Operating instructions for X2 devices with touch button display

The X2 operating system was designed for universal controllers and sensors. Devices based on the X2 operating system contain a multitude of standardized functions and application possibilities. From simple ventilation controllers for domestic applications to HVAC system solutions for entire buildings. There is a suitable solution for almost every application. With the EasySet program, the controllers can be conveniently read out, programmed and transferred to other controllers.

Content Overview

1   Overview

1.1 Applications

These operating instructions apply to devices of the X2 series with integrated control unit.

In addition, the various product descriptions and the programming instructions for technicians are contained in separate documents. This should facilitate the work with the different controllers and operating levels.

2   Display and Operation

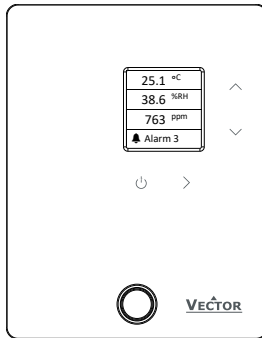## 2.1 User Interface

### 2.1.1 SRD2 series X2 device

Figure 1: SRD2-OPIR

Button Symbol	Function	Description
⏻	Operating mode (Back)	Operating mode selection (On / Off, Occupied / Unoccupied mode) Menu navigation: Back to the previous menu Long press: Off if occupation mode is configured
⟩	Right (Confirm)	Menu navigation: Next menu point Alarms: Confirm the alarm
⋀	Up (+)	Adjust temperature set points and control parameters
⋁	Down (-)	Adjust temperature set points and control parameters

2.2 LCD Display

Overview

This section explains the meaning of the symbols on the LCD Display.

Sample display:
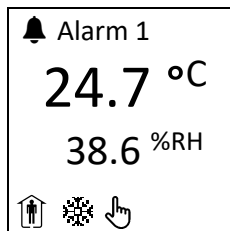
2.3 Operating Modes

Display	Mode	Description
⚐	Occupied (Comfort)	The X2 device maintains the occupied (comfort) temperature set points defined within each control loop. In occupied mode, the fan can be set to auto or manual fan speed.
⌂⚐	Unoccupied (ECO)	The X2 device maintains the unoccupied (ECO, economy) temperature set points defined within each control loop.
⏻	Off / Protection (Holiday)	The X2 device runs in standby. The system is protected against overheating and frost if enabled. Inputs are monitored for alarms.

2.4 Controlling Modes

Display	Mode	Description
❄	Cooling	Cooling mode activates cooling equipment for temperatures above the set point.
♨	Heating	Heating mode activates heater for temperatures below set point.
☝	Manual	Manual override mode
✿	Fan	The side bars show the fan speed.

2.5 Operation Status

Display	Status	Description
🔔	Alarm	Alarm active (see chapter 2.6).
⚠	Error	Error active (see chapter 2.7).
⚙	Settings	The X2 device general setting is active.
LED on / flashing	Normal	Status LED is on or blinks briefly once every 5 seconds.
LED blinking	Alarm / Error	Status LED blinks every second in case there is an alarm or error condition.
☺ or ▭	Special function	The smiley/frame can be used to monitor air quality levels (temperature, CO_2, humidity) See X2 engineering manual section "Display of low, medium and high level" for a detailed description.

2.6 Alarm messages

If an alarm is active, the alarm symbol 🔔 is set and an alarm message is shown on the display.
Some alarms can be confirmed by pressing the "Right" button.

Message	Alarm condition
Alarm 1 Alarm 2 … Alarm 7 Alarm 8	Up to 8 different alarms can be displayed. The alarm condition is programmable and must be defined when configuring the controller. See separate alarm list for the meaning of the programmed alarms. The list is provided by the configurator of the X2 device.

Sample display SRD2:

```
┌─────────────┐
│  25.1  °C   │
├─────────────┤
│  38.6  %RH  │
├─────────────┤
│   763  ppm  │
├─────────────┤
│ 🔔 Alarm 3  │
└─────────────┘
```

```
┌─────────────┐
│ 🔔 Alarm 1  │
│ 1356  ppm   │
│  52.1  %AQI │
│ ⌂⚐ ♨ ☝     │
└─────────────┘
```

2.7 Error messages

If an Error is active, the error symbol ⚠ is set and the Error messages are shown on the display.
Some errors can be confirmed by pressing the "Right" button.

Message	Error condition
Error 1	Communication error between operating terminal and controller
Error 2	Internal error: Firmware version of the memory does not match firmware.
Error 3	Internal error
Error 4	Configuration error: An assigned input is not activated or has failed. Check all settings and ensure that all inputs used are activated and functional.
Error 5	Copy error: Communication error with external memory AEC-PM1 or AEC-PM2. The plug-in module is either damaged or missing.
Error 6	Copy error: Checksums of the data record are incorrect. The data record is invalid.

Sample display SRD2:

25.1 °C
38.6 %RH
763 ppm
⚠ Error 4

⚠ Error 4
1356 ppm
52.1 %AQI
⌂ ⚐ ≋ ☞

2.8 Status LED

Most devices have a status LED. The position of the status LED is defined in the product data sheet.

In normal operation, the LED flashes briefly once every 5 seconds.

In an alarm or error condition, the LED flashes every second.

# 3 General Operation

3.1 Turning the X2 Device On and Off

To turn the X2 device on, press the (⏻) button. Press the (⏻) button again to turn the X2 device off or long press if occupation mode is configured.

ⓘ The system may be configured so that it cannot be turned off.

Note on turning off the X2 device

ⓘ If turned off, the X2 device runs in standby. In standby the system is protected against overheating and frost if enabled.
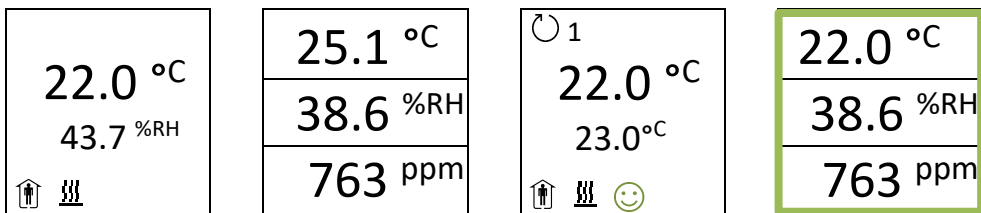
Sample display Off / On:
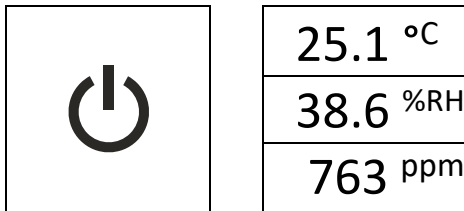
3.2 Idle Display

Overview

This section shows the different idle screens that can be configured with the X2 system.

The configuration of the idle display is explained in the "X2 Engineering Manual" in section "User and display settings".

Samples of idle display: (SRD2)

Display of air quality with a smiley symbol

Display of air quality with a colored frame

## 3.3 Changing Setpoints and Manual Outputs

Overview

This section describes how to change the set point of a control loop and manual outputs.

The large digits show the input value. The small digits show the set point. Loop symbol with number top left show which loop is being displayed. It is possible to omit the display of the current value. In this case the setpoint will be shown on the large digits and nothing is shown on the small digits.

ⓘ The X2 device allows for various ways of user access and display screen configurations. The actual display may differ from the samples below.

Procedure

1. Press the (>), (∧) or (∨) button briefly to go to the first control loop.
   → Input value and setpoint are displayed.
   → Loop symbol indicates control loop (1-4).
   → Bottom line symbols show operating mode and control mode setting of the control loop.
2. Change the setpoint with the (∧) or (∨) button.
   The setpoint is automatically saved after 2 seconds.
3. Press the (>) button to go to the next control loop or manual output.

AO3
52.0 %
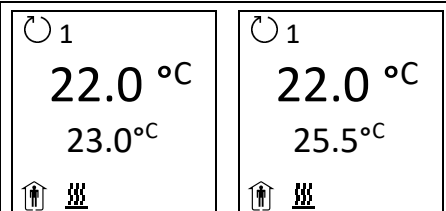
4. Change the manual output with the (∧) or (∨) button.
   The output is automatically saved after 2 seconds.
5. Press the (>) button to go to the next manual output or control loop.

3.4 Manual Controlling Mode

The hand symbol 🖐 is displayed during a pending delay, if a time schedule is overridden or a fan is in manual.

In case a start-up delay is active: - The controller remains switched off and displays the hand symbol until the delay has elapsed. Then the controller switches on and the hand symbol disappears.

3.5 Protection (OFF) Operating Mode

The X2 device runs in protection mode. The system is protected against overheating and frost if enabled. Inputs are monitored for alarms.

3.6 General settings

Overview

This section describes how to set general behaviour of the controller and operation terminal.

Procedure

1. Press the (>) button longer than 5 seconds.
   ➔ Setting screen is displayed.
2. Use the (∨) or (∧) button to navigate and the (>) button to change settings.

   A ↓ indicates that there is more than one page.

⚙	↓	⚙	↑
Unit	°C		
Mode	cool		
Fanonly	Off	Base	V15r0
BL	On	OP	V10r0

3. Press the (⏻) button to go back to the start menu.

3.7 Power Failure

All parameters and set points are memorized and do not need to be re-entered. The switch-on behavior on return of the power supply is set by the technician.

4 Applicationspecific Operation

ⓘ The X2 device allows for various ways of customized operation, user access and display screen configurations.

4.1 Idle Display

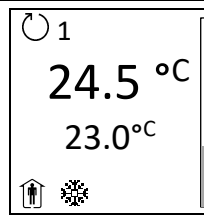The idle display is activated when no key has been pressed for 30 seconds.

ⓘ The idle display can be deactivated by the technician.
If deactivated, the display will remain in the last used window.

4.2 Fan Coil Mode

ⓘ In "Fan Coil Mode" there is just one control loop and one active fan.

Procedure

1. Press the ($>$), ($\wedge$) or ($\vee$) button briefly to go to the control loop. → Input value and setpoint are displayed. → The side bar indicates the actual loop output. 2. Change the setpoint with the ($\wedge$) or ($\vee$) button. The setpoint is automatically saved after 2 seconds.	↻ 1 **24.5** °C 23.0°C ⇡ ❄
3. Press the ($>$) button briefly to go to the fan speed. 4. Press the ($>$), ($\wedge$) or ($\vee$) button briefly to change the fan speed. → The side bar indicates the actual fan speed. The fan speed will alternate between FSP0 -> FSP1 -> FSP2 -> FSP3 -> AUTO –> FSP0 FSP0 may be disabled by settings, the number of available fan speeds may be different.	↻ 1 **24.5** °C FSP1 ⇡ ⚙ 👆
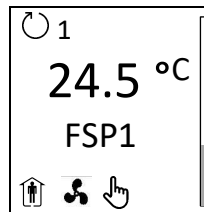
FSPx = FanSpeed 0-3

5 Extended Operating Level

5.1 Heat – Cool – Fan only – Auto selection

Overview

This section describes how to set the controlling mode of the X2 device.

> **i** Depending on the configured application, this submenu can have up to 5 different setting options or is deactivated entirely.

Procedure

<table>
<tr>
<td>1. Press the (>) button longer than 5 seconds.
→ Setting screen is displayed.
2. Use the (∨) or (∧) button to navigate and the (>) button to change settings.

A ↓ indicates that there is more than one page.</td>
<td>

⚙	↓
Unit	°C
Mode	cool
Fanonly	Off
BL	On

</td>
<td>

⚙	↑
Base	V15r0
OP	V10r0

</td>
</tr>
<tr>
<td>3. Press the (∨) or (∧) button to navigate to the **Mode** settings.</td>
<td colspan="2">

⚙	↓
Unit	°C
Mode	cool
Fanonly	Off
BL	On

</td>
</tr>
<tr>
<td>

4. Press the (>) button and select one of the following functions:

❄ = Cooling: (Fanonly = **Off**) Cooling only. The controller stays in cooling mode only and will not switch to heating.

♨ = Heating: (Fanonly = **Off**) Heating only. The controller stays in heating mode only and will not switch to cooling.

Auto = Auto operation: (Fanonly = **Off**) Heating and cooling changes automatically as required.

For function "Fan only cooling" or "Fan only heating" see below.

</td>
<td>

⚙	↓
Unit	°C
Mode	cool
Fanonly	Off
BL	On

⚙	↓
Unit	°C
Mode	auto
Fanonly	Off
BL	On

</td>
<td>

⚙	↓
Unit	°C
Mode	heat
Fanonly	Off
BL	On

</td>
</tr>
<tr>
<td>

5. Press the (∨) or (∧) button to navigate to the **Fanonly** settings.

6. Press the (>) button and select one of the following functions:

Fanonly Off:

❄/♣ = Fan only cooling: (Fanonly = **On** and Mode = **cool**) The controller is in fan-only mode. The fan is controlled according to the controller configuration or setpoint. The cooling output is deactivated.

♨/♣ = Fan only heating: (Fanonly = **On** and Mode = **heat**) The controller is in fan only heating mode. The fan is controlled according to the controller configuration or setpoint. The heating output is deactivated.

For function "Cooling", "Heating" or "Auto" see above.

</td>
<td>

⚙	↓
Unit	°C
Mode	cool
Fanonly	Off
BL	On

⚙	↓
Unit	°C
Mode	cool
Fanonly	On
BL	On

</td>
<td>

⚙	↓
Unit	°C
Mode	heat
Fanonly	On
BL	On

</td>
</tr>
<tr>
<td>7. Press the (⏻) button to go back to the start menu.</td>
<td colspan="2"></td>
</tr>
</table>

5.2 Display Software Version

Overview

This section describes how to display the software version of the installed X2 operating system and the firmware version of the display / operation terminal.

Procedure

1. Press the (〉) button longer than 5 seconds.
   ➔ Setting screen is displayed.
2. Press the (〉) button to go to the end of the list.
 	
   ➔ **Base** and the software version of the X2 system and **OP** and the firmware version of the display / operation terminal are displayed.
	<table><tr><td>⚙</td><td>↓</td><td>⚙</td><td>↑</td></tr><tr><td>Unit</td><td>°C</td><td></td><td></td></tr><tr><td>Mode</td><td>cool</td><td></td><td></td></tr><tr><td>Fanonly</td><td>Off</td><td>Base</td><td>V15r0</td></tr><tr><td>BL</td><td>On</td><td>OP</td><td>V10r0</td></tr></table>

3. Press the (⏻) button to go back to the start menu.	

**Smart Sensors and Controls
Made Easy!**

Quality - Innovation – Partnership

Vector Controls GmbH
Switzerland

info@vectorcontrols.com
www.vectorcontrols.com