to install and adjust to your specific needs and can be operated in several ways: stand-alone, in a network or by remote control.

CORRIGO E - The easy way to perfect control

CORRIGO E makes all steps from installation to operation and maintenance a whole lot easier. When you choose the right model you know that it is already prepared for your application. Just mount the controller, adjust the pre-installed applications if needed, and start up.

The model program has a logical order, which is helpful when you choose a model for your application. It will also be easier to get the right functionality at the right price.

News compared with the previous CORRIGO C

- E tool configuration tool
- Airflow control
- CO₂ - fan control
- Open for various communication standards
- Broader range of models
- Improved display and easier function handling
- Application files can be stored and reused

Communication

You can easily use CORRIGO E with most other climate products on the market. All models have built in port for communication via a PC. Other standards are available. Read more in the *Corrigo with communication* section overleaf.

E tool

E tool is a PC software that makes it possible to configure and supervise a facility via a graphical interface. Read more in the section *configuration overleaf*.



About CORRIGO E

CORRIGO E has a clear and functional operation panel for easy on the spot operation. All information is viewed as clear text in the illuminated display.

If the controller is intended for installation in a cabinet, it is possible to use a CORRIGO without display connected to an external unit, E-DSP. E-DSP works externally as a remote control.

Display

The Display is illuminated and has 4 rows of 20 characters.



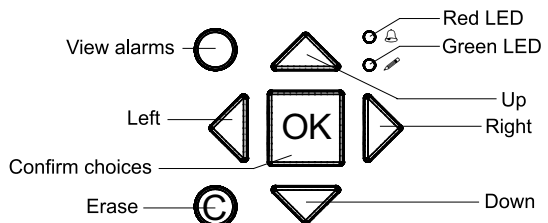
The illumination will normally be off, but is activated when a button is pressed. The illumination will be turned off again after a period of inactivity.

LEDs

- The alarm LED is marked with a bell symbol
- The "write enable" LED is marked with a pencil symbol

Buttons

All functions can be set (configured) by using the display information and the buttons on the controller.



To use CORRIGO E

CORRIGO E is delivered with pre-installed software for a wide range of applications. Before CORRIGO E can be used, the unit has to be configured, all inputs and outputs connected and all parameters set.

Commissioning can be done as follows:

- Directly on the controller panel in “step-for-step-menus”. Operation status, alarms and values are viewed as clear text on the illumination display.
- From CORRIGO E tool, a PC-based commissioning software with a graphical user-interface. When using E tool all settings can be done in a computer and then be down loaded into the CORRIGO controller. An unlimited number of configurations can be saved in the computer, ready to be used later.
- From an external hand terminal (E-DSP)
- By downloading application files from the Internet



Log on

CORRIGO E has three log on levels.

- **System** - gives full read / write access to all settings and parameters in all menus.
- **Operator** - gives read-only access to all settings and parameters and write access to all settings and parameters in all menus except Configuration.
- **Basic level** - permits read-only access to all settings and parameters.



Timer settings

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 summer- winter-time change over. The controllers have individual schedules for each week-day plus a separate holiday setting.

Holiday period

Up to 24 individual holiday periods can be configured. Holiday schedules take precedence over other schedules.

Running periods

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.

Manual control (Hand / Auto-position)

In this menu the running mode of the unit and all the configured outputs can be manually controlled. This is a very handy feature which simplifies the checking of individual functions in the Corrigo.

The supply air controller's output signal can be manually set (Manual/Auto) to any value between 0 and 100%. The temperature output signals will change accordingly if they are in Auto mode. It is also possible to manually control each of the temperature output signals individually.

Alarm

If an alarm condition occurs the Alarm LED on the front panel on units with display 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).

Alarm classifying

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

Menu information

With E tool connected to CORRIGO E you can add free text in the first line of the start-up screen. As an example, you can give the controller an identity. There are also five different menu alternatives for other information.

CORRIGO E also has an information screen where all 4 rows can be used. You can for example display contact information etc.



CORRIGO E with communication

The basic version of CORRIGO E is equipped with an RS485 port for EXOline connection. As an option, the controllers can be delivered with ports for TCP/IP, LON or Modbus communication. This makes it possible to use CORRIGO E in existing networks, and to supervise the application via the Internet or a local computer.

Connection via LAN/Internet gives excellent opportunities for preparing changes, storing settings and supervising functions.

Modbus communication

The basic version of CORRIGO E can be changed to communicate with Modbus via the RS485 port. To activate Modbus communication, you enter an activation code, either in the display of CORRIGO E or by using E tool. The code is ordered from Regin.

Automatic activation of Modbus/EXOline

When Modbus has been activated, CORRIGO E automatically senses if communication is taking place via Modbus or EXOline (with E tool).

Models with LON communication

Models with LON use LonWorks, adjusted according to the LonMark-guidelines. See separate network variable list LON.

LON communicates via the LON port on CORRIGO E. The configuration takes place in the display of the controller or via E tool on a PC connected via the RS485 port on CORRIGO E. CORRIGO E should be installed in the LON network with the help of LonMaker or a corresponding computer program.

Models with TCP/IP communication

Models for TCP/IP communication use the TCP/IP port instead of the RS485 port on CORRIGO E. This communicates with EXOline via TCP/IP. To connect CORRIGO E to a PC and the configuration tool E tool, a special network cable, E-CABLE-TCP/IP, should be used. This is a regular crossover network cable. The RS485 port cannot be used on CORRIGO E with TCP/IP.

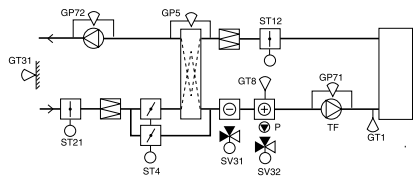
Control & Functionality

Temperature control

The temperature controller is based on a supply air PI-controller with a pre-programmed set of control modes. The controller uses data from sensors etc. to control a number of different control functions, as well as various input and output functions. The choice of which functions to be used is free, the only restriction is the physical number of inputs and outputs of the different models.

CORRIGO E has a choice of the following control modes:

1. Supply air control
2. Outdoor temperature compensated supply air control
3. Cascaded room temperature control
4. Outdoor temperature dependent switching between room control and supply air control.
5. Outdoor temperature dependent switching between exhaust air control and supply air control.
6. Exhaust air control



Applications Heating - Cooling - VVX - Dampers

Controllable output functions in CORRIGO E.

Analogue temperature control

- Water heating
 - Electric heating
 - Heat exchangers
 - Plate exchanger
 - Rotating exchanger
 - Liquid connected heat exchanger
 - Mixing dampers
- Water cooling

Digital temperature control

- Heating / DX-cooling

As alternative or complement to the above mentioned analogue control, heating and cooling can be activated in steps. The internal signal is then used to activate digital outputs for control of the heaters/coolers. Up to four heater outputs and three cooler outputs can be configured.

There are two possible methods:

- Sequential
- Binary

Digital time-switch

Up to 5 digital time-switch outputs can be configured. Each timer channel has a separate scheduler with two periods per week-day.

Support control

When running room temperature control or exhaust air control with a room sensor connected "Support control Heating" or "Support control Cooling" will run.

- Support heating
- Support cooling
- Mixing dampers
- Stopped exhaust fan

Free cooling

This function is used during the summer to cool the building during the night using cool outdoor air.

Cooling recovery

If the exhaust air temperature is a settable amount lower than the outdoor temperature, cooling recovery can be activated.

Heat exchanger efficiency monitoring

Gives an alarm when the efficiency falls below set value.

External setpoint

For connection of external set-point device.

Humidity control

Humidity control can be configured as:

- Humidification
- Dehumidification
- Humidification / Dehumidification

Two humidity sensors can be connected, a room sensor for control and a duct sensor for maximum limiting. The humidity sensors must give 0...10 V DC for 0...100% RH.

Fan control

Fans can be single speed, 2 speed or pressure control via frequency converter. Frequency control uses one analogue output per fan for constant pressure control. There are two setpoints for each fan, Normal and Reduced.

There are three different connection possibilities:

- Crosswise interlock
- Timer control interlock
- Normal, reduced speed

Pressure control

Two analogue output signals are used to control frequency converters. The converters control the fan speed to get constant pressure.

Demand controlled ventilation

In applications with varying occupancy the fan speeds or mixing dampers can be controlled by the air quality as measured by a CO₂/VOC-sensor.

Pump control

- Digital inputs and outputs can be configured for pump control.
- Heating circuit
- Exchanger circuit, liquid connected exchangers
- Cooling circuit

Damper control

Control possibilities

- Closeoff dampers
- Fire dampers
- Damper exercising

Extended running

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

CORRIGO E is easy to install and adapt to your specific needs. The controller fits on a standard DIN rail.

CORRIGO E is also available without display. The idea behind these models is that if you want to mount the controller in a cabinet but want to control it externally, you can use a wall or front mounted terminal E-DSP

N.B.! For more information on models with communication, please contact Regin.

Models

CORRIGO E...

<i>Number of inputs and outputs (I/Os)*</i>	<i>Models with 8 I/Os</i>	<i>Models with 15 I/Os</i>	<i>Models with 28 I/Os</i>
	<i>2 AI, 3 DI, 1 AU, 2 DU</i>	<i>4 AI, 4 DI, 3 AU, 4 DU</i>	<i>4 AI, 4 UI, 8 DI, 5 AU, 7 DU</i>
Basic model	E8-V	E15-V	E28-V
Basic model with display	E8D-V	E15D-V	E28D-V
Model with LON port	E8-V-LON	E15-V-LON	E28-V-LON
Model with LON port and display	E8D-V-LON	E15D-V-LON	E28D-V-LON
Model with TCP/IP port	E8-V-TCP/IP	E15-V-TCP/IP	E28-V-TCP/IP
Model with TCP/IP port and display	E8D-V-TCP/IP	E15D-V-TCP/IP	E28D-V-TCP/IP

* AI=analogue inputs, DI=digital inputs, AU=analogue outputs, DU=digital outputs, UI=universal inputs (can be configured to function as either analogue input or digital input)

External terminal with display

Including 3 m cable	E-DSP-3
Including 10 m cable	E-DSP-10

For CORRIGO E, there is a front mounting kit FMCE available.

This simplifies mounting on for example a panel front. CORRIGO E also fits on a standard DIN rail or into a standard housing.

Technical data

Supply voltage	24 V AC +/- 15%, 50...60 Hz
Power consumption	6 VA
Ambient temperature	0...50°C
Storage temperature	-40...+50°C
Ambient humidity	Max 90%RH
Protection class	IP20 (E-DSP IP44)
Connection	Disconnectable terminal strips, 4 mm ²
Memory backup	Long life battery. All settings are stored in the event of power failure.
Display	Backlit, LCD, four rows of 20 characters
CE	The product conforms with the requirements of European EMC standards CENELEC EN 61000-6-1:2001 and 61000-6-3 and carries the CE-mark

Inputs

Analogue inputs	For Pt1000-sensors (accuracy +/- 0.4°C) or 0...10 V (accuracy +/- 0.15 % of full output)
Digital inputs	For potential free contacts

Outputs

Analogue outputs	0...10 V DC, 1 mA, short-circuit proof
Digital outputs	Triac 24 V AC, 0.5 A (1 A peak)

Indicators

Operation indication	Supply voltage is indicated with green LED
Alarm indication	Clear script and blinking red LED
Alarm output	The output can be configurated

Dimensions

