

Interact series Flex



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Interact Series - Flex Configuration Guide

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1. What is Interact series Flex?



Interact Series Flex is a customizable version of the Interact Series sensor platform. It combines LoRaWAN® indoor climate sensing, an E-paper display, configurable touch buttons, and a flexible visual interface.

The purpose of Interact Series Flex is to make one hardware platform adaptable to many different applications. Instead of defining the product around one fixed use case, the buttons, display content, and visual behavior can be configured to match the customer's workflow.

Interact Series Flex is suitable when a customer needs a simple local interface for viewing status, changing values, selecting modes, or triggering predefined actions.

2. When is Interact Series Flex a good fit?

Interact Series Flex is a good fit when the application requires a compact, battery-powered LoRaWAN® device with a local display and limited user interaction.

Typical use cases include:

- Room climate display with setpoint adjustment
- Fan speed or ventilation mode selection
- Occupancy or room status selection
- Service request or acknowledgement button
- Mode selector for building automation workflows
- Simple status panel for indoor environments
- Customer-specific interface for a defined process

The product is especially useful when the customer wants the interface to match their own terminology, icons, and workflow without creating a new hardware product.

Interact Series Flex is not intended to replace a complex control panel, touchscreen, or full user terminal. It is best used for applications that can be handled with a small number of touch buttons, clear display states, and predefined interaction logic.

3. Core concept: buttons, values, and visual feedback

The Flex configuration is built around three main parts:

1. **Buttons** — what the user can press
2. **Values** — what the button changes
3. **Display elements** — how the current state is shown

A typical interaction works like this:

User presses a button → A configured value changes → The display updates → The value can be reported over LoRaWAN®

This makes the device useful both as a local user interface and as a source of reported user input.

4. Button functions

The touch buttons can be configured for different functions depending on the application. Each button can be assigned an action that changes a value, switches the interface view, or activates a temporary state.

Available button function types include:

Function type	Description	Example use
Integer increase/decrease	Adjusts a numeric value up or down	Temperature setpoint, level, threshold
Boolean set/toggle	Sets or toggles an on/off state	Occupied/free, enabled/disabled, acknowledged/not acknowledged
Step increase/decrease	Moves through predefined steps	Fan speed, mode selection, status level
View toggle	Switches between display views	Main screen and settings screen
Momentary action	Active only while pressed or held	Boost mode, service request, temporary override

The same physical buttons can be configured differently for different customers or applications.

5. Interaction options

Interact Series Flex supports several interaction patterns. These make it possible to create a more flexible interface while still using a small number of buttons.

5.2 Single-button actions

A button can be configured to perform one clear action, such as increasing a value, toggling a state, or changing a mode.

Example:

- Top button: increase setpoint
- Middle button: decrease setpoint
- Bottom button: change view

5.3 Multiple functions

A button can be configured to affect more than one part of the interface. This can be used when one button press should update both a value and the visual state shown on the display.

5.4 Views

The device can support more than one interface view. A view can be used to separate different parts of the user experience.

Example:

View	Purpose
View 1	Show climate data and allow setpoint adjustment
View 2	Show fan mode and allow mode selection

This allows the same buttons to have different meanings depending on the active view.

5.5 Hold actions

A function can require the user to hold a button before the action is triggered. This is useful for actions that should be protected from accidental presses.

Example uses:

- Confirm request
- Reset value
- Activate temporary mode
- Change to another view

5.6 Multi-button actions

A function can be assigned to a combination of buttons pressed at the same time. This can be used for special actions that should be separated from normal operation.

Example uses:

- Confirm an important action
- Activate a hidden or secondary function
- Reset a state
- Trigger a special request

Image clarification needed:

Add a simple illustration of three buttons with examples such as "Increase," "Decrease," and "Change view," plus one example showing a two-button combination.

6. Button-controlled values

The buttons control a small set of generic value types. These value types are flexible and can be interpreted differently depending on the customer application.

Value type	Description	Example
Integer	A numeric value within a configured range	21 °C setpoint, level 50, threshold 100
Boolean	A true/false or on/off state	On/off, occupied/free, open/closed
Step	A selected step in a predefined sequence	Fan speed 1–5, mode 1–4
View	The currently selected interface view	Main view or secondary view
Momentary	A temporary active state	Boost active while held

These values can be shown on the display and, if configured, included in LoRaWAN® reporting.

7. Design possibilities

The display interface is built from configurable visual elements. These elements can be used to create a simple interface that fits the customer's use case.

The display can be designed to look like a simple controller, a status screen, a selector, a service request panel, or another application-specific interface.

The interface should be designed for clear, simple interaction. Since the display area and number of buttons are limited, the best designs use short labels, recognizable icons, and a small number of clear states.

Image clarification needed:

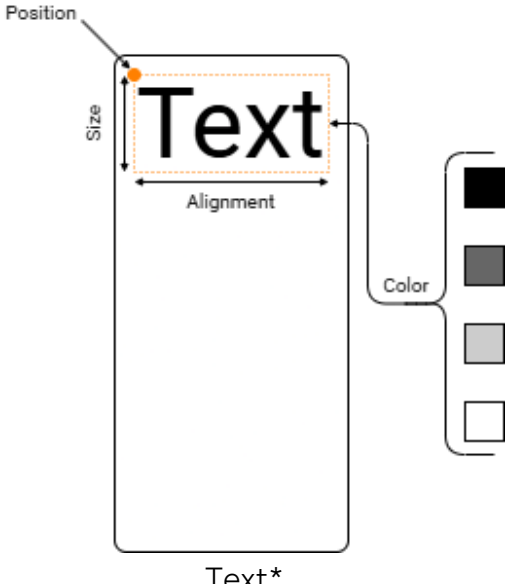
Add 2–3 example mockups:

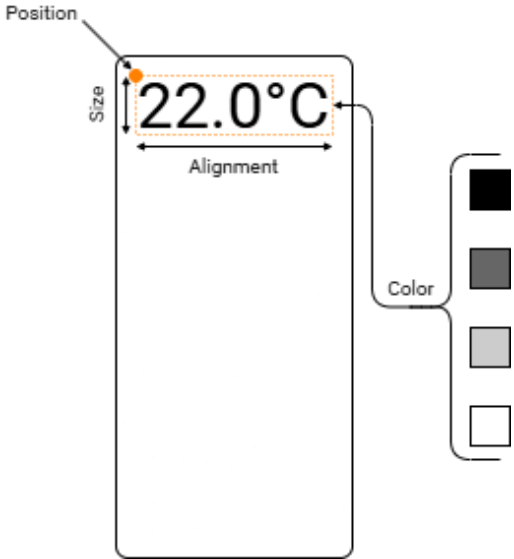
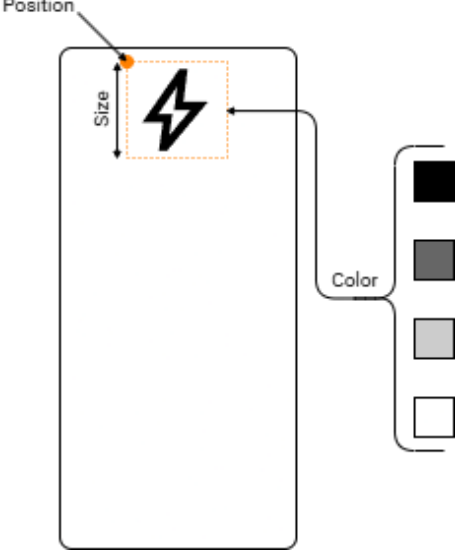
1. Setpoint adjustment screen
2. Fan speed selector
3. Occupancy/status or service request screen

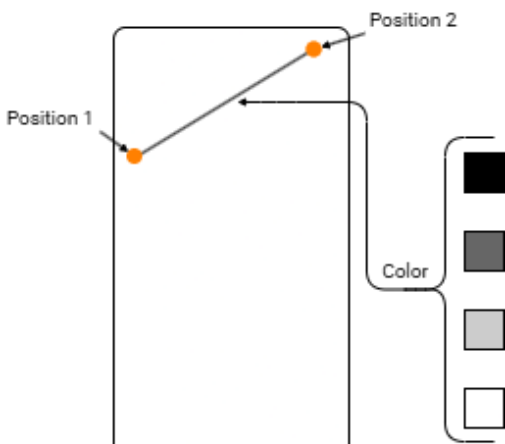
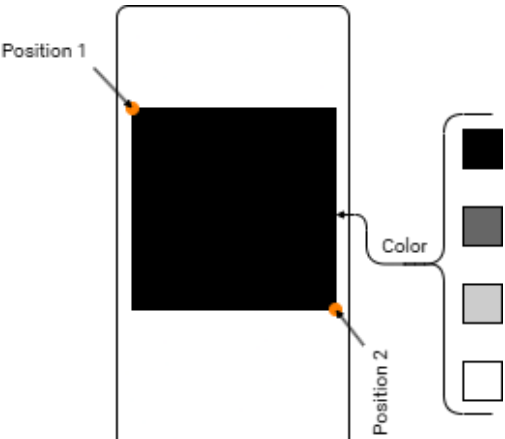
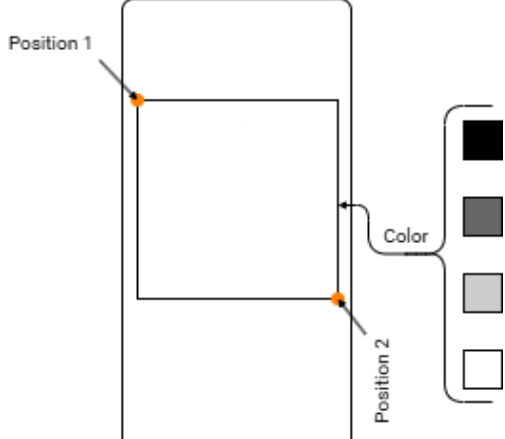
8. Available display elements

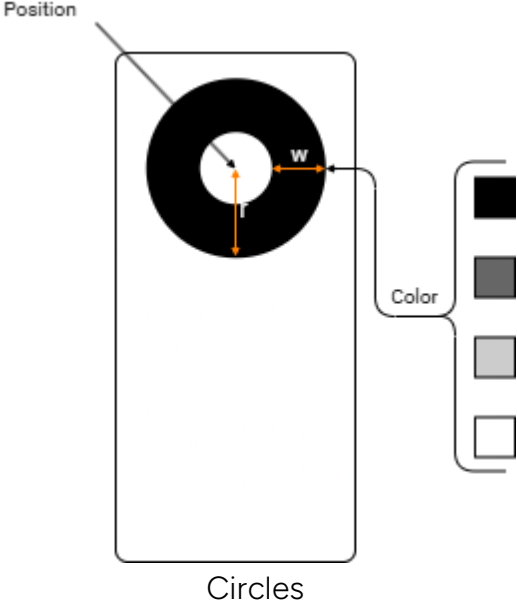
The Flex interface is built from configurable display elements. These elements are used to create the visual layout shown on the E-paper display. By combining text, icons, values, and simple shapes, the interface can be adapted to different customer applications while keeping the layout clear and easy to understand.

Available display elements include:

Display element	Description	Typical use
 <p>The diagram shows a rectangular box containing the word "Text". An orange dot at the top-left corner is labeled "Position". A vertical double-headed arrow on the left side is labeled "Size". A horizontal double-headed arrow at the bottom is labeled "Alignment". To the right of the box is a "Color" selector with four colored squares: black, dark grey, light grey, and white.</p> <p>Text*</p>	<p>Static text labels or descriptions</p>	<p>Headings, instructions, button labels, status text</p>

 <p>Position</p> <p>Size</p> <p>22.0°C</p> <p>Alignment</p> <p>Color</p> <p>Sensor values</p>	<p>Automatically updated sensor information</p>	<p>Temperature, humidity, or other model-dependent values</p>
 <p>Position</p> <p>Size</p> <p>Color</p> <p>Icons**</p>	<p>Predefined symbols used to communicate status or function</p>	<p>Heating, cooling, fan, warning, checkmark, arrows</p>

 <p>Position 1</p> <p>Position 2</p> <p>Color</p> <p>Lines</p>	<p>Simple line elements</p>	<p>Dividers, separators, layout structure</p>
 <p>Position 1</p> <p>Position 2</p> <p>Color</p> <p>Rectangles</p>	<p>Outlined rectangular areas</p>	<p>Frames, value boxes, button areas</p>
 <p>Position 1</p> <p>Position 2</p> <p>Color</p> <p>Filled rectangles</p>	<p>Solid rectangular areas</p>	<p>Highlights, selected states, status fields</p>

 <p>Circles</p>	<p>Circular visual elements</p>	<p>Indicators, markers, simple graphical emphasis</p>
<p>Reactive value text</p>	<p>Text that displays a button-controlled value</p>	<p>Setpoint, level, selected number</p>
<p>Reactive elements</p>	<p>Elements that change depending on button-controlled values</p>	<p>On/off indicators, selected mode, temporary status messages</p>

These elements can be combined to create application-specific interfaces such as setpoint displays, fan mode selectors, occupancy panels, status screens, or service request interfaces.

For best readability, Flex interfaces should use short text, and a limited number of visual states. The display is most effective when it communicates one main purpose at a time, rather than trying to show a complex menu or large amount of information.

* See Appendix A for available characters

** See Appendix B for available Icons

9. Reactive display behavior

The display can react when the user changes a button-controlled value. This helps the user immediately understand what has changed.

Examples:

Button-controlled value	Display behavior
Boolean	Show different icon/text for On and Off
Step	Highlight the selected mode or show a matching icon
Integer	Update the displayed numeric value
Momentary	Show a temporary message or icon while active
View	Change to another screen layout

For example, a fan control interface could show different labels and icons for "Off," "Low," "Medium," and "High." A room status interface could switch between "Available," "Occupied," and "Cleaning." A request button could show a temporary confirmation message when activated.

Reactive display behavior is one of the main strengths of Interact Series Flex. It allows the same device to feel application-specific without requiring custom hardware.

10. Downlink UI updates

The visual interface can be updated using downlinks. This means that the interface can be changed after production or after installation, depending on the customer configuration and deployment process.

Downlink UI updates may be used to:

- Change display text
- Update icons or visual states
- Enable or disable interface elements
- Change which view is shown
- Update reactive visual behavior
- Save updated interface configuration
- Reset the interface to a known state

This allows the customer interface to evolve over time. For example, wording can be adjusted, icons can be changed, or a layout can be adapted after feedback from users.

10.1 Displaying dynamic data

The downlink update capability can also be used to display dynamic or customer-specific information. Each time the sensor sends an uplink, a downlink window is opened. This window can be used to send updated display information back to the device.

This makes it possible to show semi-real-time values or information from external systems on the display. For example, customers can use this feature to display tenant-specific data such as water usage or electricity usage in apartment buildings.

The same functionality can also be used for personalization. For example, the display can be updated with a room ID, apartment number, tenant reference, location name, or other customer-specific text.

This makes the interface useful not only for local sensor data and button-controlled values, but also for selected information from the customer's own environment.

11. Configuration boundaries and limitations

Interact Series Flex is highly adaptable, but it is important to understand the boundaries of the product.

The product is well suited for:

- A small number of clear user actions
- Simple local control or selection
- Displaying current values and states
- Application-specific labels, icons, and status messages
- Interfaces that can be described using predefined buttons and visual elements

The product is less suitable for:

- Complex menu systems
- Large amounts of text
- Frequent real-time screen updates
- Touchscreen-like interaction
- Applications requiring free-form user input
- Interfaces with many simultaneous choices
- Advanced graphics or animations

A good Flex application should be easy to explain in one sentence, such as:

- "The user selects a fan speed."
- "The user adjusts a room setpoint."
- "The user marks a room as occupied or available."
- "The user sends a service request."
- "The display shows climate data and the selected operating mode."

12. Example application concepts

12.1 Climate setpoint interface

The display shows current temperature, humidity, and a selected setpoint. Two buttons increase or decrease the setpoint, and one button may switch to another view.

Best suited for:

- Room climate applications
- Tenant comfort adjustment
- Building automation input

12.2 Fan or ventilation mode selector

The display shows the current fan or ventilation mode. Buttons step between modes such as Off, Low, Medium, and High.

Best suited for:

- Ventilation control
- Room mode selection
- Simple speed or level selection

12.3 Occupancy or room status panel

The display shows a room state such as Available, Occupied, Cleaning, or Service needed. Buttons allow the user to change the state.

Best suited for:

- Offices
- Meeting rooms
- Hotels
- Shared facilities

12.4 Service request interface

The display shows a request option and confirmation state. A button press or hold can activate a request, and the display can show that the request has been registered.

Best suited for:

- Facility management
- Maintenance request
- Cleaning request
- Assistance call

13. How to decide if Flex is applicable

Interact Series Flex is applicable when the customer can answer “yes” to most of the following questions:

- Does the user need to view simple information locally?
- Does the user need to change or select one or more predefined values?
- Can the interaction be handled with a few touch buttons?
- Can the interface be represented with text, icons, shapes, and simple states?
- Is LoRaWAN® reporting of the selected values useful?
- Would the customer benefit from adapting the interface without changing hardware?

If the application requires a simple, configurable interaction point with local feedback and LoRaWAN® reporting, Interact Series Flex is likely a good fit.

If the application requires complex navigation, frequent display updates, detailed graphics, or free-form input, another type of interface may be more suitable.

14. Summary

Interact Series Flex is a customizable LoRaWAN® sensor and interface platform for applications that need local display, simple user input, and adaptable visual feedback.

It allows customers to define:

- What the buttons do
- Which values the buttons control
- How those values are shown on the display
- Which visual elements react to user input
- How the interface can be updated after deployment

The result is a flexible product that can be adapted to many customer-specific workflows while staying within a simple and robust interaction model.

Document Version History

Version	Date	Comment
1.0	DD-MM-YYYY	First version

Appendix A – Available Text Characters

Firmware Version 3.5.0

Numbers:

1234567890

Capital letters:

ABCDEFGHIJKLMNOPQRSTUVWXYZÅÄÖÉÀ

Lower case letters:

abcdefghijklmnopqrstuvwxyzåäöéà

Symbols:

[space]+/.-_,°%?!:\@()

Appendix B – Available Icons

Firmware Version 3.5.0

