TROX® TECHNIK
The art of handling air

Commisioning Guide

X-AIRCONTROL **Stand-alone**

- English

ENGLISH

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TROX® TECHNIK
The art of handling air

COMISSIONING X-AIRCONTROL™ Stand-alone

English

Used together, the X-AIRCONTROL Zone Module and the X-AIRCONTROL Room Panel are capable of controlling temperature and ventilation as a stand-alone system. These instructions describe the relatively simple procedure for setting up the system and provide a description of each function in the settings menu.

Product programme

X-AIRCONTROL Analouge
X-AIRCONTROL-Modbus
X-AIRCONTROL-MP-Bus
X-AIRCONTROL CP/2T Room Panel

DESCRIPTION

By combining an X-AIRCONTROL Module with an X-AIRCONTROL Room Panel, temperature and ventilation air flow can be controlled without any communication to a central air handling unit. This can be convenient when, for example, one or more cabins are located away from the main building. The system can be configured directly from the Room Panel touchscreen. Although the Room Panel has a built-in room temperature sensor, additional sensors can be added either to the Zone Module or directly to the Room Panel.

The Zone Module comes in three different variants; all are equally capable, but each is intended for a different VAV communication interface. The X-AIRCONTROL Zone Module Analogue uses mainly 0-10V signals. There are also two digital versions, communicating with Modbus and MP-Bus respectively.
All versions use Modbus to communicate with the Room Panel.

MOUNTING

Mounting the X-AIRCONTROL Zone Module

The X-AIRCONTROL Zone Module is designed to be mounted on a DIN rail. Avoid direct exposure to sunlight. After initial setup, there is no need for physical access to the X-AIRCONTROL Zone Module and the unit can therefore be mounted in concealed locations. Note though that the cable from

the X-AIRCONTROL Zone Module to the Room Panel must not exceed 50 m (164 ft) in length.

Mounting the X-AIRCONTROL Room Panel

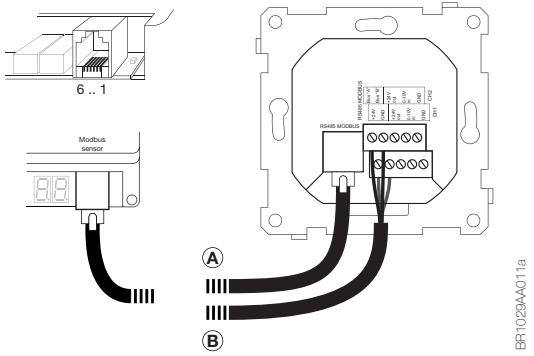
The Room Panel is designed for flush mounting in a hollow wall box. Use a standard EU size flush mounting box with an installa-tion opening of 60 mm. A minimum depth of 22 mm is needed. Do NOT position the Room Panel in direct sunlight or draughts.

CONNECTING

For a description on how to connect various sensors, please refer to the instructions for the X-AIRCONTROL Zone Module concerned.

Connecting the Room Panel

The Room Panel is connected to the Zone Module by means of a Modbus cable (straight, no cross-over).



The Modbus cable can be connected to the Room Panel using the RJ12 6P6C port (A) or the four designated screw terminals (B). As the two +24V and two GND terminals are internally connected, either can be used.

RJ12	Description
1	+24V
2	GND
3	Bus "B"
4	Bus "A"
5	+24V
6	GND

Table 1: RJ12 pins

Connecting sensors to the Room Panel

Two sensors can be connected to the Room Panel. It has two channels with +24V output and 0-10V input.

Sensor	Screw terminal	
CO_2 / VOC	Channel 1	+24V out
		0-10V in
		GND
Humidity	Channel 2	+24V out
		0-10V in
		GND

Table 2: Sensor pins

Channel 1 is reserved for CO_2 / VOC sensors where 0V is equal to 0 ppm and 10V is equal to 2000ppm.

Channel 2 is reserved for humidity sensors where 0V is equal to 0%RH and 10V is equal to 100%RH.

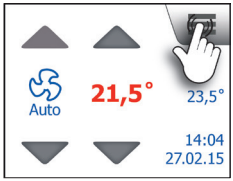
Maximum load for the two channels combined is 200mA.

CONFIGURATION

The system can be configured from the Room Panel.
Make sure that configuration mode is set to Auto (default factory setting). See *Config mode* on page 17 for details on selecting configuration mode. With configuration mode set to Auto, the sys-tem will detect and configure any attached sensor automatically.

Room Panel menus

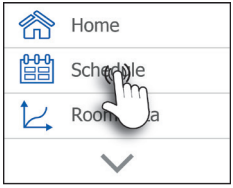
The various menus of the X-AIRCONTROL Room Panel are accessed by tapping the menu icon in the upper right corner of the screen. If the icon is hidden, you can force it into view temporarily by tapping the upper right corner of the screen five times. Most menu items (marked 🔧 in this Commissioning Guide) are protected by a PIN. The PIN is 1234. If the screen saver is active, tap the screen once to access the Home screen.



Home

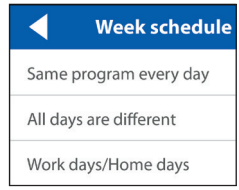
Schedule menu

In the Schedule menu, you can set the required air flow and tem-perature. Tap the *Schedule* button to enter the schedule menu.



Main menu 1

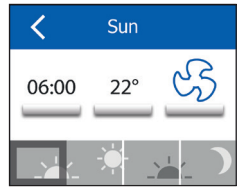
The system offers three different week schedules. In the first, each day of the week has the same program. In the second, each day of the week is programmed individually. In the third, work days and home days can be programmed as two groups of days.



Week schedule selection

It is possible to define work days and home days. As default, Monday, Tuesday, Wednesday, Thursday and Friday are defined as work days while Saturday and Sunday are home days.

In all week schedules, days are divided into four events: morning, work, evening and night.

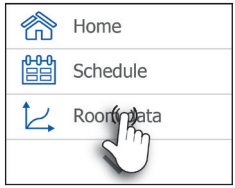


Schedule example

Select the event that you want to set up. Tap the time button to change the start time for this event. Tap the temperature button to change the temperature setpoint. Finally, tap the air flow button to choose the required air flow. Air flow can be set to Off, Low, High or Auto. In Auto, air flow is regulated according to sensor values and setpoints. For details on Low and High settings, see *Air volume* on page 13. Repeat this procedure for each day or group of days.

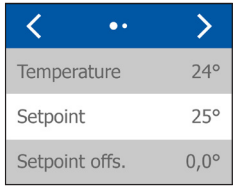
When you have finished setting the schedule, tap the *Left* arrow a couple of times to go back to the main menu.

Room data
In the *Room data* menu, you can see the current sensor readings.



Main menu 1

Use this menu at least once after configuration has been completed to check and validate the installed sensors. Use the *Left* and *Right* arrows to toggle between the multiple screens.

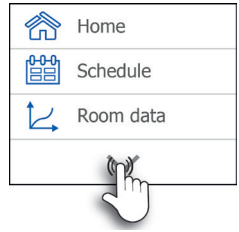


Room data example

Tap the *Left* arrow a couple of times to go back to the main menu.

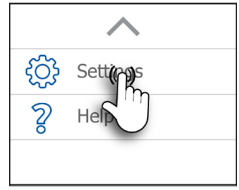
After validating a sensor, switch configuration mode back to Manual. An alarm will then be triggered if the system loses contact with a sensor (see page 21 for more information on alarms).

Settings menu
Tap the *Down* arrow at the bottom of the main menu.



Main menu 1

The second page of the main menu will then appear. Tap the *Settings* button to enter the settings menu.

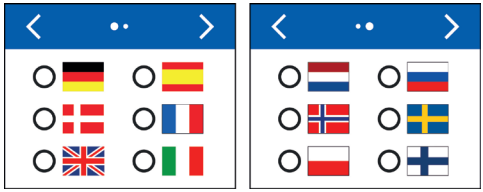


Main menu 2

Language
The language used on the Room Panel screen can be changed by tapping the *Language* button. Note that the flag to the right indicates the language currently selected.

Settings menu 1

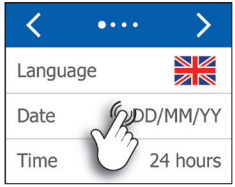
The languages available are shown on multiple screens. You can toggle between the language screens with the *Left* or *Right* arrow.



Language menus 1 & 2

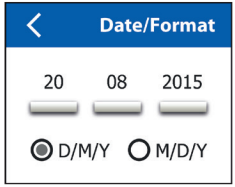
After selecting the desired language, tap the *Left* arrow a couple of times to go back to the main menu. In the main menu, tap *Home* to exit the menu.

Date/Format
Besides adjusting the date, you can also choose how the date is presented on the screen. Tap the *Date* button to change the date.



Settings menu 1

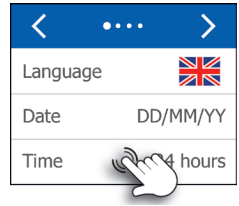
Tap the day, month or year buttons to change the values. The format can be either D/M/Y (day/month/year) or M/D/Y (month/day/year). Tap the desired format.



Date/Format menu

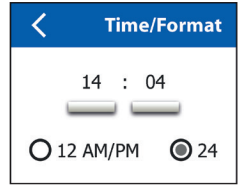
After changing the date, tap the *Left* arrow to go back to the main menu. In the main menu, tap *Home* to exit the menu.

Time/Format
Besides adjusting the time, you can also choose how the time is presented on the screen. Tap the *Time* button to change the time.



Settings menu 1

Tap the hour or minutes button to change the values. The format can be either 12 hours with AM/PM indication or 24 hours. Tap the desired format.

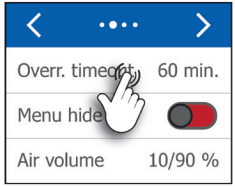


Time/Format menu

After changing the time, tap the *Left* arrow to go back to the main menu. In the main menu, tap *Home* to exit the menu.

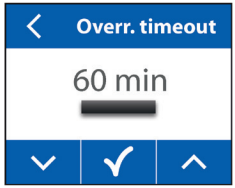
Override timeout

When the schedule is overridden, the system will revert to the schedule after a given time has elapsed. This period of time can be set on the Override timeout screen. Tap the *Overr. timeout* button to adjust the duration.



Settings menu 2

Use the *Up* or *Down* arrows to change the value. Minimum duration is 10 minutes and maximum duration is 90 minutes. Tap the *Accept* button to confirm the chosen time.

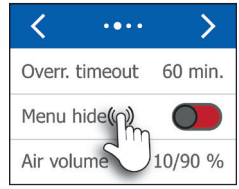


Override timeout menu

After setting the override timeout, tap the *Left* arrow to go back to the settings menu and once more to go back to the main menu. In the main menu, tap *Home* to exit the menu.

Menu hide

The menu icon on the Home screen can be hidden from users by activating the Menu hide function. Tap the *Menu hide* button to change the setting.



Settings menu 2

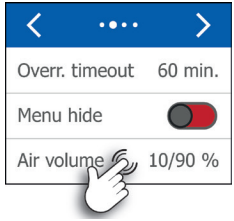
Tap the On/Off button activate/deactivate the function.

Menu hide menu

After choosing the desired setting, tap the *Left* arrow to go back to the settings menu and once more to go back to the main menu. In the main menu, tap *Home* to exit the menu.

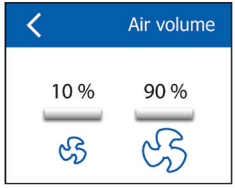
Note: When the menu icon on the Home screen is hidden, it can be temporarily unhidden by tapping the upper right corner five times.

Air volume
Air volume can be set to *Off*, *Low*, *High* or *Auto*. Air volume is adjusted in per cent of VAV damper performance. Low and High air volumes can be manually adjusted by tapping the *Air volume* button.



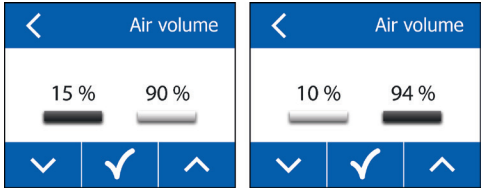
Settings menu 2

Select either Low or High to setting the respective air volumes.



Air volume menu

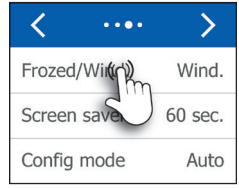
Adjust the air volume by tapping the *Up* or *Down* arrow. Confirm the setting by tapping the *Accept* button.



Air volume low and high

The minimum permissible air volume is 10% and the maximum permissible air volume is 100%. After setting min. and max. air volumes, tap the *Left* arrow to go back to the settings menu and twice more to go back to the main menu. In the main menu, tap *Home* to exit the menu.

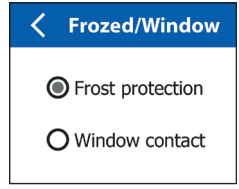
Frost/Window
Terminals 14 and 15 on the Zone Module can be used either for frost protection or as a window open/closed monitor.



Settings menu 3

If Frost is selected and frost is detected, the heating system will be forced to 100% heating.

If Window is selected, heating/cooling will be stopped for as long as the window is detected as being open. If multiple windows are to be monitored, they must be connected in parallel.



FroST/Window menu

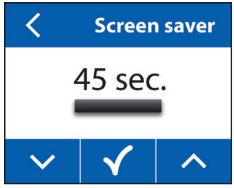
Tap the *Left* arrow to go back to the settings menu and three more times to go back to the main menu. In the main menu, tap *Home* to exit the menu.

Screen saver

After a given time without activity, the display will switch to a black screen displaying only the time and temperature setting. The period of inactivity before the screen saver is activated can be set by tapping the *Screen saver* button.

Settings menu 3

Use the *Up* or *Down* arrow to adjust the length of time before the screen saver starts. The minimum is 10 seconds and the maximum is 60 seconds. To skip changing the screen saver timeout, tap the *Left* arrow without tapping the Accept button. Otherwise, tap the *Accept* button to confirm the new setting.



Screen saver menu

After changing the screen saver timeout, tap the *Left* arrow three times to go back to the main menu. In the main menu, tap *Home* to exit the menu.

Config mode

When Config mode is set to Auto, the system will continuously update the configuration. The system will therefore automatically adapt whenever a sensor is added or removed. The system will also automatically adapt when attached sensors fail. No alarm will thus be triggered as long as the system is able to adapt.

Always set configuration mode to Auto during installation of the OJ GreenZone™ Module system. If configuration mode is set to Manual, tap the *Config mode* button the change the setting.

Settings menu 3

After installation has been completed, set configuration mode back to Manual in order to allow alarms to be displayed if faults should occur.

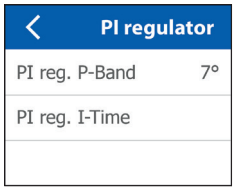
After selecting the desired configuration mode, tap the *Left* arrow to accept your choice. Tap the *Left* arrow three more times to go back to the main menu. In the main menu, tap *Home* to exit the menu.

PI regulator

Regulation is based on a proportional-integral controller. The P-band (measured in delta Kelvin) and the I-time for VAV damper, cooling valve and heating valve can be tuned to fit specific needs. The default settings will suit most systems and should only be changed if absolutely necessary. The regulator values can be adjusted by tapping the *PI regulator* button.

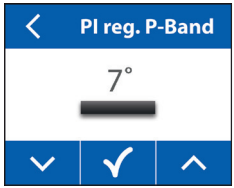
Settings menu 4

Choose either *P-band* or *I-time* by tapping the respective button. The value shown under P-band is the X-AIRCONTROL default value.



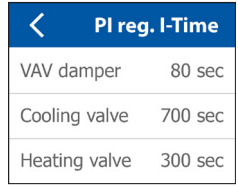
PI regulator menu

The minimum P-band value is 1° Kelvin and the maximum value is 10° Kelvin. Settings can be chosen in steps of 1° Kelvin.

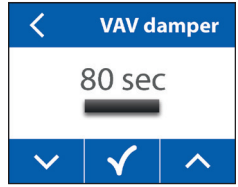


P-Band menu

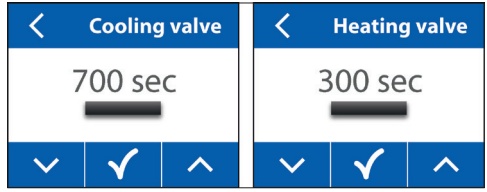
The minimum I-time value is 10 seconds and the maximum value is 999 seconds. Settings can be chosen in steps of 1 second. The values shown below are the X-AIRCONTROL default values.



Regulator menu



VAV damper menu

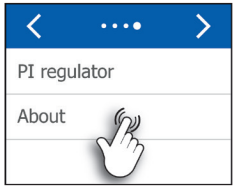


Cooling/heating valve

Tap the *Up* or *Down* arrow to select the required value. Tap the *Accept* button to confirm your choice.

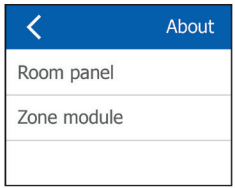
After changing the I-time values, tap the *Left* arrow six times to go back to the main menu. In the main menu, tap *Home* to exit the menu.

About
Tap the *About* button to open the information screen.



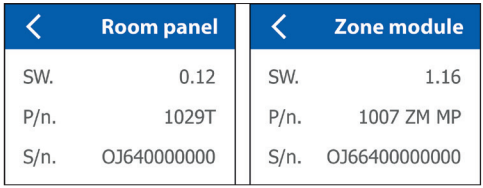
Settings menu 4

Tap either the *Room Panel* or the *Zone Module* button to open the specific information screen.



About menu

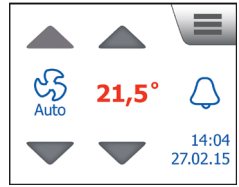
The screens show the software version, part number and serial number for the unit selected.



Part information

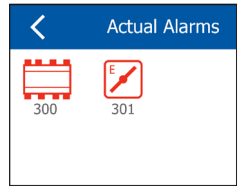
Tap the *Left* arrow six times to go back to the main menu.
In the main menu, tap *Home* to exit the menu.

ALARMS
When an alarm is active, an alarm icon will appear on the right side of the *Home* screen.



Home menu with alarm

To view the cause of the triggered alarm or multiple alarms, tap the alarm bell to access the alarm screens. Components with active alarms will be shown in red. The alarm code will be shown under the component.



Alarm screen example

Use the alarm list below to identify and troubleshoot any alarms that occur. Alarms will automatically disappear when the cause is removed.

To leave the alarm screens, tap the *Left* arrow repeatedly until the *Home* screen appears.

Alarm list
All the alarms listed here are B alarms. The system will continue to operate during B alarms while A alarms will halt the system.

Alarm no.	Description	Troubleshooting
300	X-AIRCONTROL Zone Module disconnected	Check the power supply to the X-AIRCONTROL Zone Module and check the connection to the room panel.
301	Connection fault, VAV exhaust	Check that the VAV exhaust damper is connected to the X-AIRCONTROL Zone Module and is set to address 1.
302	Connection fault, VAV inlet 1	Check that VAV inlet damper 1is connected to X-AIRCONTROL Zone Module and is set to address 2.
303	Connection fault, VAV inlet 2	Check that VAV inlet damper 2 is connected to the X-AIRCONTROL Zone Module and is set to address 3.
304	Connection fault, cooling actuator	Check that the cooling valve is connected to the X-AIRCONTROL Zone Module and is set to address 5.
305	Connection fault, heating actuator	Check that the heating valve is connected to the X-AIRCONTROL Zone Module and is set to address 4.
306	Connection fault, combined heating/ cooling actuator	Check that the heating/cooling valve is connected to the X-AIRCONTROL Zone Module and is set to address 6.
307	Connection fault, window contact/frost protection sensor	Check that the sensor is connected either to a digital input or via a KNX router.
308	Connection fault, PIR sensor	Check that the sensor is connected either to a digital input or via a KNX router.
309	Room temperature sensor removed	Check the room temperature sensor and the signal on either the "Room °C" or the "Modbus Sensor" connector of the X-AIRCONTROL Zone Module.

310	Inlet temperature sensor removed	Check the inlet temperature sensor and the signal on the "Room °C" connector of the X-AIRCONTROL Zone Module (if the room temperature sensor is connected to "Modbus Sensor").
311	Connection fault, setpoint offset sensor	Check the room potentiometer and the signal on terminals 5, 6 and 7 of the X-AIRCONTROL Zone Module.
312	Connection fault, CO2/VOC sensor	Check the CO2/VOC sensor and the signal on either the "CO2" or the "Modbus Sensor" connector of the X-AIRCONTROL Zone Module.
313	Connection fault, humidity sensor	Check the humidity sensor and the connection to the "Modbus Sensor" connector of the X-AIRCONTROL Zone Module.
314	Room temperature sensor short-circuited	Check the room temperature sensor and the connection to the "Room ° C" connector of the X-AIRCONTROL Zone Module.
315	Inlet temperature sensor short-circuited	Check the inlet temperature sensor and the connection to the "Room °C" connector of the X-AIRCONTROL Zone Module (if the room temperature sensor is connected to "Modbus Sensor").
316	Mechanical fault, VAV exhaust	Check VAV damper and actuator.
317	Mechanical fault, VAV inlet 1	Check VAV damper and actuator.
318	Mechanical fault, VAV inlet 2	Check VAV damper and actuator.
319	Mechanical fault, cooling actuator	Check cooling valve and actuator.
320	Mechanical fault, heating actuator	Check heating valve and actuator.
321	Mechanical fault, combined heating/ cooling actuator	Check heating/cooling valve and actuator.
322	Hardware fault, X-AIRCONTROL Zone Module	Replace the X-AIRCONTROL Zone Module.

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