



Operating manual TELIS 9000

Version of 03/30/2023



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Technical characteristics

Universal input



Universal power supply



Hot-swappable plug in and out



Sensor power supply



ModBus RTU

Presentation

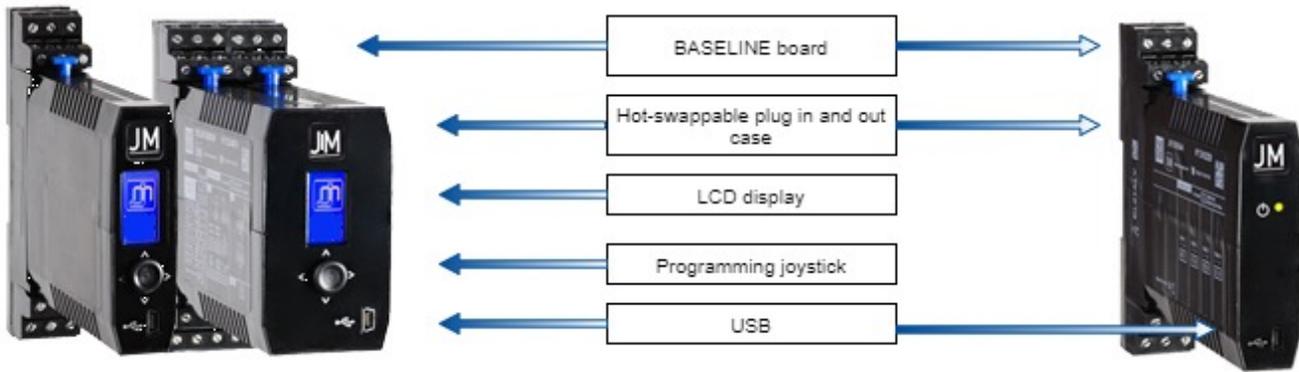
TELIS 9000 is a universal input transmitter with quadruple galvanic isolation, 24-bit conversion for inputs and 16-bit conversion for outputs, and accurate cold junction compensation at $\pm 1^\circ\text{C}$ for thermocouple inputs.

TELIS 9000 is guaranteed for **5 years**

Range

*: 1 universal input or 2 current passive mA inputs with calculation mode

| Transmitter with graphic display | Input* | Outputs | | | | | | Communication | Case width (mm) | | Transmitter without graphic display |
|----------------------------------|--------|------------------|---|-----------------|---|---|---|---------------|-----------------|------|-------------------------------------|
| | | Number of Analog | | Number of Relay | | | | | RS485 USB | 22.5 | |
| | | 1 | 2 | 1 | 2 | 3 | 4 | | | | |
| TELIS 9000U0 | ✓ | | | | | | | ✓ | ✓ | | TELIS 9000T0 |
| TELIS 9000U1 | ✓ | ✓ | | | | | | ✓ | ✓ | | TELIS 9000T1 |
| TELIS 9000U2 | ✓ | | ✓ | | | | | ✓ | ✓ | | TELIS 9000T2 |
| TELIS 9100U0 | ✓ | | | ✓ | | | | ✓ | ✓ | | TELIS 9100T0 |
| TELIS 9150U1 | ✓ | ✓ | | ✓ | | | | ✓ | ✓ | | TELIS 9150T1 |
| TELIS 9250U0 | ✓ | | | | ✓ | | | ✓ | ✓ | | TELIS 9250T0 |
| TELIS 9200U0 | ✓ | | | | ✓ | | | ✓ | | ✓ | TELIS 9200T0 |
| TELIS 9200U1 | ✓ | ✓ | | | ✓ | | | ✓ | | ✓ | TELIS 9200T1 |
| TELIS 9200U2 | ✓ | | ✓ | | ✓ | | | ✓ | | ✓ | TELIS 9200T2 |
| TELIS 9300U0 | ✓ | | | | | ✓ | | ✓ | | ✓ | TELIS 9300T0 |
| TELIS 9300U1 | ✓ | ✓ | | | | ✓ | | ✓ | | ✓ | TELIS 9300T1 |
| TELIS 9400U0 | ✓ | | | | | | ✓ | ✓ | | ✓ | TELIS 9400T0 |
| TELIS 9400U1 | ✓ | ✓ | | | | | ✓ | ✓ | | ✓ | TELIS 9400T1 |
| TELIS 9400U2 | ✓ | | ✓ | | | | ✓ | ✓ | | ✓ | TELIS 9400T2 |



Factory settings

| Input | Output 1 & 2 | Relays (1 RT or 1T) |
|----------------|--------------|---------------------|
| 4-20mA | 4-20mA | Alarm: High |
| Display: 0-100 | | Threshold: 50 |

Communication speed: 9600 bauds, Slave address: n°1

Other settings on demand

Inputs - Outputs

Input gauges

| | |
|---------------------------------|---|
| Current (continuous) | Standard scales: 0-1mA ; 0-10mA ; 0-20mA ; 4-20mA ; ±1mA ; ±10mA ; ±20mA Adjustable scales: from -22 to 22mA |
| Voltage (continuous) | Standard scales: 0-100mV ; 0-1V ; 0-5V ; 1-5V ; 0-10V ; 2-10V ; ±100mV ; ±1V ; ±5V ; ±10V Standard scales: 0-50V ; 0-100V ; 0-200V ; 0-500V ; 0-1000V ; ±50V ; ±100V ; ±200V ; ±500V ; ±1000V Adjustable scales: From -110 to 110mV, from -2 to 11V Adjustable scales: From -1000 to 1000V |
| Variable resistance thermometer | Standard scales: CU50 ; CU53 ; CU100 PT10 ; PT100 ; PT1000 ; Ni100 ; Ni1000 2 or 3 wires Adjustable scales: CU50 ; CU53 ; CU100 PT10 ; PT100 ; PT1000 ; Ni100 ; Ni1000 2 or 3 wires |
| Resistance 2 wires | Standard scales: 200Ω ; 1KΩ ; 10KΩ ; 50KΩ |
| Special table for NTC PTC | Adjustable scales: 200Ω ; 1KΩ ; 10KΩ ; 50KΩ Programmable with IXLOG software Unit: °C or °F |
| Thermocouple | Standard scales: J, K, R, S, T, E, B, N, W3/D, W5/C, Mo, P Adjustable scales: J, K, R, S, T, E, B, N, W3/D, W5/C, Mo, P Unit: °C or °F Cold junction compensation: internal or external |
| Potentiometer | From 0-100Ω to 0-100KΩ Other values on request |
| Sensor supply | 2 or 3 wires sensor 24V - 32mA max Only in 1 channel input mode |

Output gauges

| | |
|----------------------|---|
| Output Current 1 & 2 | Standard scales: 0-10mA ; 0-20mA ; 4-20mA Adjustable scales: from 0 to 20mA |
| Output Voltage 1 | Standard scales: 0-10V ; ±10V (except TELIS 9150X1 and TELIS 9300X1) ; 0-5V ; 1-5V ; 2-10V Adjustable scales: from -10 to 10V (except TELIS 9150X1 and TELIS 9300X1) |
| Output Voltage 2 | Standard scales: 0-5V ; 1-5V ; 2-10V ; 0-10V Adjustable scales: from 0 à 10V |
| Output Relay | Relay 1RT or 1T: 2A-250Vac |
| Communication | Isolated USB in Front Panel / Isolated RS485 Modbus RTU |

Characteristics

| | |
|---|------------------------------------|
| Display | |
| Type | Backlit LCD |
| Color | Blue |
| Number of characters | 5 |
| Numbers of lines | 5 |
| Programming joystick | 5 positions |
| Input characteristics | |
| Current input impedance | 5.6Ω |
| Voltage input impedance | U<10V: >10MΩ U±10V ou >10V: 6MΩ |
| Current input PT100 ; Ni100 | Current: <1mA |
| Current input PT1000 ; Ni1000 | Current: <0.8mA |
| Current input resistance 2 wires R=200Ω ; R=1kΩ | Current: <1mA |
| Current input resistance 2 wires R=10kΩ | Current: <0.2mA |
| Output characteristics | |
| Permissible impedance on the current output | Output 1 & 2: <1kΩ |
| Permissible impedance on the voltage output | Output 1 & 2: >1kΩ |
| Isolation | |
| Supply / Input-Output(s)-Relay- RS485-USB | 4200Vrms, 50Hz, 1mn |
| Input / Output 1 / Output 2 / Relay / RS485 | 2500Vrms, 50Hz, 1mn |
| USB / Input | 2500Vrms, 50Hz, 1mn |
| USB / Output 2 | Without |
| USB / Output 1-relay | 2500Vrms, 50Hz, 1mn |
| USB / RS485 | 2500Vrms, 50Hz, 1mn |
| Auxiliary source | |
| Voltage supply | 22-240Vdc or 90-230Vac 50/60Hz |

| General characteristics | |
|------------------------------------|---|
| Precision class | 0.1 |
| Input analog / digital conversion | 24 bits |
| Output analog / digital conversion | 16 bits |
| Response time | Process input, Thermocouple, 2 wires resistor: <80ms RTD potentiometer: <160ms |
| Thermal drift | <25ppm |
| Residual ripple on current output | <20µA |
| Residual ripple on voltage output | <10mV |
| Maximum of consumption | <10VA |
| Operating temperature | -10°C ... +60°C |
| Storage temperature | -25°C ... +80°C |
| Protection factor | IP20 Black self-extinguishing polyamide housing V0 |

Options listing

| Option | Device code |
|--|--|
| Tropicalization for 22,5mm or 45mm cases | TELIS 9XXXXX-T |
| Auxiliary source 22-60Vac | TELIS 9XX9XX |
| Passive output only on the calibre 4-20mA | TELIS 9XXXXX-PAS11 (output 1 passive) |
| Permissible voltage on the passive output: | TELIS 9XXXXX-PAS12 (output 2 passive) |
| 15V<U<36V | TELIS 9XXXXX-PAS22 (2 passive outputs) |

Functions

| | |
|--------------------------|---|
| Display functions | |
| LCD display | Graphic display by LCD screen |
| LED indicators | 1 green LED on devices without display |
| 5 positions joystick | Allows you to configure the parameters displayed on the front panel screen |
| Programming lock | Locking of the programming on the front panel or by the IXLOG software Unlock by long press on the joystick |
| Programming | Programming via joystick on the front panel, or via USB with IXLOG software |
| Memory Mini / Maxi | Storage of the maximum and minimum value of the measurement on each input channel |
| Customizing the display | Resolution, Comma, Contrast adjustment, Display off |
| Input | |
| Inputs display | The display allows to visualize the input in physical value and in programmed value |
| Adjustable input scale | Allows to zoom on the input either in manual or automatic mode |
| Offset | Manual adjustment of the input offset |
| Taring | Taring function at process input (by validation) |
| Cut-off | Threshold below which the input is considered as null |

| Smart functions | |
|---------------------------------------|--|
| Sensor signal loss | <p>Translates the sensor signal loss on:</p> <ul style="list-style-type: none"> • the display, • each of the analog outputs, • the digital output, • the status of the relays |
| Filtering | Integration of the measurement over the defined time (in seconds) |
| Calculation mode | Rule calculation (+, -, x, /), result on input 3 |
| Square root | The output(s) are function of the square root of the input |
| Absolute value | The output(s) are a function of the absolute value of a bidirectional input |
| Pilot function/simulation | <p>The pilot function makes it possible to act on the display value influencing the output(s), independently of the input</p> <p>The Pilot function is activated either by the digital link (RS485 or USB) or by the joystick on the front panel</p> |
| Segmentation in 99 points | Linearization in 99 points (free choice for each point), allows to create an output function by segmentation of the signal of each input channel |
| Segmentation PTC-NTC resistive | Allows to create the PTC or NTC curve by segmentation of the input signal (programmable only by the IXLOG software) |
| CJC | Cold junction compensation by 16 bit digital sensor |
| Outputs | |
| Visualization of the outputs | The display allows to visualize the outputs, in physical value and percentage; as well as the status of the relays |
| Output assignment | Assignment of outputs to inputs or to the control function, independently for each channel |
| Adjustable output scale | Allows you to zoom in on the outputs |
| Output limitation | Possibility to limit the value of the outputs - High limit and Low limit |
| Relay assignment | Assignment of relays to inputs or to the control function, independently for each channel |
| Thresholds | <p>Single or band mode, with positive or negative safety</p> <p>Adjustment of thresholds, hysteresis and time delay (independent on rise or fall)</p> <p>Direct access to the thresholds</p> |
| Acknowledgement of alarms | Independently for each alarm |
| Storage of alarms and/or relay status | Independently for each alarm |

| Links and communication | |
|-----------------------------|--|
| RS485 MODBUS RTU | RS485 MODBUS RTU bidirectional digital link allowing to: <ul style="list-style-type: none">• recover the measurements and transmit them in digital format• configure and control the device |
| Digital bus | Access to the digital bus via the USB socket (when transmitters are used on the interface boards) |
| USB front | USB front panel to connect directly to the USB port of a PC for programming via the IXLOG software |
| Mapping of Modbus addresses | Mapping of Modbus addresses, allowing you to choose your own variable address |

Safety precautions

Introduction

To ensure the conditions of quality, precision and safety, the user must carefully read and comply with the rules of assembly and operation indicated in this manual.

Safety

Qualification of staff

This manual must be read by qualified and authorized personnel in charge of installation, operation, maintenance and cleaning.

Symbols on the product

| | |
|---|---|
|  | Triangle with exclamation mark: Read this user manual before operating the equipment to know the nature of the potential HAZARDS and all the measures to be taken to avoid them |
|  | Double insulation symbol: Equipment protected everywhere by DOUBLE INSULATION |
|  | CE symbol: indicates that the module complies with the requirements of the CE directives |

General safety measures

If the commissioning of the equipment differs from that described by the manufacturer, the protection provided by the equipment may be impaired. Do not turn on the module under high Voltages until it is fixed.

 Any installation that does not correspond to the installation requirements will void the warranty. Any opening of the product will immediately void the warranty.

 If a high voltage is connected to the inputs/outputs of the device, respect sufficient insulation between the wires, terminal blocks and the housing with the surrounding environment to maintain protection against electric shock.

 Handling and maintenance operations must be carried out only by qualified and authorized personnel.

Receipt and storage of the product

Upon receipt of the device, check that it has not been damaged during transportation

It must be stored in its packaging in a room protected from dust, moisture, and mechanical vibration.

The storage temperature must be between -25°C and 80°C

Maintenance and Repair

To clean any marking on the device, switch off the device and then use a cloth slightly moistened with distilled water.

If a device can no longer be used under optimal safety conditions, it must be taken out of service and protected against inadvertent use, then returned to JM Concept.



- Never open the case
- Repairs are only to be carried on JM Concept's premises.

Operating environment

The product must be installed and used indoors, in an electrical box.

It must not be exposed to temperatures outside the limits prescribed for ambient temperatures (-10°C ... +60°C).

The product is not intended to operate at altitudes higher than 2000m.

It can be installed in an environment of pollution degree 2 and withstand transient surges of the power supply network of Category II.

It can withstand grid fluctuations of +/-10% on its voltage supply. The product is designed for a temporary voltage level between phase and earth according to EN/IEC61010.

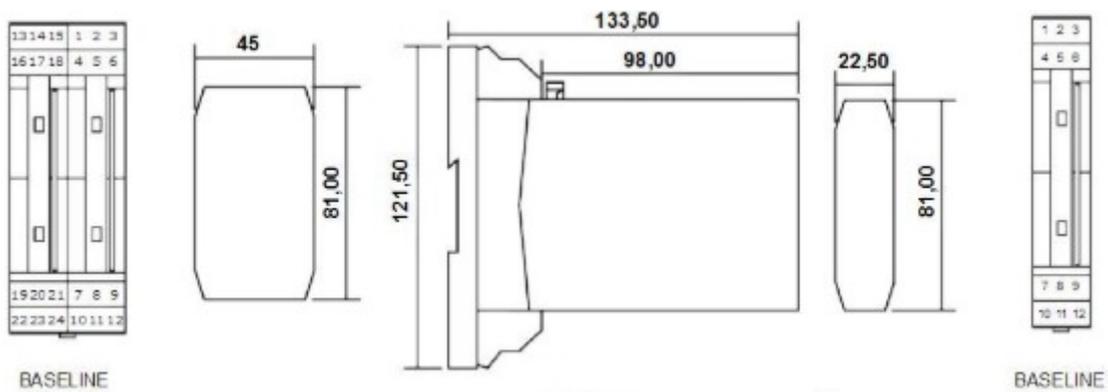
The circuits for measurements, inputs, and outputs are meant for connection to SELV (Safety extra low voltage) circuits only: 60Vdc max / 42.4V peak max / 30Vrms max).

The insulation level of external circuits plugged into the inputs and outputs should be of **2500Vrms** in order to maintain the existing insulation in the device between the different interfaces.

Since the bottom of the product enclosure has openings, it is not considered a fireproof enclosure.

Dimensions and wiring

Dimensions

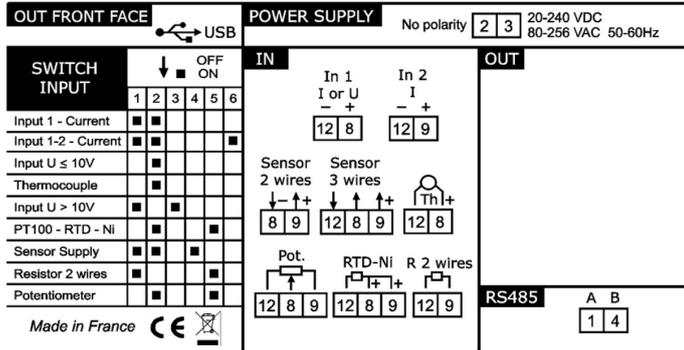


Dimensions: Width : 22.5 or 45 mm - Height: 81 mm - Depth: 98 mm

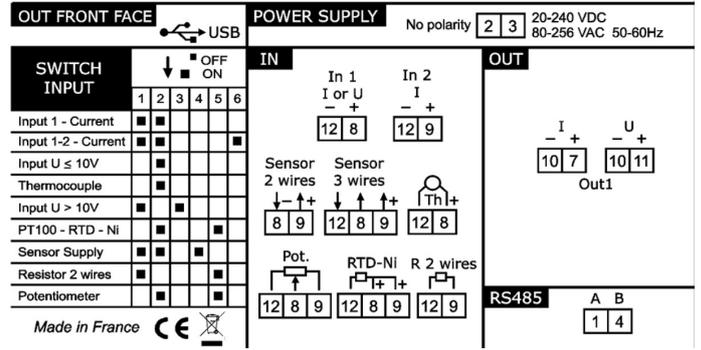
- i BASELINE boards are to be ordered separately
 22.5 mm Case: Reference BL01ALV ; 45 mm Case: Reference BL02ALV
 For multi-transmitter boards, please consult us.

Wiring

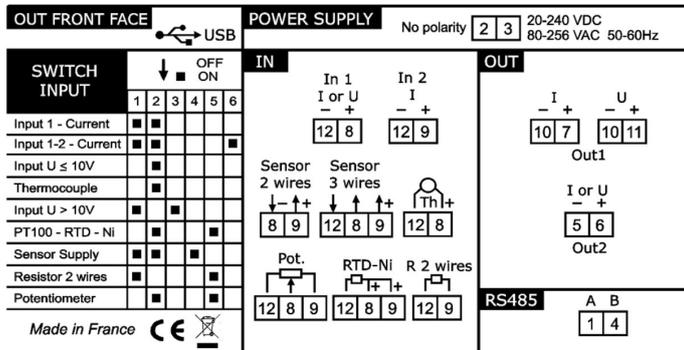
TELIS 9000U0



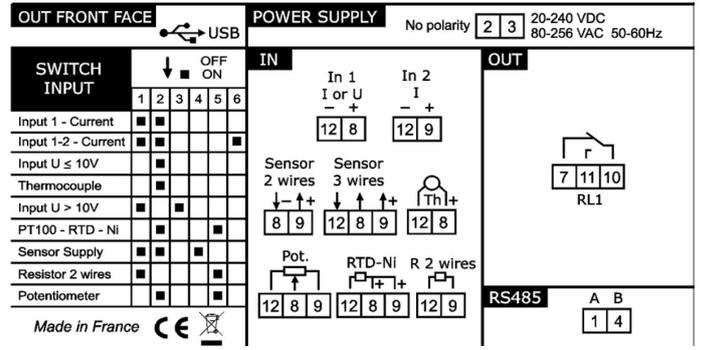
TELIS 9000U1



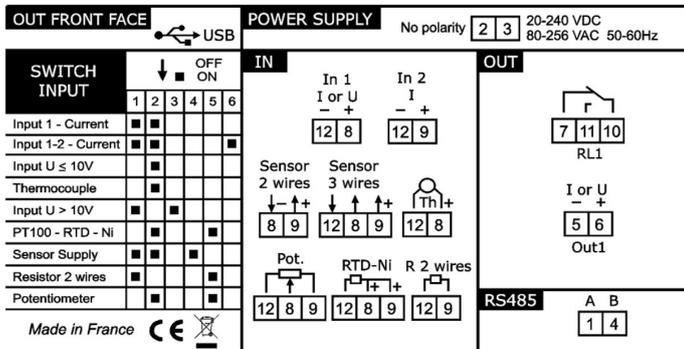
TELIS 9000U2



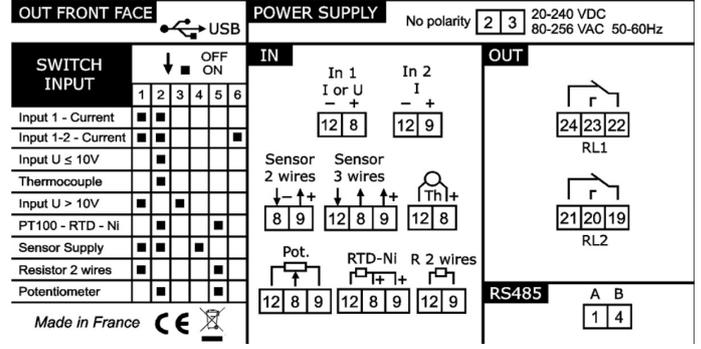
TELIS 9100U0



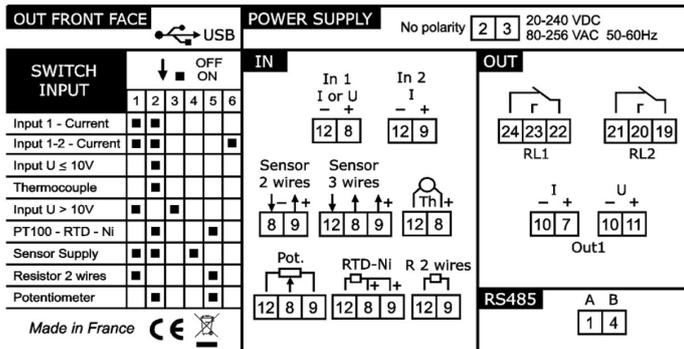
TELIS 9150U1



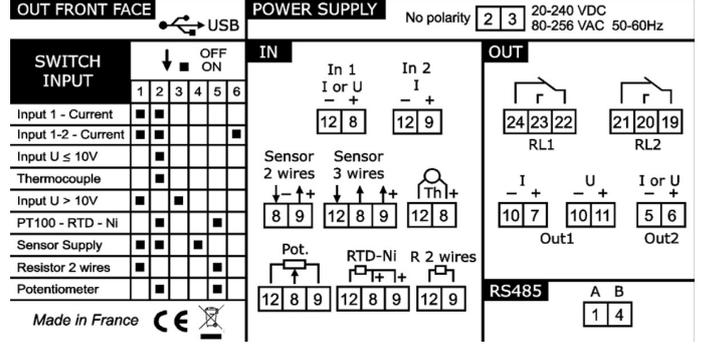
TELIS9200U0



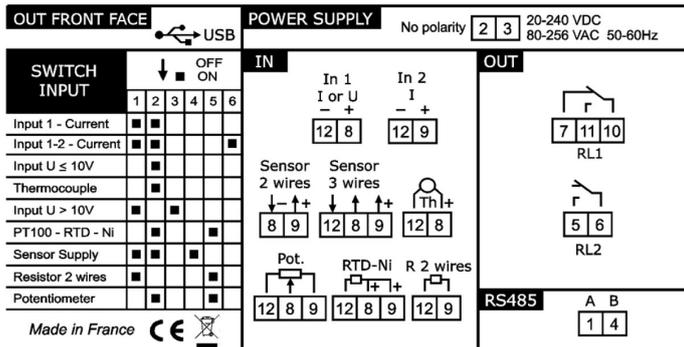
TELIS 9200U1



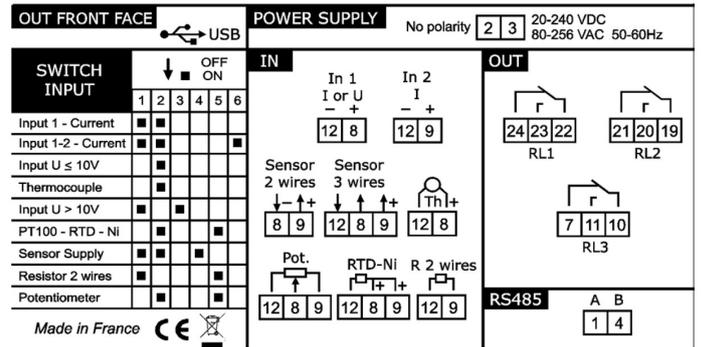
TELIS9200U2



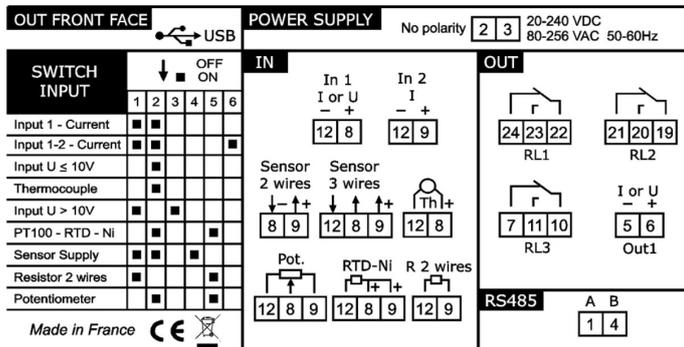
TELIS 9250U0



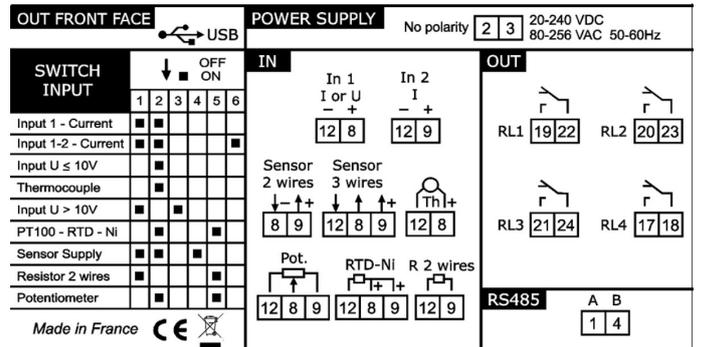
TELIS 9300U0



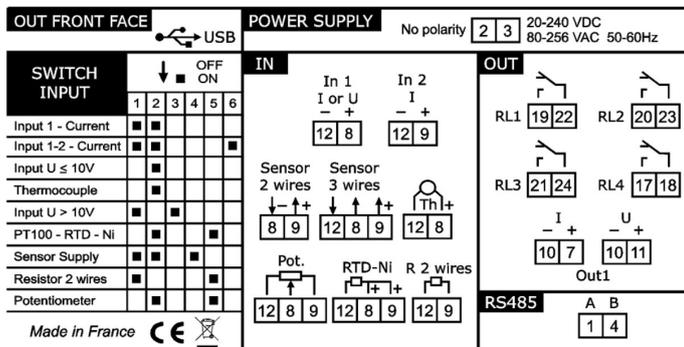
TELIS 9300U1



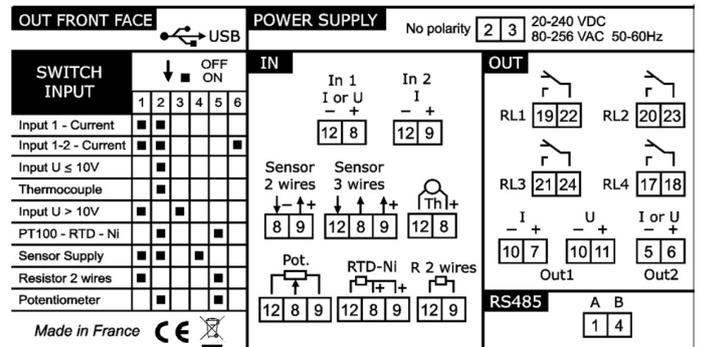
TELIS 9400U0



TELIS 9400U1



TELIS 9400U2



Installation

Prerequisite

[-] Necessary equipment:

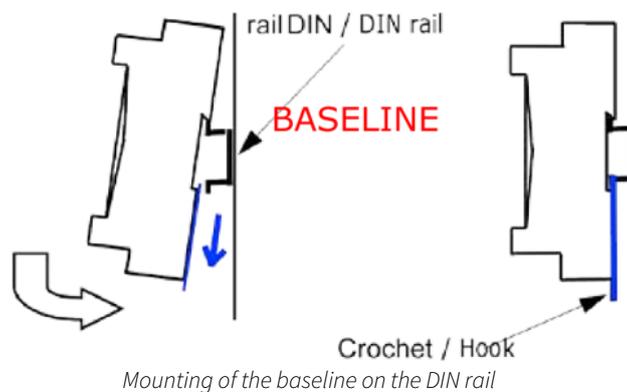
- DIN rail
- Screwdriver
- Copper wire of section 2.5 mm² max
- Cutting pliers
- Circuit breaker or equivalent

Mounting of the Baseline on the DIN rail

The baseline shall be mounted vertically on a DIN rail, placed horizontally.

Engage the top of the notch on top of the rail and push the base from the bottom until the plastic hook locks in place.

(i) In case of temperature > 40°C or if the DIN rail is mounted in an upright position, a space of 5mm between 2 transmitters is recommended.



A D-curve circuit breaker or equivalent must be placed close to the base and be easily accessible. This protection device must allow to cut the voltage of the power supply cables connected to the Baseline. Once the power is cut and the cables removed, the baseline can be unclipped.

To unclip the baseline from the DIN rail, pull the plastic hook down with a screwdriver, and pull the baseline towards yourself.

(i) Before installing or removing the baseline on the DIN rail, it must be turned off and the products removed.

Setting up the transmitter on the baseline

The connection of the 22.5mm device is done by means of screw terminals distributed in 2 rows of 3 terminals marked from 1 to 6, at the top; and 2 rows of 3 terminals marked from 7 to 12, at the bottom.

The connection of the 45mm device is made by means of screw terminals distributed in 2 rows of 6 terminals identified from 1 to 6 and from 13 to 18, at the top; and 2 rows of 6 terminals identified from 7 to 12 and from 19 to 24 at the bottom.

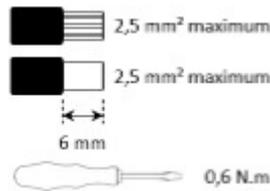
The power supply of the product is done via the baseline on terminals 2 and 3 marked in red.

i Use wire section 2.5 mm² for the power supply (2 and 3).

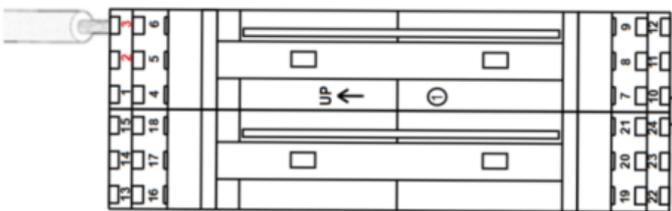
On other terminals, use a maximum of 2.5 mm² wire.

Strip cables over a length of 6mm

The tightening torque should be 0.6 Nm.



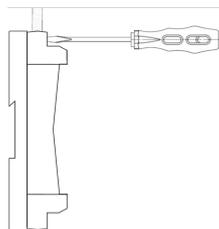
When connecting the power supply to the base, check that the power is turned off to avoid any risk to the operator.



Baseline 45, top view



Baseline 22.5, top view



Baseline, profile view

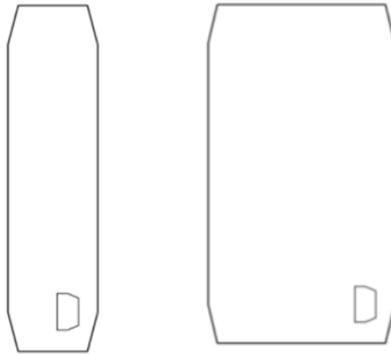
When the connection of the power supply, outputs and inputs is made, the transmitter module can be installed on its baseline.

Check that the transmitter module is in the right direction and matches the "UP" indication on the baseline.

Insert the product into the slot of the baseline until it clicks and locks in top and bottom.

The device must be positioned in such a way as to facilitate the disconnection from its baseline, and this allowing the power cut-off of the module.

The mini-USB socket on the front of the product allows the connection to a PC for the product's configuration software.



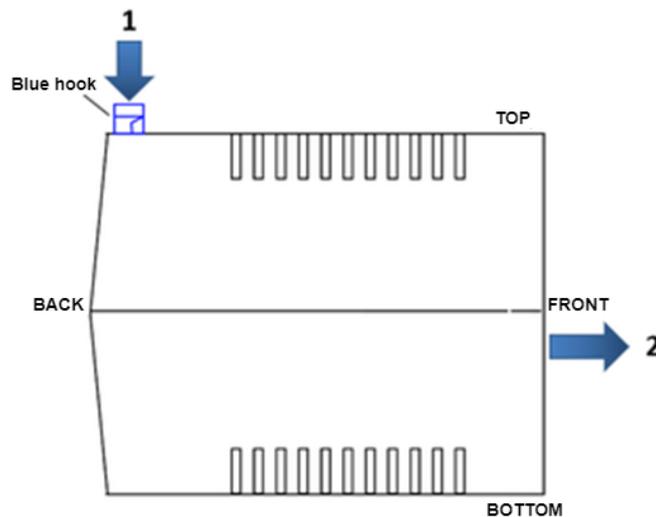
Front view: Baseline 22,5mm and Baseline 45mm

If the transmitter has an RJ45 socket on the front panel, it can be connected to the industrial network with an Ethernet cable.

Removing the transmitter module from its Baseline

Press the blue button to unlock the device.

Holding down the blue hook, pull the device out of the base.



Removing the transmitter

 The product can be connected or disconnected from its base while powered.

Power Supply

The product has its own power supply.

The power supply conditions of the product (voltage, frequency, consumption) are available in the following sections "Technical characteristics" → "Characteristics" → "Auxiliary source" → "Power Supply voltage", and "Technical characteristics" → "Characteristics" → "General characteristics" → "Maximum consumption" of this document.

- i** Plan a protective fuse to protect the external power supply because the product is not equipped with one. Install an external protective fuse, time-delayed of type T 500mA 250V with a high cut-off power. The cut-off power of the protective fuse shall be greater than the short-circuit current that can be supplied by the power source.

Operating Instructions

Before operating the device, make sure you follow the steps below in order:

1. Install and wire the product, check the baseline (BL) if applicable. Refer to the "Installation" chapter of this manual.
2. Power the product. Refer to the "Installation" chapter → "Power Supply" of this manual.
3. Program the inputs/outputs of the product. Refer first to the chapter "Programming and keys functions " of this manual.
4. Configure the communications. Refer to the "Settings Menu" and "MODBUS Exchange Table" sections of this manual (depending on the product reference).

Programming and key functions

Introduction

The principle of programming is that of drop-down menus in which it is enough to scroll through the available functions until the display of the one sought, and to validate this choice to proceed to the next step.

Scrolling can be done in 2 directions.

During programming, one or more presses on the button allows you to return to measure.

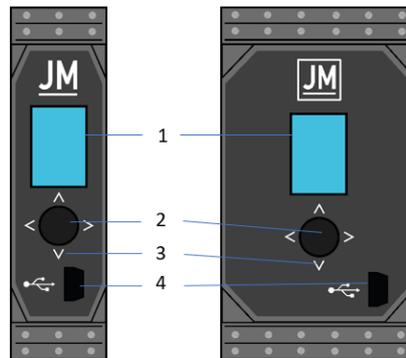
During programming, if no key is activated for one minute, the device returns to the measurement phase automatically.

The sequence to perform good programming is the following:

- Programming of the display and input: mode, type, scale, decimal point, resolution, function for process inputs and potentiometer, digital filter, cut-off.
- Programming of outputs:

→ analog outputs (gauge, beginning and end of scale, safety, limit)

→ relay (led, relay, alarm type, hysteresis, timing, breaking, memorization)



Front view 22.5 and 45mm case

| | | | |
|----------|----------|----------|--|
| 1 | Screen | 3 | Joystick positions up, down, left, right |
| 2 | Joystick | 4 | Direct USB port (or indirect for TELIS 6000, TELIS 8000 and GK 3000) |

Use of the function keys in measurement mode

| Element | Graphical representation in the manual | Function |
|--|---|---|
| Joystick button |  | Pressing the button allows: <ul style="list-style-type: none"> to switch to programming mode to reset the min / max and access the tare function to access the alarm instructions setting |
| Joystick positions up, down, left, right |  | The up, down, left, right positions allow you to navigate between the different measurement pages |

Use of the function keys in programming mode

| Element | Graphical representation in the manual | Function |
|--------------------------------|---|--|
| Joystick button |  | Pressing the button validates a choice of menu or configuration |
| Top, bottom joystick positions |  | The up and down positions allow you to choose a menu or the value of a parameter |
| Left joystick positions |  | The left position allows you to return to measurement mode (just back one step each time) |

Symbols used in the manual

| |
|---|
|  : Warning |
|  : Information / Recommendation |
|  : Note |

In the pages presenting the different drop-down menus, the main screen is framed green, and the menus accessible, if a special caliber is selected, framed orange.



Main screen - Special caliber screen

Programming by PC

Hardware Requirements

To be able to program the transmitter module with the PC, it is necessary to have a connection cable and the IXLOG software for the product.

Connecting cable

You need a USB cable between the USB socket on the front of the JM Concept transmitter module and the USB of the PC.

JM Concept transmitters can be programmed easily with our IXLOG software. Once the transmitter is programmed, it is also possible to connect and configure it via an Ethernet cable (Modbus TCP) or via the RS485 bus (depending on the product reference).

 **For TELIS 6000, TELIS 8000 and GK 3000 series references**
These products do not have a direct USB connection and cannot work directly with a standard USB cable.
It is necessary to order from JM CONCEPT, the **USBLINE** cable.

IXLOG Software

To facilitate the configuration and programming of its products, JM Concept has designed a very advanced and user-friendly human/machine interface.

This software is free and available on our website:

<http://www.jmconcept.com/>

IXLOG software allows:

- Programming,
- The backup and the copy and paste of the configuration,
- The detection of devices on the network,
- Writing and reading the configuration,
- The communication with the device,
- The visualization of the measurement given by the transmitter

The IXLOG software is described and explained in more detail in the document IXLOG-FAQ-en.pdf directly in the help interface of the software.

 **For TELIS 6000, TELIS 8000 and GK 3000 series references**
These products are programmable with the SETLINE software, available on our website: <http://www.jmconcept.com/>

Error messages

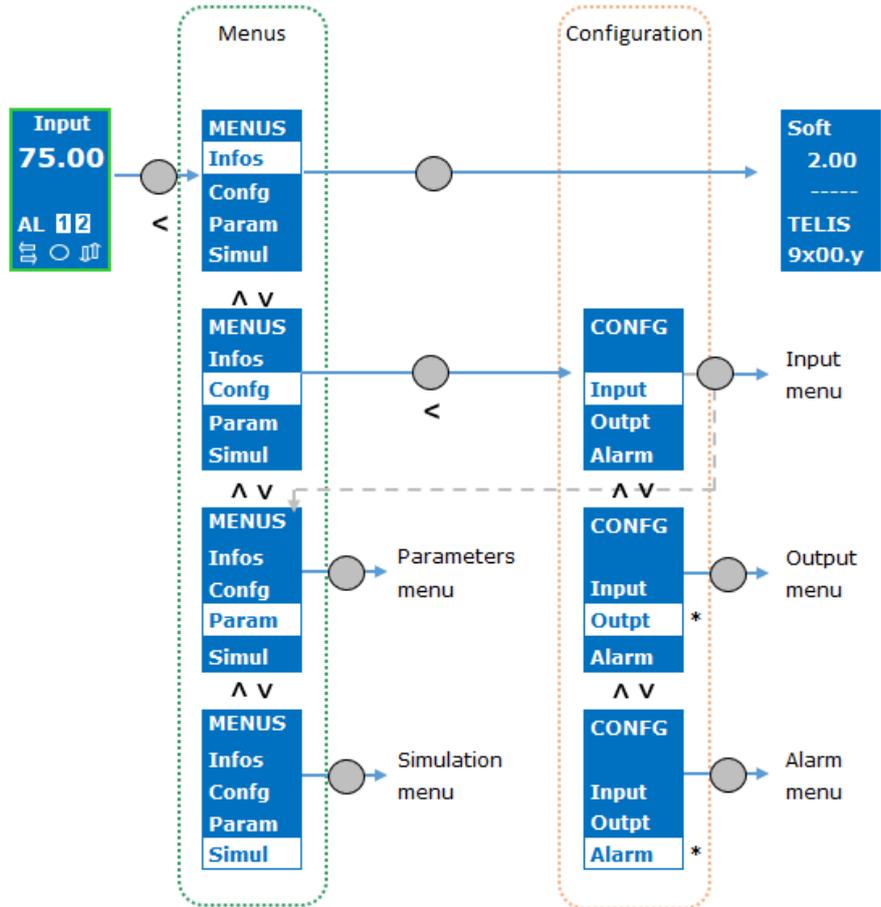
| Message displayed | Description |
|-------------------|---|
| ---- Overfl | The ---- Overfl (OverFLow) message is shown flashing for an input signal higher than the selected gauge. |
| ruPtr | <p>In the event of a sensor failure, the ruPtr message is shown flashing.</p> <p>The sensor failure is displayed:</p> <ul style="list-style-type: none">• on detection of an open circuit in the current (4-20mA only), voltage, resistance, potentiometer, thermocouple gauge.• if the measurement exceeds the gauge limits by 20%. |
| Undrfl_____ | The message Undrfl_____ (UnderFLow) is shown flashing for an input signal below the selected gauge. |

Main menu

Diagram

This menu allows you to enter the programming mode and configure the input, analog outputs, and relays.

*Menus available according to product reference



Lexicon of screens

Menus

| Screen | Value | Description |
|--------|-------|-----------------------------------|
| MENUS | | Main menu |
| | Infos | Access to the product information |
| | Confg | Access to the configuration |
| | Param | Access to the settings menu |
| | Simul | Access to the simulation function |

Configuration

| Screen | Value | Description |
|--------|-------|-----------------------------|
| CONFG | | Access to the configuration |
| | Input | Access to the input menu |
| | Outpt | Access to the output menu |
| | Alarm | Access to the Alarm menu |

Soft

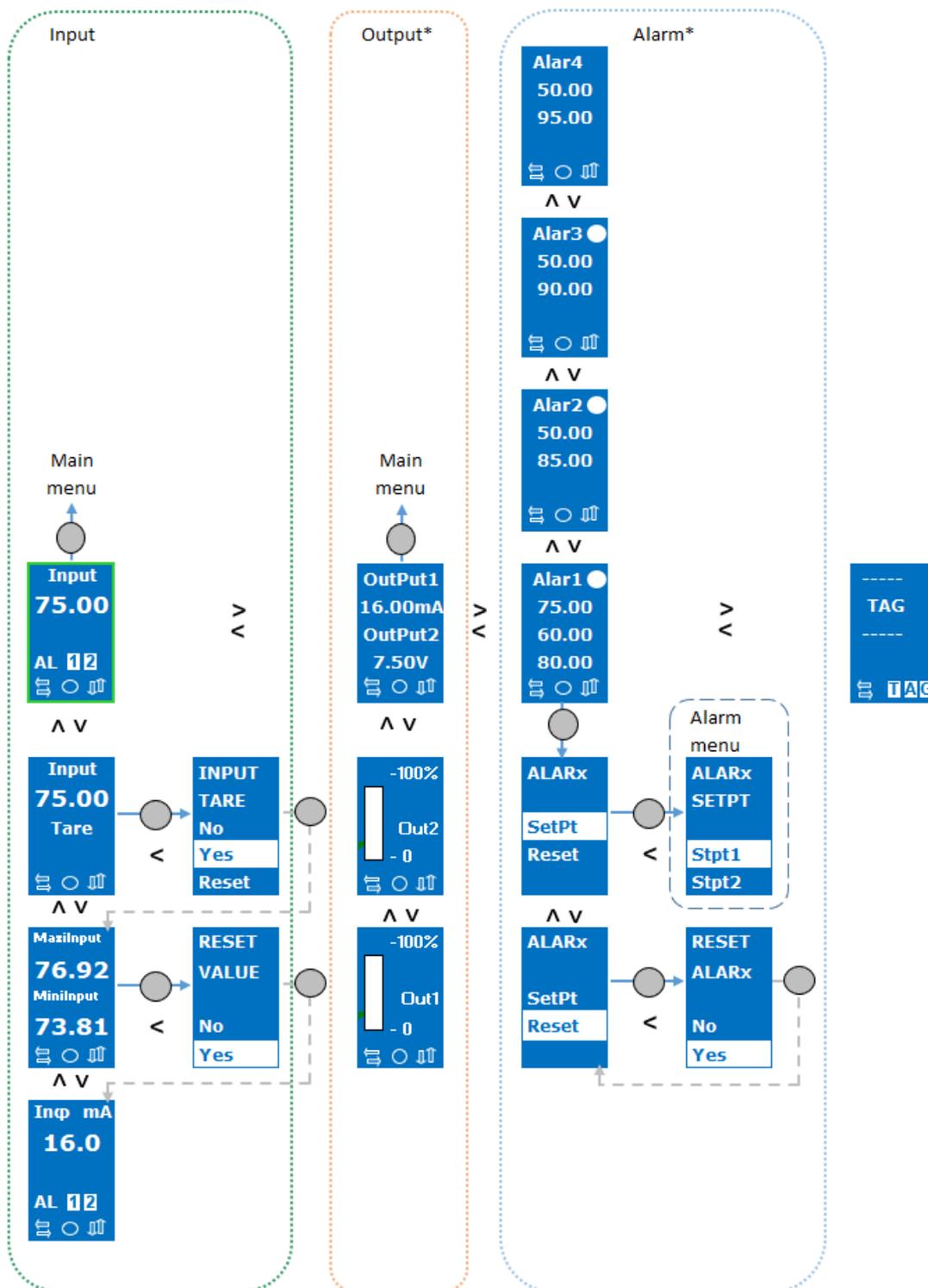
| Screen | Value | Description |
|--------|--------|--|
| Soft | | Access to the product information |
| | Line 2 | Software version number |
| | Line 5 | Product reference (x = number of relays, y = number of analog outputs) |
| | | Return to the previous screen automatically after 5 seconds |

Measurements menu 1 input

Diagram

By default, the device is in measurement mode.
Value resets and tare values are accessible in this mode.

*Menus available according to product reference



Lexicon of screens

Input

| Screen | Value | Description | Screen | Value | Description |
|-------------|----------|--|-------------|--------|-----------------------|
| Main screen | | | RESET VALUE | | Choice of reset |
| | Input | Display of the input value | | Yes/No | |
| | Inφ | Display of the physical measurement | INPUT TARE | | Choice of use of tare |
| | AL | Alarm | | Yes/No | |
| | MaxInput | Display of the max measured value | | Reset | Reset |
| | MinInput | Display of the min measured value | | | |
| | Tare | Tare function only for current, voltage, and potentiometer input | | | |

Output

| Screen | Value | Description |
|-----------------|-------|-----------------------------|
| OutPut x & Outx | | Display of the output value |

Alarm

| Screen | Value | Description | Screen | Value | Description |
|--------|--------|--|-------------|--------|----------------------------------|
| Alarx | | Display of the alarm. If the alarm is activated, a white circle is displayed | ALARx SETPT | | Selection of the alarm threshold |
| | Line 2 | Measurement | | Stptx | Threshold n°x |
| | Line 3 | Threshold 1 | RESET ALARx | | Choice of reset |
| | Line 4 | Threshold 2 | | Yes/No | |
| ALARx | | Access to the setting of thresholds | | | |
| | SetPt | Access to the alarm threshold | | | |
| | Reset | Reset | | | |

TAG

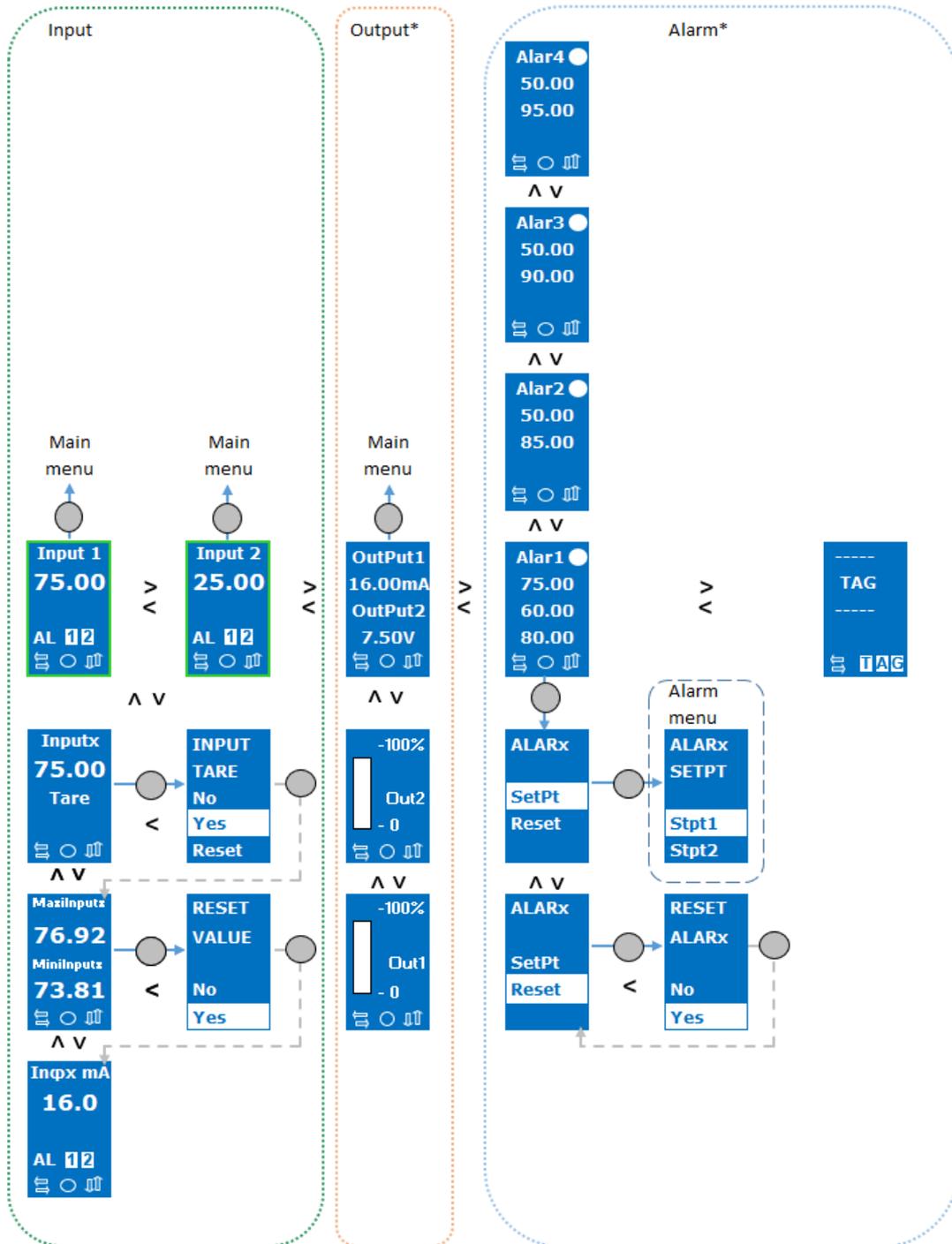
TAG display (TAG input only by IXLOG software)

Measurements menu 2 inputs

Diagram

The 2 inputs is only available for current inputs.

*Menu available according to product reference



Lexicon of screens

Input

| Screen | Value | Description | Screen | Value | Description |
|-------------|----------------|--|-------------|--------|-----------------------|
| Main screen | | | RESET VALUE | | Choice of reset |
| | Inputx | Display of the input value | | Yes/No | |
| | Inφx | Display of the physical measurement | INPUT TARE | | Choice of use of tare |
| | AL | Alarm | | Yes/No | |
| | MaxiInput x | Display of the max measured value | | Reset | Reset |
| | MiniInput x | Display of the min measured value | | | |
| | Tare | Tare function only for current, voltage, and potentiometer input | | | |

Sortie

| Screen | Value | Description |
|-----------------|-------|-----------------------------|
| OutPut x & Outx | | Display of the output value |

Alarme

| Screen | Value | Description | Screen | Value | Description |
|--------|--------|--|-------------|--------|----------------------------------|
| Alarx | | Display of the alarm. If the alarm is activated, a white circle is displayed | ALARx SETPT | | Selection of the alarm threshold |
| | Line 2 | Measurement | | Stptx | Threshold n°x |
| | Line 3 | Threshold 1 | RESET ALARx | | Choice of reset |
| | Line 4 | Threshold 2 | | Yes/No | |
| ALARx | | Access to the setting of thresholds | | | |
| | SetPt | Access to the alarm threshold | | | |
| | Reset | Reset | | | |

TAG

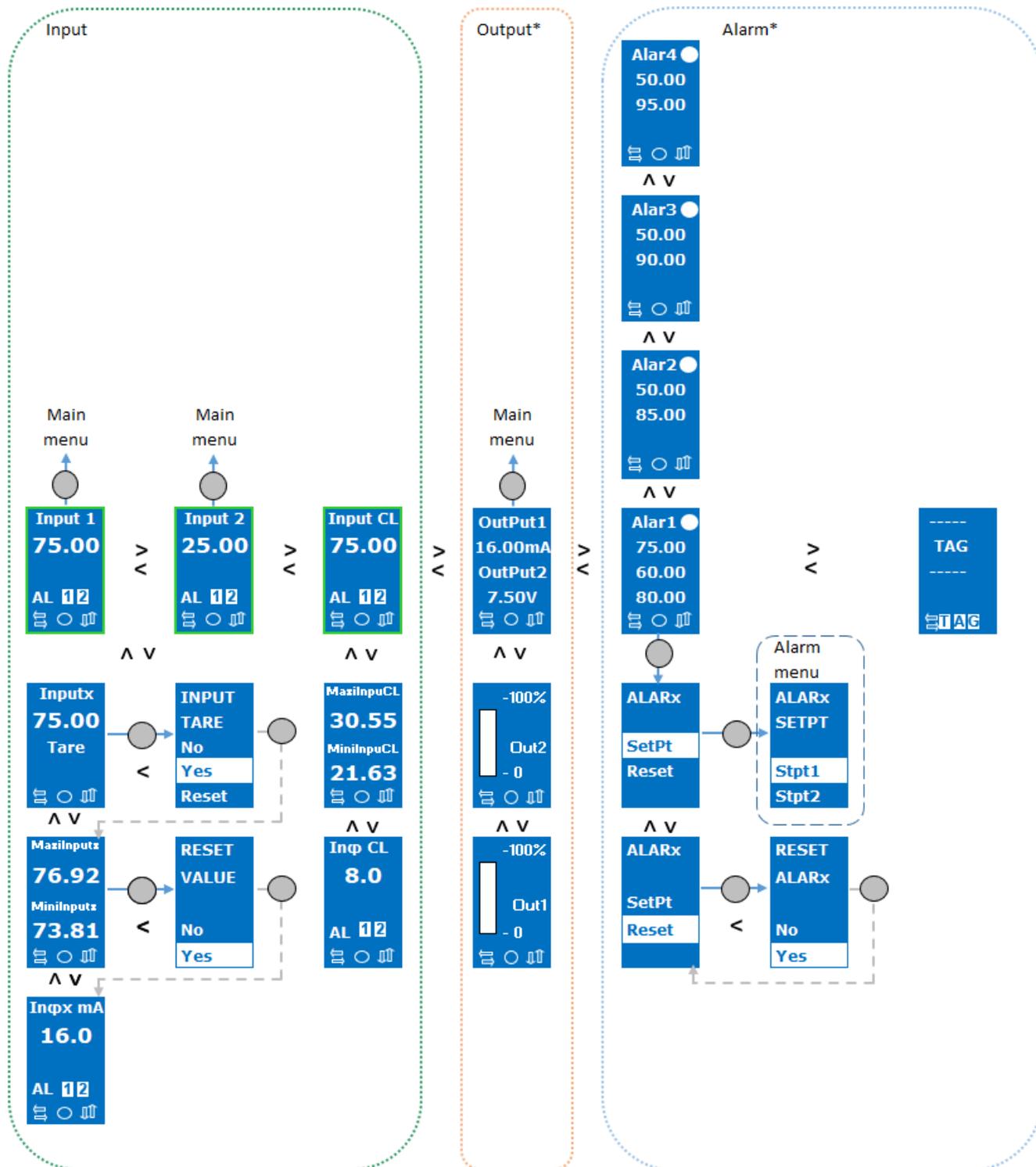
TAG display (TAG input only by IXLOG software)

Measurements menu 2 inputs + calculation

Diagram

The 2 inputs + calculation mode is only available for current inputs.

*Menus available according to product reference



Lexicon of screens

Input

| Screen | Value | Description | Screen | Value | Description |
|-------------|----------------|--|-------------|------------|-------------------------------------|
| Main screen | | | Main screen | | |
| | Inputx | Display of the input value | | MaxiInpuCL | Display of the max calculated value |
| | Inφx | Display of the physical measurement | | MiniInpuCL | Display of the min calculated value |
| | AL | Alarm | RESET VALUE | | Choice of reset |
| | MaxiInput x | Display of the max measured value | | Yes/No | |
| | MiniInput x | Display of the min measured value | INPUT TARE | | Choice of use of tare |
| | Tare | Tare function only for current, voltage, and potentiometer input | | Yes/No | |
| | InputCL | Display of the calculated input value | | Reset | Reset |
| | Inφ CL | Display of the calculated physical measurement | | | |

Output

| Screen | Value | Description |
|-----------------|-------|-----------------------------|
| OutPut x & Outx | | Display of the output value |

Alarm

| Screen | Value | Description | Screen | Value | Description |
|--------|--------|--|-------------|--------|----------------------------------|
| Alarx | | Display of the alarm. If the alarm is activated, a white circle is displayed | ALARx SETPT | | Selection of the alarm threshold |
| | Line 2 | Measurement | | Stptx | Threshold n°x |
| | Line 3 | Threshold 1 | RESET ALARx | | Choice of reset |
| | Line 4 | Threshold 2 | | Yes/No | |
| ALARx | | Access to the setting of thresholds | | | |
| | SetPt | Access to the alarm threshold | | | |
| | Reset | Reset | | | |

TAG

TAG display (TAG input only by IXLOG software)

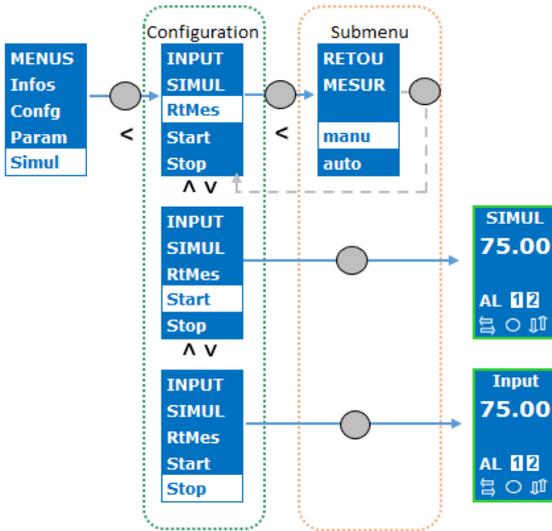
Simulation function

Operating the simulation function

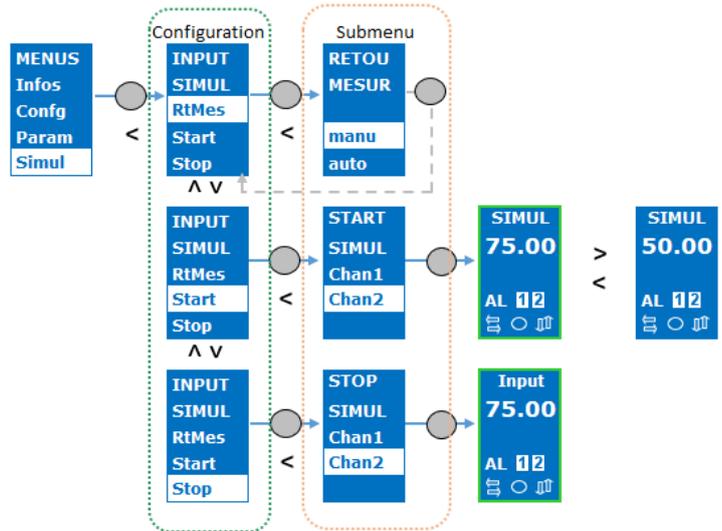
This function allows you to vary the simulation value (with the up/down arrows from the SIMUL screen) to change the analog output value and relays statuses.

The measurement screens of the 1 input and 2 inputs measurements menus are available when simulation is activated.

Simulation 1 input



Simulation 2 inputs



Lexicon of screens

Configuration

| Screen | Value | Description |
|-------------|-------|--|
| INPUT SIMUL | | |
| | RtMes | Access to the preferences for returning to the measurement mode |
| | Start | Starting the simulation mode. Back to the main screen in simulation mode |
| | Stop | Stop the simulation mode. Return to the main screen in measurement mode |

Submenu - simulation 1 input

| Screen | Value | Description |
|-------------|-------|---|
| RETOU MESUR | | Selection of the return to measurement mode |
| | manu | Return to manual measurement mode |
| | auto | Return to measurement mode after 10 minutes |
| START SIMUL | | Enable simulation |
| | | Starting the simulation on input 1 and return to the main screen in simulation mode |
| STOP SIMUL | | Disable simulation |
| | | Stop the simulation on input 1 and return to the main screen in measurement mode |

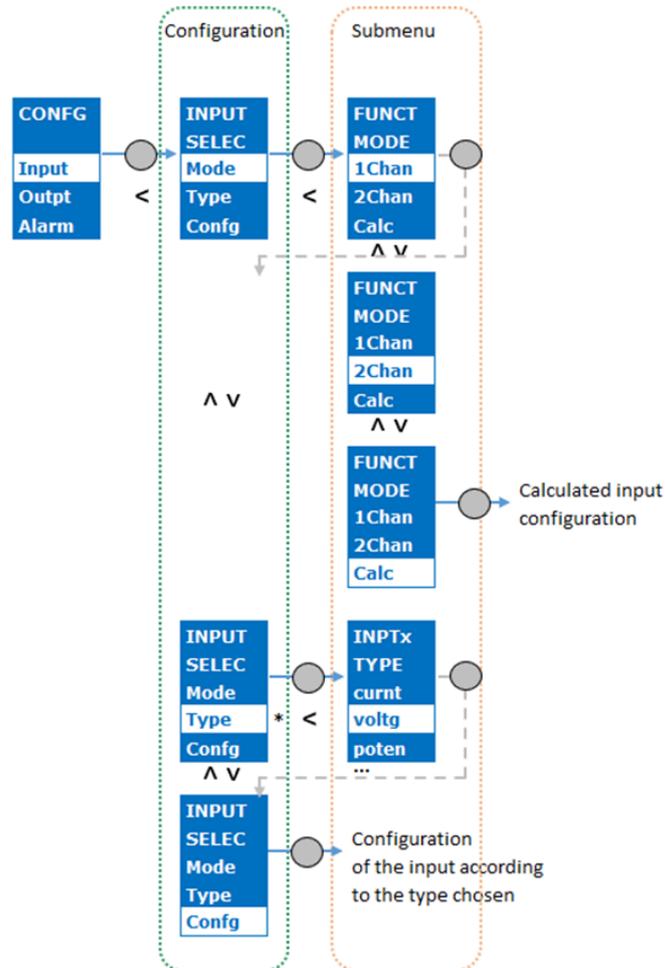
Submenu - simulation 2 inputs

| Screen | Value | Description |
|-------------|-------|--|
| RETOU MESUR | | Selection of the return to measurement mode |
| | manu | Return to manual measurement mode |
| | auto | Return to measurement mode after 10 minutes |
| START SIMUL | | Selection of the input to simulate |
| | Chan1 | Starting the simulation on input 1 and return to the main screen in simulation mode |
| | Chan2 | Starting the simulation on the 2 inputs and return to the main screen in simulation mode |
| STOP SIMUL | | Selection of the controlled input to stop |
| | Chan1 | Stop the simulation on input 1 and return to the main screen in measurement mode |
| | Chan2 | Stop the simulation on both inputs and return to the main screen in measurement mode |

Input menu

Diagram

*Menu available if 1Chan mode selected



Lexicon of screens

Configuration

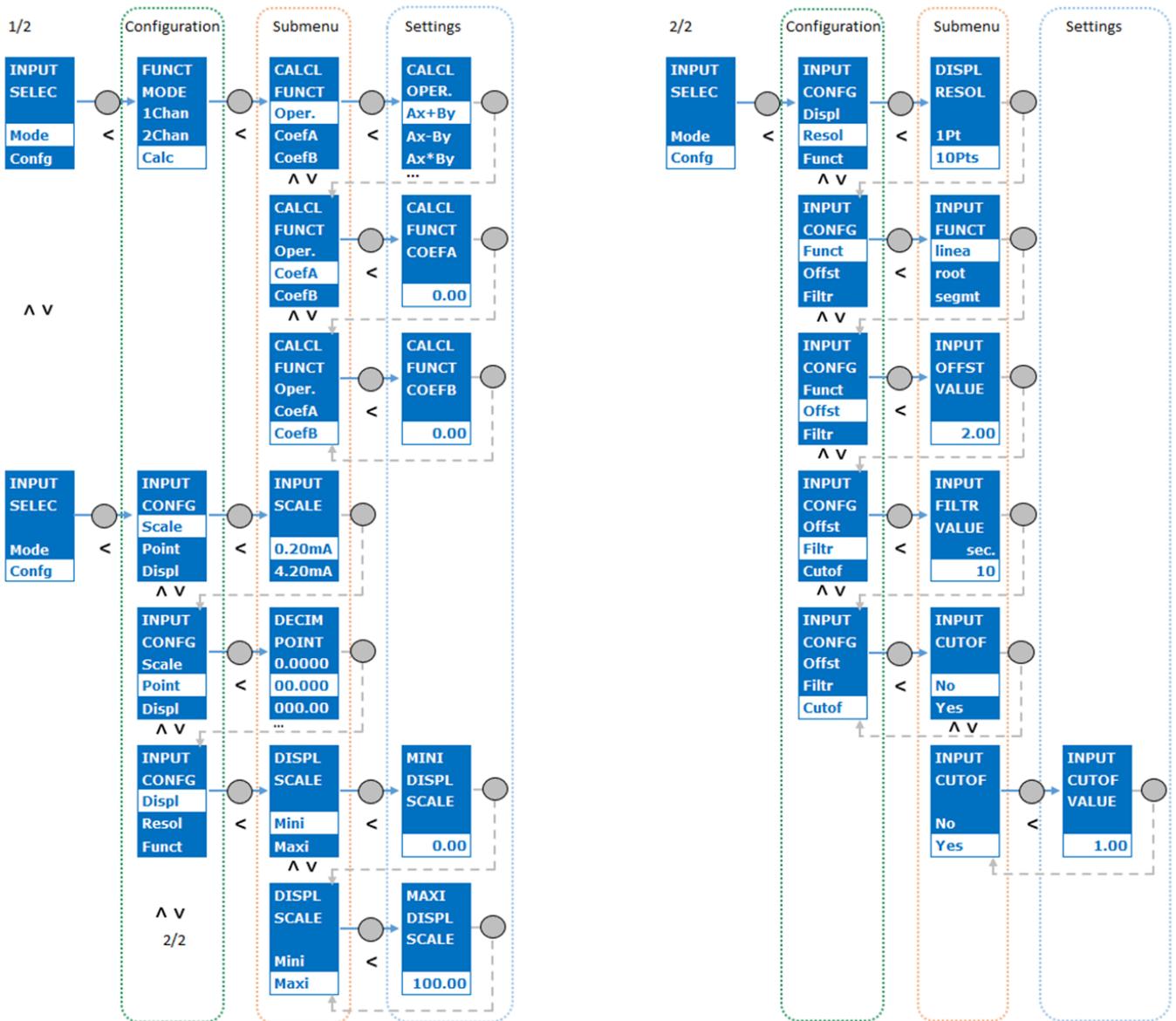
| Screen | Value | Description |
|--------------|-------|---|
| INPUT SELECT | | Inputs Selection |
| | Mode | Access to the choice of input mode |
| | Type | Access to the choice of input type |
| | Confg | Access to the configuration of the chosen input |

Submenu

| Screen | Value | Description |
|-------------|-------|-----------------------------|
| FUNCT MODE | | Mode selection |
| | 1Chan | 1 input |
| | 2Chan | 2 inputs |
| | Calc | Calculation |
| INPUTx TYPE | | Selection of the input type |
| | curnt | Current input |
| | voltg | Voltage input |
| | poten | Potentiometer input |
| | resis | Resistance input |
| | R.T.D | RTD input |
| | therm | Thermocouple input |

Calculated input configuration

Diagram



Lexicon of screens

Configuration

| Screen | Value | Description |
|-------------|-------|--|
| FUNCT MODE | | Mode selection |
| | 1Chan | 1 input |
| | 2Chan | 2 inputs |
| | Calc | Calculation |
| INPUT CONFG | | Input configuration |
| | Scale | Access to the choice of input gauges |
| | Point | Access to the comma position setting |
| | Displ | Access to the display scales |
| | Resol | Accessing the resolution configuration |
| | Funct | Access to the function configuration |
| | Offst | Access to the offset configuration |
| | Filtr | Access to the filtering configuration |
| | Cutof | Access to the cut-off configuration |

Submenu

| Screen | Value | Description | Screen | Value | Description |
|-------------|-----------------|--|-------------------|----------------------|---|
| CALCL FUNCT | | Calculation selection | DISPL RESOL | | Selection of the display resolution |
| | Oper. | Access to the choice of operation | | XPt(s) | Number of points |
| | CoefA | Access to the setting of coefficient A | INPUT FUNCT | | Function Selection |
| | CoefB | Access to the setting of coefficient B | | linea | Linear function |
| INPUT SCALE | | Gauges Selection | | root | Square root function - inactive in compute mode and 2-channel mode |
| | 0-20mA ; 4-20mA | | | segmt | Segment function access - inactive in both compute mode and 2-inputs mode |
| DECIM POINT | | Gauges Selection | INPUT OFFST VALUE | | Offset Setting |
| | x.xxxx | Comma position | | from -19999 to 99999 | |
| DISPL SCALE | | Setting of the display scale | INPUT FILTR VALUE | | Setting of the filter value |
| | Mini | Access to the min value setting | | from 0 to 250 | |
| | Maxi | Access to the max value setting | INPUT CUTOF | | Choice of use of the cut-off |
| | | | | Yes/No | |

Settings

| Screen | Value | Description | Screen | Value | Description |
|-------------------|----------------------|--|--------------------|----------------------|---|
| CALCL FUNCT | | Calculation selection | CALCL FUNCT COEFB | | Setting of the B coefficient |
| | Oper. | Access to the choice of operation | | from -1.000 to 1.000 | |
| | CoefA | Access to the setting of coefficient A | MINI DISPL SCALE | | Setting of the minimum value of the display scale |
| | CoefB | Access to the setting of coefficient B | | from -19999 to 99999 | |
| CALCL OPER. | | Operation selection | MAXI DISPL SCALE | | Setting of the maximum value of the display scale |
| | Ax+By | Calculation Ax+By | | from -19999 to 99999 | |
| | Ax-By | Calculation Ax-By | INPUT CUTOFF VALUE | | Setting of the cut-off value |
| | Ax*By | Calculation Ax*By | | from -19999 to 99999 | |
| | Ax/By | Calculation Ax/By | | | |
| CALCL FUNCT COEFA | | Setting of the A coefficient | | | |
| | from -1.000 to 1.000 | | | | |

Lexicon of screens

Configuration

| Screen | Value | Description | Value | Description |
|-------------|-------|--|--------|---------------------------------------|
| INPUT CONFG | | Input configuration | | |
| | Scale | Access to the choice of input gauges | Funct | Access to the function configuration |
| | Point | Access to the comma position setting | Offst | Access to the offset configuration |
| | Displ | Access to the display scales | Filtr | Access to the filtering configuration |
| | Resol | Accessing the resolution configuration | Cutoff | Access to the cut-off configuration |

Submenu

| Screen | Value | Description | Screen | Value | Description |
|-------------|--------|--|-------------------|----------------------|------------------------------|
| INPUT SCALE | | Gauges Selection | INPUT FUNCT | | Function Selection |
| | XX | Standard gauges | | linea | Linear function |
| | Spe.XX | Special gauges | | root | Square root function |
| DECIM POINT | | Selection of the position of the comma | | segmt | Segment function access |
| | x.xxxx | Comma position | | absl. | Absolute value function |
| DISPL SCALE | | Setting of the display scale | INPUT OFFST VALUE | | Offset Setting |
| | Mini | Access to the min value setting | | from -19999 to 99999 | |
| | Maxi | Access to the max value setting | INPUT FILTR VALUE | | Setting of the filter value |
| DISPL RESOL | | Selection of the display resolution | | from 0 to 250 | |
| | XPt(s) | Number of points | INPUT CUTOF | | Choice of use of the cut-off |
| | | | | Yes/No | |

Settings

| Screen | Value | Description | Screen | Value | Description |
|-----------------------|----------------|--|-------------------|----------------------|--|
| INPUT SCALE | | Mode selection Setting | MINI DISPL SCALE | | Setting of the minimum value of the display scale |
| | manu | Manual Setting | | from -19999 to 99999 | |
| | auto | Automatic Setting | MAXI DISPL SCALE | | Setting of the maximum value of the display scale |
| INPUT SCALE MANU | | Manual Setting of the special gauges | | from -19999 to 99999 | |
| | Mini | Access to the min value setting | FUNCT SEGMT. | | Function |
| | Maxi | Access to the max value setting | | NbPts | Access to the configuration of the number of points |
| MINI INPUT SCALE MANU | | Manual Setting of the minimum value | | PrgSg | Access to the points configuration |
| | from -22 to 22 | | FUNCT SEGMT NBPTS | | Setting of the number of points |
| MAXI INPUT SCALE MANU | | Manual Setting of the maximum value | | from 1 to 99 | |
| | from -22 to 22 | | FUNCT SEGM Inp x | | Setting of the percentage of the point x input scale |
| INPUT SCALE AUTO | | Automatic Setting for special gauges | | from 0 to 100% | |
| | Mini | Access to the min value setting | FUNCT SEGM Dsp x | | Setting of the display value of point x |
| | Maxi | Access to the max value setting | | from -19999 to 99999 | |
| Set Mini Input then | | Setting of the minimum value of the input signal with a connected sensor | INPUT CUTOF VALUE | | Setting of the cut-off value |
| Set Maxi Input then | | Setting of the maximum value of the input signal with a connected sensor | | from -19999 to 99999 | |

Definition of functions

Square root

The output(s) are function of the square root of the input

Segment Function

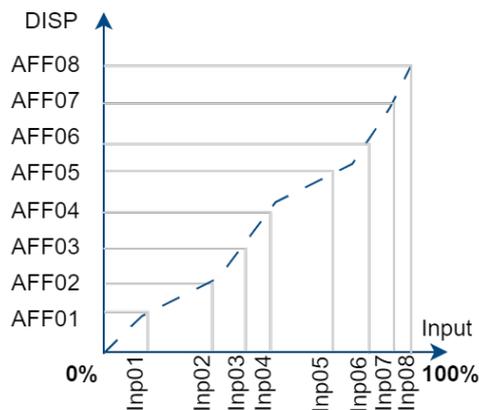
Linearization in 99 points (free choice for each point), allows to create an output function by segmentation of the signal of each input channel.

0% = $_Display$; 100% = $\bar{Display}$

AFF01, AFF02, ... = Display value

INP01, INP02, ... = % of the input value

In the example opposite, 8 points (+0% & 100%) correspond to 9 segments



Absolute value

The output(s) are a function of the absolute value of a bidirectional input

Offset

Manual adjustment of the input offset

Filtering

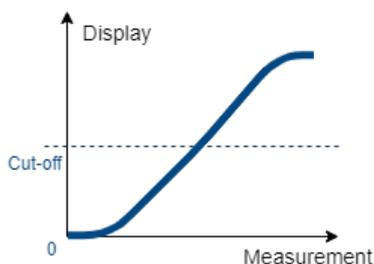
Integration of the measurement over the defined time (in seconds)

Cut-off

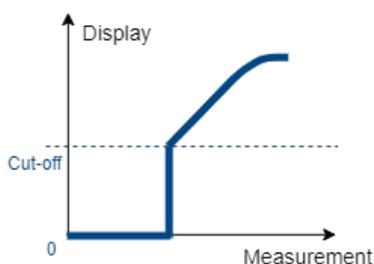
Threshold below which the input is considered as null

If Display value < Cut-off value, then Display value = Minimum display

Before application of the cut-off

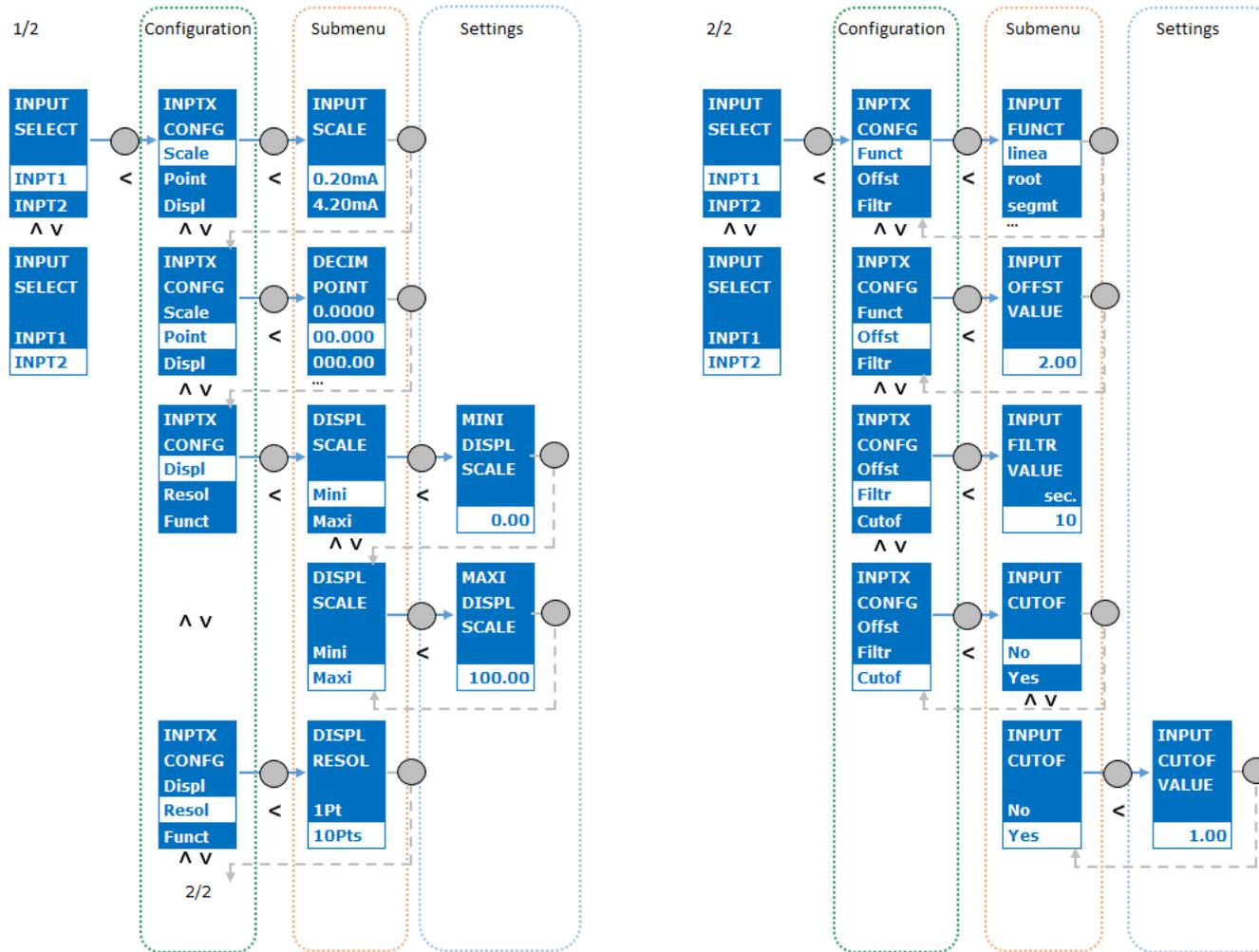


After application of the cut-off



Diagram

In 2-input mode, the entries have the same configuration.



Lexicon of screens

Configuration

| Screen | Value | Description | Value | Description |
|----------------|-------|--|--------|---------------------------------------|
| INPXT CONFG | | Input configuration | | |
| | Scale | Access to the choice of input gauges | Funct | Access to the function configuration |
| | Point | Access to the comma position setting | Offst | Access to the offset configuration |
| | Displ | Access to the display scales | Filtr | Access to the filtering configuration |
| | Resol | Accessing the resolution configuration | Cutoff | Access to the cut-off configuration |

Submenu

| Screen | Value | Description | Screen | Value | Description |
|-------------|-----------------|--|----------------------|----------------------|---|
| INPUT SCALE | | Gauges Selection | INPUT FUNCT | | Sélection de la fonction |
| | 0-20mA ; 4-20mA | | | linea | Linear function |
| DECIM POINT | | Selection of the position of the comma | | root | Square root function - inactive in compute mode and 2-channel mode |
| | x.xxxx | Comma position | | segmt | Segment function access - inactive in both compute mode and 2-inputs mode |
| DISPL SCALE | | Setting of the display scale | | absl. | Absolute value function - inactive in calculation mode and 2-channel mode |
| | Mini | Access to the min value setting | INPUT OFFST VALUE | | Offset Setting |
| | Maxi | Access to the max value setting | | from -19999 to 99999 | |
| DISPL RESOL | | Selection of the display resolution | INPUT FILTR VALUE | | Setting of the filter value |
| | XPt(s) | Number of points | | from 0 to 250 | |
| | | | INPUT CUTOF | | Choice of use of the cut-off |
| | | | | Yes/No | |

Settings

| Screen | Value | Description | Screen | Value | Description |
|------------------|----------------------|---|--------------------|----------------------|------------------------------|
| MINI DISPL SCALE | | Setting of the minimum value of the display scale | INPUT CUTOFF VALUE | | Setting of the cut-off value |
| | from -19999 to 99999 | | | from -19999 to 99999 | |
| MAXI DISPL SCALE | | Setting of the maximum value of the display scale | | | |
| | from -19999 to 99999 | | | | |

Definition of functions

Offset

Manual adjustment of the input offset

Filtering

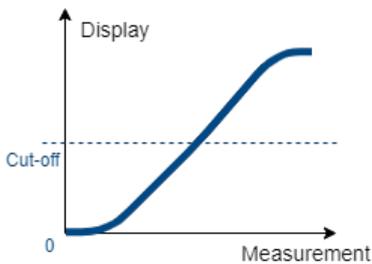
Integration of the measurement over the defined time (in seconds)

Cut-off

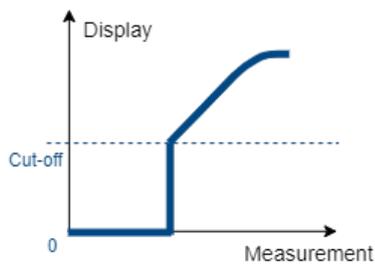
Threshold below which the input is considered as null

If Display value < Cut-off value, then Display value = Minimum display

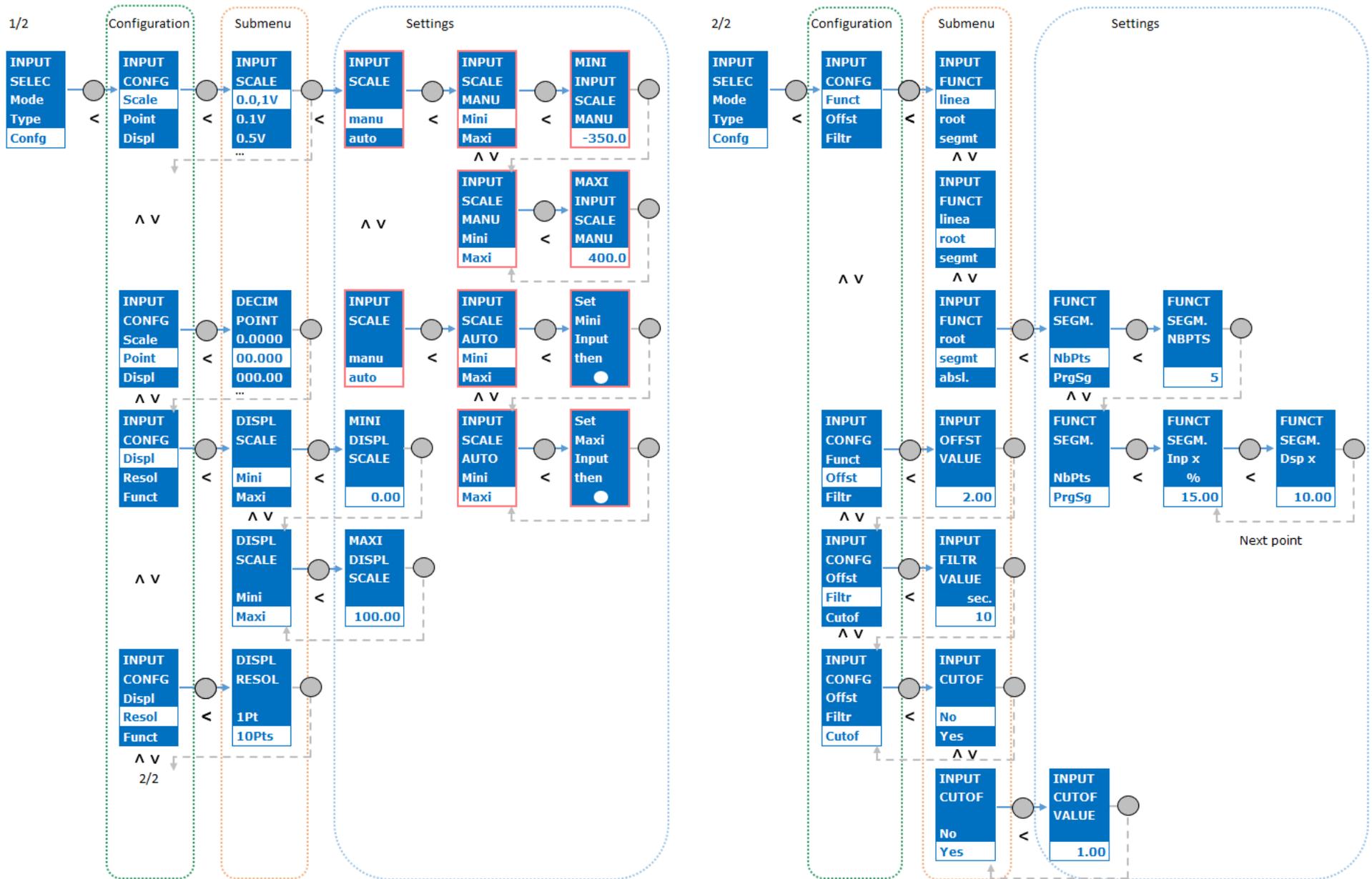
Before application of the cut-off



After application of the cut-off



Diagram



Lexicon of screens

Configuration

| Screen | Value | Description | Value | Description |
|----------------|-------|--|--------|---------------------------------------|
| INPXT CONFG | | Input configuration | | |
| | Scale | Access to the choice of input gauges | Funct | Access to the function configuration |
| | Point | Access to the comma position setting | Offst | Access to the offset configuration |
| | Displ | Access to the display scales | Filtr | Access to the filtering configuration |
| | Resol | Accessing the resolution configuration | Cutoff | Access to the cut-off configuration |

Submenu

| Screen | Value | Description | Screen | Value | Description |
|-------------|--------|--|----------------------|----------------------|------------------------------|
| INPUT SCALE | | Gauges Selection | INPUT FUNCT | | Function Selection |
| | XX. | Standard gauges | | linea | Linear function |
| | Spe.XX | Special gauges | | root | Square root function |
| DECIM POINT | | Selection of the position of the comma | | segmt | Segment function access |
| | x.xxxx | Comma position | | absl. | Absolute value function |
| DISPL SCALE | | Setting of the display scale | INPUT OFFST VALUE | | Offset Setting |
| | Mini | Access to the min value setting | | from -19999 to 99999 | |
| | Maxi | Access to the max value setting | INPUT FILTR VALUE | | Setting of the filter value |
| DISPL RESOL | | Selection of the display resolution | | from 0 to 250 | |
| | XPt(s) | Number of points | INPUT CUTOF | | Choice of use of the cut-off |
| | | | | Yes/No | |

Settings

| Screen | Value | Description | Screen | Value | Description |
|-----------------------|---|--|-------------------|----------------------|--|
| INPUT SCALE | | Mode selection Setting | MINI DISPL SCALE | | Setting of the minimum value of the display scale |
| | manu | Manual Setting | | from -19999 to 99999 | |
| | auto | Automatic Setting | MAXI DISPL SCALE | | Setting of the maximum value of the display scale |
| INPUT SCALE MANU | | Manual Setting of the special gauges | | from -19999 to 99999 | |
| | Mini | Access to the min value setting | FUNCT SEGMT. | | Configuration of the Segments Function |
| | Maxi | Access to the max value setting | | NbPts | Access to the configuration of the number of points |
| MINI INPUT SCALE MANU | | Manual Setting of the minimum value | | PrgSg | Access to the points configuration |
| | from -100mV to 110mV ; from -2V to 11V ; from -1000V to 1000V | | FUNCT SEGMT NBPTS | | Setting of the number of points |
| MAXI INPUT SCALE MANU | | Manual Setting of the maximum value | | from 1 to 99 | |
| | from -100mV to 110mV ; from -2V to 11V ; from -1000V to 1000V | | FUNCT SEGM Inp x | | Setting of the percentage of the point x input scale |
| INPUT SCALE AUTO | | Automatic Setting for special gauges | | from 0 to 100% | |
| | Mini | Access to the min value setting | FUNCT SEGM Dsp x | | Setting of the display value of point x |
| | Maxi | Access to the max value setting | | from -19999 to 99999 | |
| Set Mini Input then | | Setting of the minimum value of the input signal with a connected sensor | INPUT CUTOF VALUE | | Setting of the cut-off value |
| Set Maxi Input then | | Setting of the maximum value of the input signal with a connected sensor | | from -19999 to 99999 | |

Definition of functions

Square root

The output(s) are function of the square root of the input

Segment Function

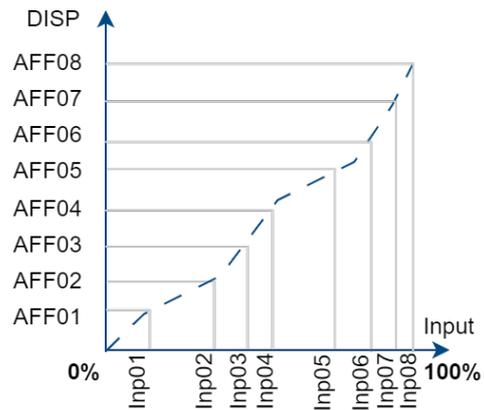
Linearization in 99 points (free choice for each point), allows to create an output function by segmentation of the signal of each input channel.

0% = $_Display$; 100% = $\bar{_}Display$

AFF01, AFF02, ... = Display value

INP01, INP02, ... = % of the input value

In the example opposite, 8 points (+0% & 100%) correspond to 9 segments



Absolute value

The output(s) are a function of the absolute value of a bidirectional input

Offset

Manual adjustment of the input offset

Filtering

Integration of the measurement over the defined time (in seconds)

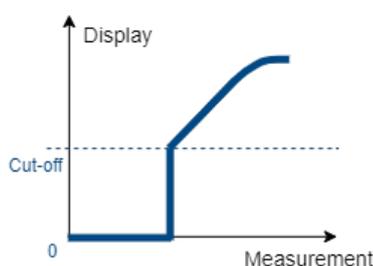
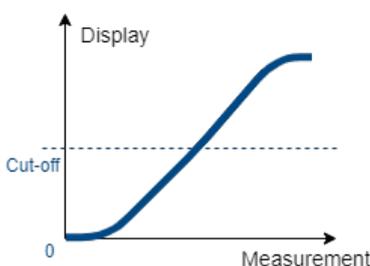
Cut-off

Threshold below which the input is considered as null

If Display value < Cut-off value, then Display value = Minimum display

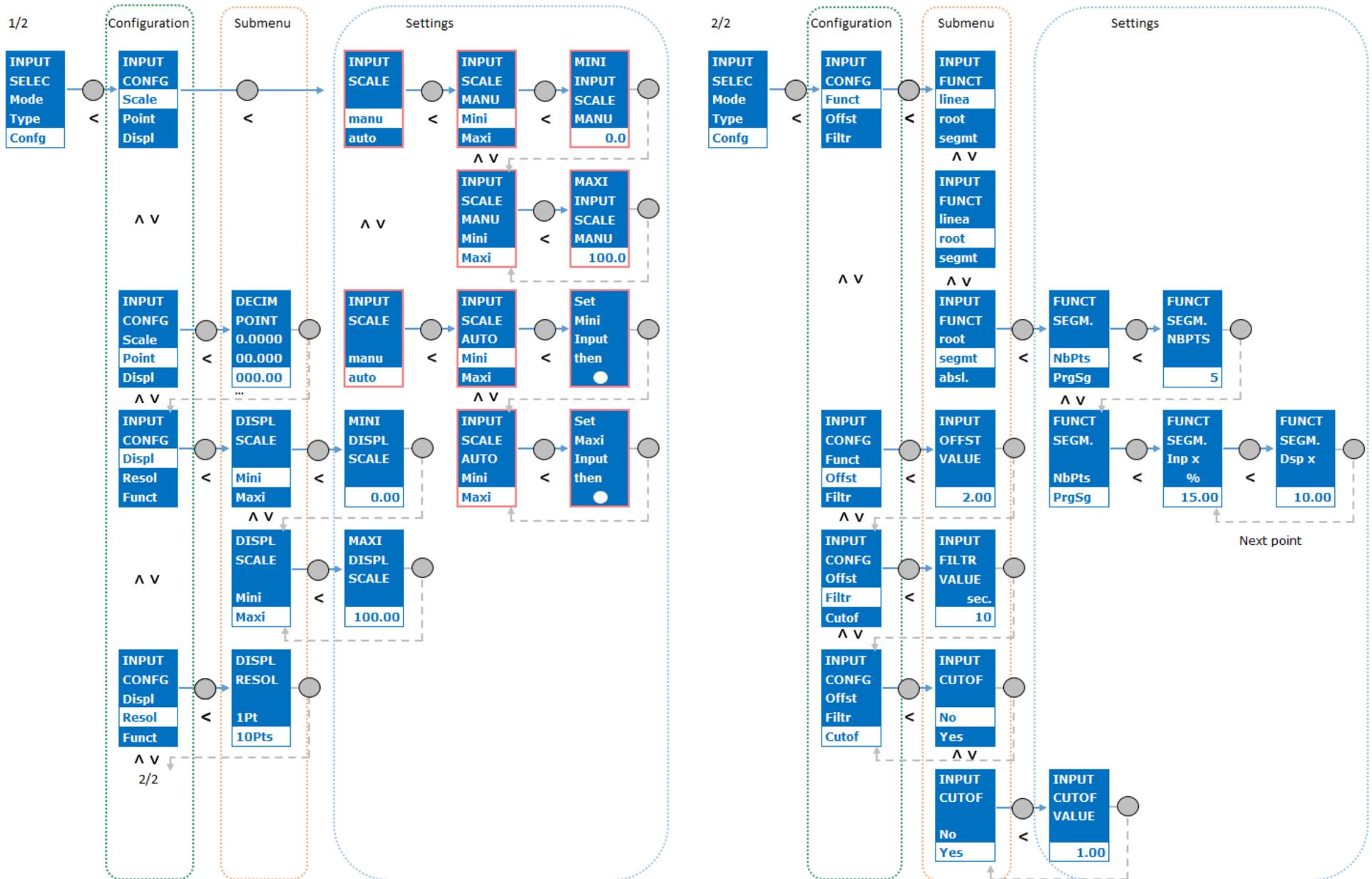
Before application of the cut-off

After application of the cut-off



Potentiometer input configuration

Diagram



Lexicon of screens

Configuration

| Screen | Value | Description | Value | Description |
|-------------|-------|--|--------|---------------------------------------|
| INPUT CONFG | | Input configuration | | |
| | Scale | Access to the choice of input gauges | Funct | Access to the function configuration |
| | Point | Access to the comma position setting | Offst | Access to the offset configuration |
| | Displ | Access to the display scales | Filtr | Access to the filtering configuration |
| | Resol | Accessing the resolution configuration | Cutoff | Access to the cut-off configuration |

Submenu

| Screen | Value | Description | Screen | Value | Description |
|-------------|--------|--|-------------------|----------------------|------------------------------|
| DECIM POINT | | Selection of the position of the comma | INPUT FUNCT | | Function Selection |
| | x.xxxx | Comma position | | linea | Linear function |
| DISPL SCALE | | Setting of the display scale | | root | Square root function |
| | Mini | Access to the min value setting | | segmt | Segment function access |
| | Maxi | Access to the max value setting | | absl. | Absolute value function |
| DISPL RESOL | | Selection of the display resolution | INPUT OFFST VALUE | | Offset Setting |
| | XPt(s) | Number of points | | from -19999 to 99999 | |
| | | | INPUT FILTR VALUE | | Setting of the filter value |
| | | | | from 0 to 250 | |
| | | | INPUT CUTOF | | Choice of use of the cut-off |
| | | | | Yes/No | |

Settings

| Screen | Value | Description | Screen | Value | Description |
|-----------------------|----------------|--|-------------------|----------------------|--|
| INPUT SCALE | | Mode selection Setting | MINI DISPL SCALE | | Setting of the minimum value of the display scale |
| | manu | Manual Setting | | from -19999 to 99999 | |
| | auto | Automatic Setting | MAXI DISPL SCALE | | Setting of the maximum value of the display scale |
| INPUT SCALE MANU | | Manual Setting of the special gauges | | from -19999 to 99999 | |
| | Mini | Access to the min value setting | FUNCT SEGMT. | | Configuration of the Segments Function |
| | Maxi | Access to the max value setting | | NbPts | Access to the configuration of the number of points |
| MINI INPUT SCALE MANU | | Manual Setting of the minimum value | | PrgSg | Access to the points configuration |
| | from 0 to 110% | | FUNCT SEGMT NBPTS | | Setting of the number of points |
| MAXI INPUT SCALE MANU | | Manual Setting of the maximum value | | from 1 to 99 | |
| | from 0 to 110% | | FUNCT SEGM Inp x | | Setting of the percentage of the point x input scale |
| INPUT SCALE AUTO | | Automatic Setting for special gauges | | from 0 to 100% | |
| | Mini | Access to the min value setting | FUNCT SEGM Dsp x | | Setting of the display value of point x |
| | Maxi | Access to the max value setting | | from -19999 to 99999 | |
| Set Mini Input then | | Setting of the minimum value of the input signal with a connected sensor | INPUT CUTOF VALUE | | Setting of the cut-off value |
| Set Maxi Input then | | Setting of the maximum value of the input signal with a connected sensor | | from -19999 to 99999 | |

Definition of functions

Square root

The output(s) are function of the square root of the input

Segment Function

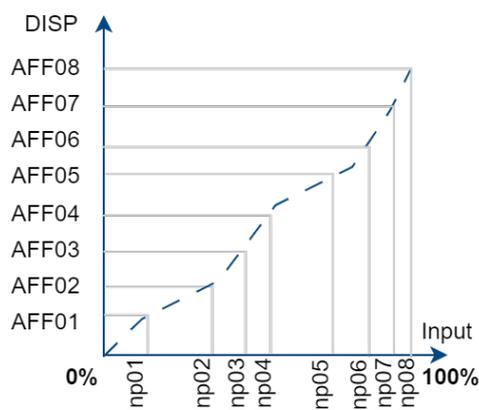
Linearization in 99 points (free choice for each point), allows to create an output function by segmentation of the signal of each input channel.

0% = $_Display$; 100% = $\bar{Display}$

AFF01, AFF02, ... = Display value

INP01, INP02, ... = % of the input value

In the example opposite, 8 points (+0% & 100%) correspond to 9 segments



Absolute value

The output(s) are a function of the absolute value of a bidirectional input

Offset

Manual adjustment of the input offset

Filtering

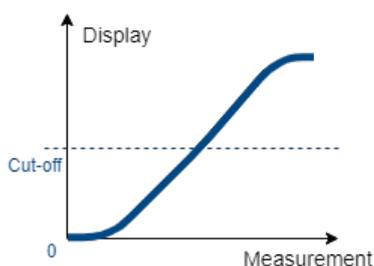
Integration of the measurement over the defined time (in seconds)

Cut-off

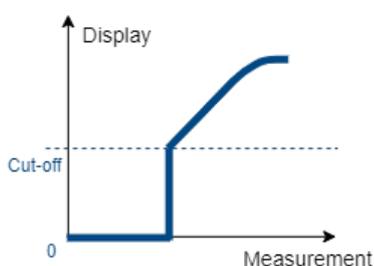
Threshold below which the input is considered as null

If Display value < Cut-off value, then Display value = Minimum display

Before application of the cut-off

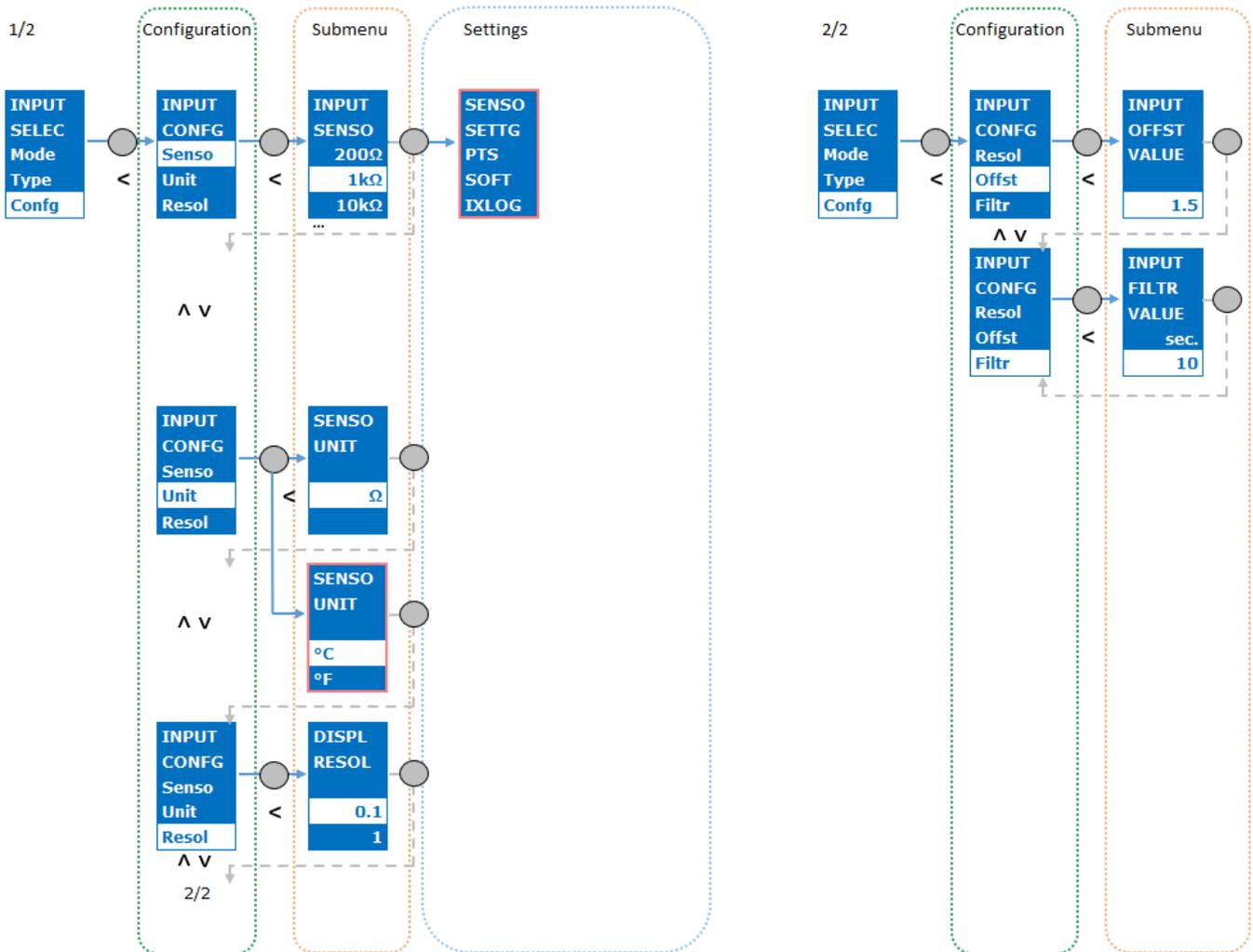


After application of the cut-off



Resistance input configuration

Diagram



Lexicon of screens

Configuration

| Screen | Value | Description | Value | Description |
|-------------|-------|--|-------|---------------------------------------|
| INPUT CONFG | | Input configuration | | |
| | Senso | Access to the choice of input gauges | Offst | Access to the offset configuration |
| | Unit | Access to unit configuration | Filtr | Access to the filtering configuration |
| | Resol | Accessing the resolution configuration | | |

Submenu

| Screen | Value | Description | Screen | Value | Description |
|-------------|--------|-------------------------|-------------------|----------------------|-------------------------------------|
| INPUT SENSO | | Gauges Selection | DISPL RESOL | | Selection of the display resolution |
| | XX | Standard gauges | | 0.1/1 | No change possible if 50KΩ choice |
| | SXX | Special gauges | INPUT OFFST VALUE | | Offset Setting |
| SENSO UNIT | | Unit Selection | | from -19999 to 99999 | |
| | Ω | for the standard gauges | INPUT FILTR VALUE | | Setting of the filter value |
| | °C /°F | for the special gauges | | from 0 to 250 | |

Settings

| Screen | Value | Description |
|---|-------|---|
| SENSO SETTG PTS SOFT IXLOG | | Special curve Setting with the IXLOG software |
| Return to the previous screen automatically after 5 seconds | | |

Definition of functions

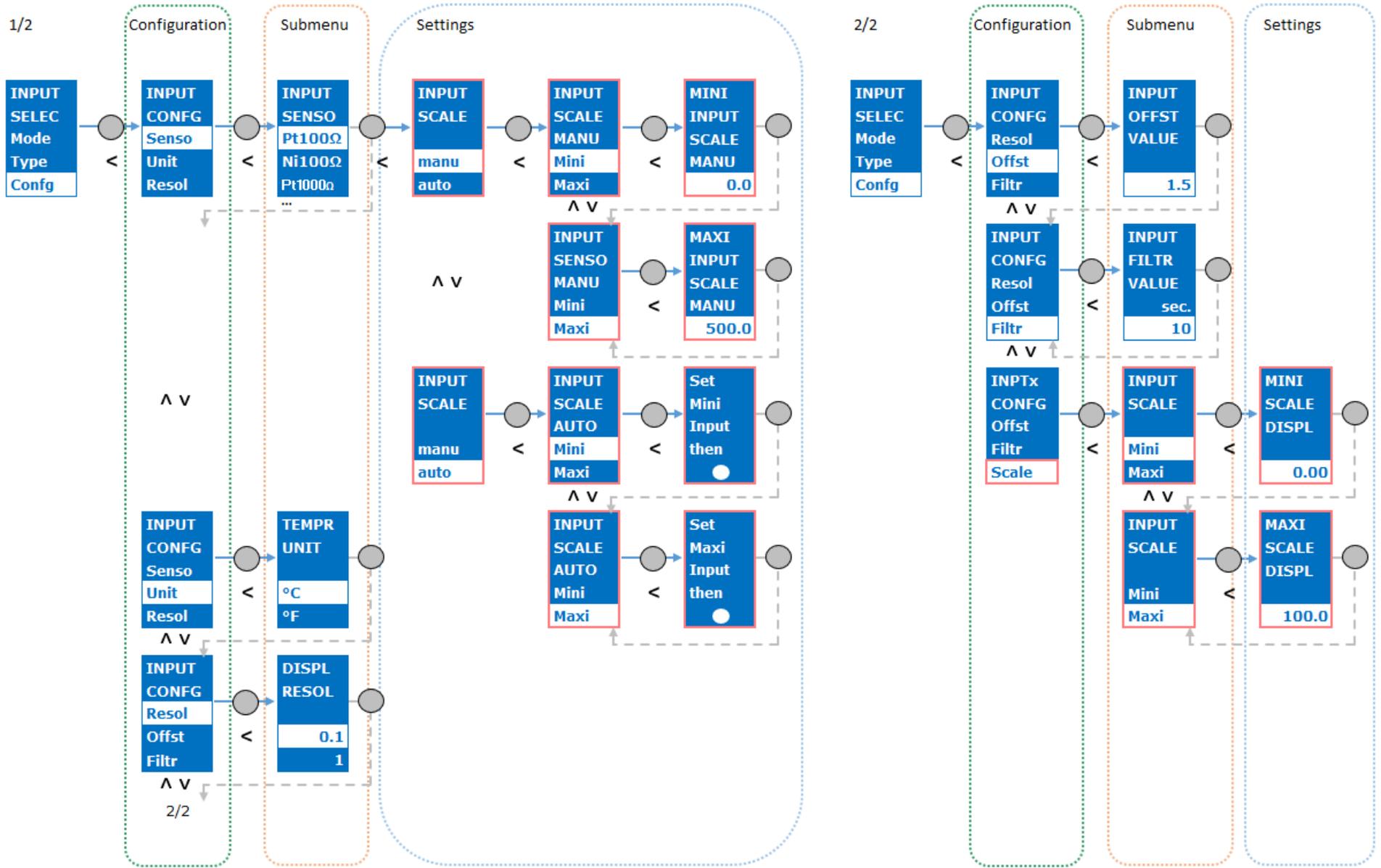
Offset

Manual adjustment of the input offset

Filtering

Integration of the measurement over the defined time (in seconds)

Diagram



Lexicon of screens

Configuration

| Screen | Value | Description | Value | Description |
|-------------|-------|--|-------|---------------------------------------|
| INPUT CONFG | | Input configuration | | |
| | Senso | Access to the choice of input gauges | Offst | Access to the offset configuration |
| | Unit | Access to unit configuration | Filtr | Access to the filtering configuration |
| | Resol | Accessing the resolution configuration | Scale | Access to the display scales |

Submenu

| Screen | Value | Description | Screen | Value | Description |
|-------------|-------|-------------------------------------|-------------------|-------|---------------------------------|
| INPUT SENSO | | Gauges Selection | INPUT OFFST VALUE | | Offset Setting |
| | XX | Standard gauges | | | from -19999 to 99999 |
| | SPXX | Special gauges | INPUT FILTR VALUE | | Setting of the filter value |
| TEMPR UNIT | | Unit Selection | | | from 0 to 250 |
| | °C/°F | | INPUT SCALE | | Setting of the display scale |
| DISPL RESOL | | Selection of the display resolution | | Mini | Access to the min value setting |
| | 0.1/1 | | | Maxi | Access to the max value setting |

Settings

| Screen | Value | Description | Screen | Value | Description |
|-----------------------|----------------------|--------------------------------------|---------------------|----------------------|--|
| INPUT SCALE | | Mode selection Setting | INPUT SCALE AUTO | | Automatic Setting for special gauges |
| | manu | Manual Setting | | Mini | Access to the min value setting |
| | auto | Automatic Setting | | Maxi | Access to the max value setting |
| INPUT SCALE MANU | | Manual Setting of the special gauges | Set Mini Input then | | Setting of the minimum value of the input signal with a connected sensor |
| | Mini | Access to the min value setting | Set Maxi Input then | | Setting of the maximum value of the input signal with a connected sensor |
| | Maxi | Access to the max value setting | MINI SCALE DISPL | | Setting of the minimum value of the display scale |
| MINI INPUT SCALE MANU | | Manual Setting of the minimum value | | from -19999 to 99999 | |
| | from -19999 to 99999 | | MAXI SCALE DISPL | | Setting of the maximum value of the display scale |
| MAXI INPUT SCALE MANU | | Manual Setting of the maximum value | | from -19999 to 99999 | |
| | from -19999 to 99999 | | | | |

Definition of functions

Offset

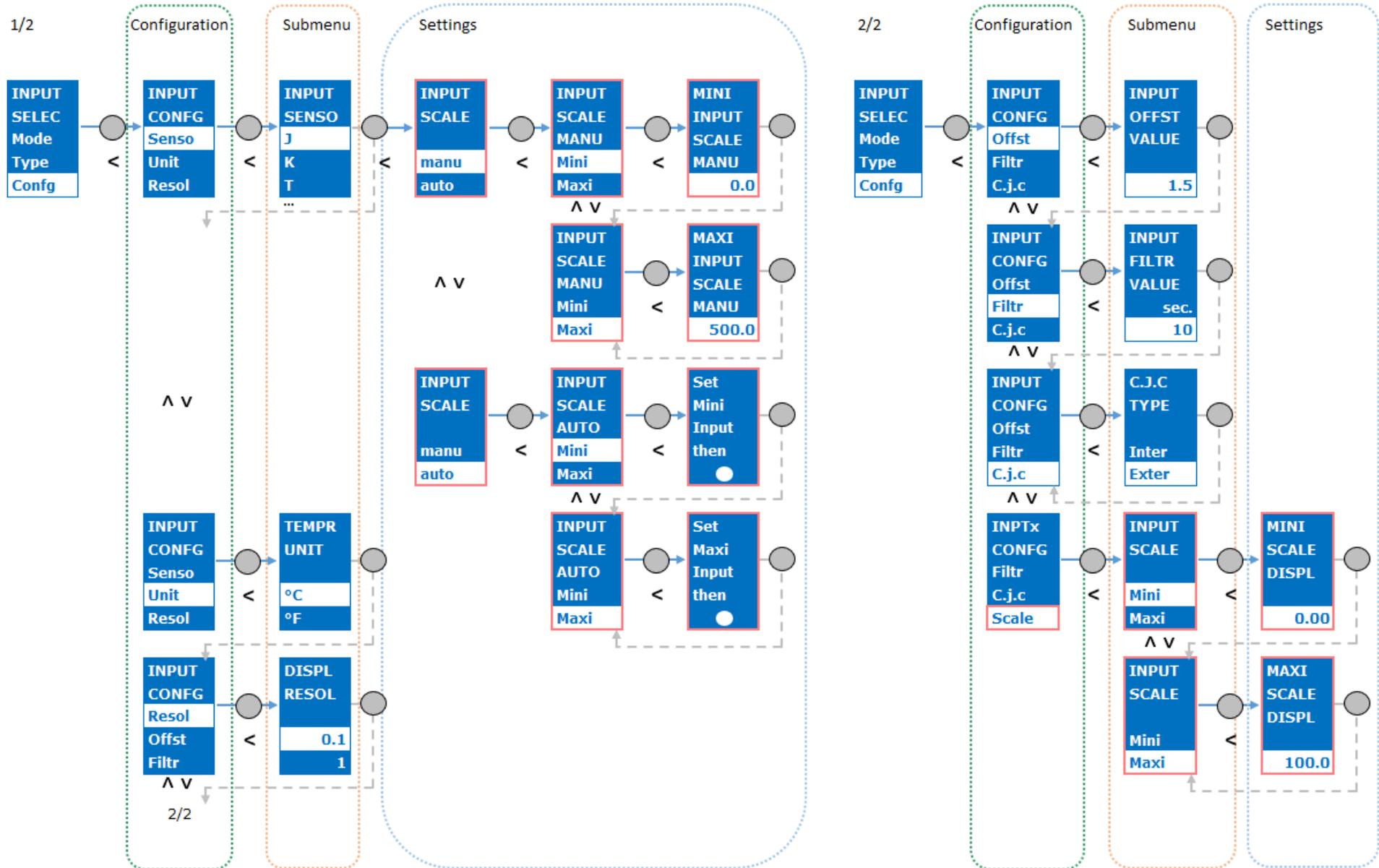
Manual adjustment of the input offset

Filtering

Integration of the measurement over the defined time (in seconds)

Thermocouple input configuration

Diagram



Lexicon of screens

Configuration

| Screen | Value | Description | Value | Description |
|-------------|-------|--|-------|---------------------------------------|
| INPUT CONFG | | Input configuration | | |
| | Senso | Access to the choice of input gauges | Offst | Access to the offset configuration |
| | Unit | Access to unit configuration | Filtr | Access to the filtering configuration |
| | Resol | Accessing the resolution configuration | C.j.c | Access to cold junction compensation |
| | | | Scale | Access to the display scales |

Submenu

| Screen | Value | Description | Screen | Value | Description |
|-------------------|-------|-------------------------------------|-------------------|-------|---------------------------------|
| INPUT SENSO | | Gauges Selection | INPUT FILTR VALUE | | Setting of the filter value |
| | XX | Standard gauges | | | from 0 to 250 |
| | SPXX | Special gauges | C.J.C. TYPE | | CJC type selection |
| TEMPR UNIT | | Unit Selection | | Inter | Internal |
| | °C/°F | | | Exter | External |
| DISPL RESOL | | Selection of the display resolution | INPUT SCALE | | Setting of the display scale |
| | 0.1/1 | | | Mini | Access to the min value setting |
| INPUT OFFST VALUE | | Offset Setting | | Maxi | Access to the max value setting |
| | | from -19999 to 99999 | | | |

Settings

| Screen | Value | Description | Screen | Value | Description |
|-----------------------|----------------------|--------------------------------------|---------------------|----------------------|--|
| INPUT SCALE | | Mode selection Setting | INPUT SCALE AUTO | | Automatic Setting for special gauges |
| | manu | Manual Setting | | Mini | Access to the min value setting |
| | auto | Automatic Setting | | Maxi | Access to the max value setting |
| INPUT SCALE MANU | | Manual Setting of the special gauges | Set Mini Input then | | Setting of the minimum value of the input signal with a connected sensor |
| | Mini | Access to the min value setting | Set Maxi Input then | | Setting of the maximum value of the input signal with a connected sensor |
| | Maxi | Access to the max value setting | MINI SCALE DISPL | | Setting of the minimum value of the display scale |
| MINI INPUT SCALE MANU | | Manual Setting of the minimum value | | from -19999 to 99999 | |
| | from -19999 to 99999 | | MAXI SCALE DISPL | | Setting of the maximum value of the display scale |
| MAXI INPUT SCALE MANU | | Manual Setting of the maximum value | | from -19999 to 99999 | |
| | from -19999 to 99999 | | | | |

Definition of functions

Offset

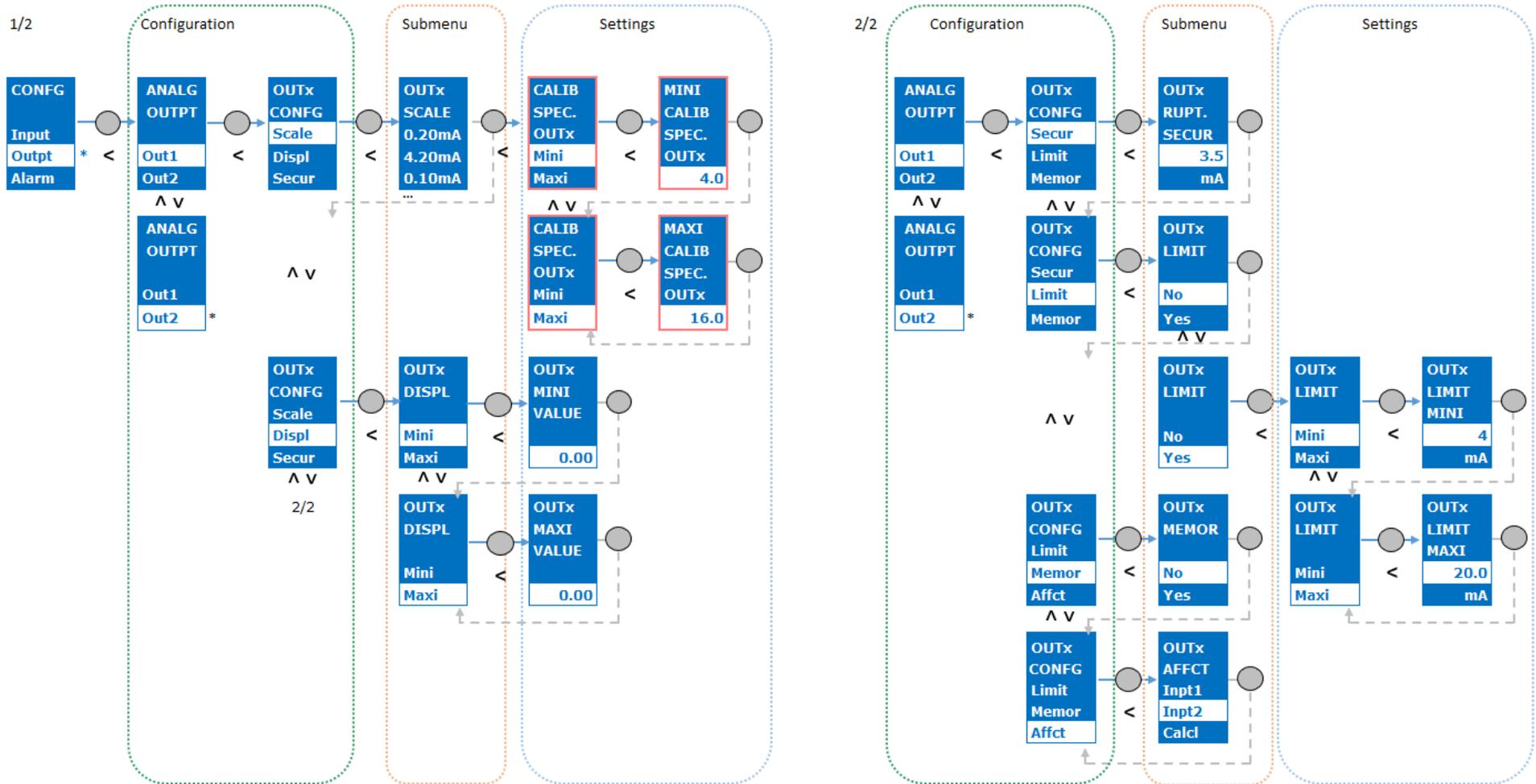
Manual adjustment of the input offset

Filtering

Integration of the measurement over the defined time (in seconds)

Diagram

*Menus available according to product reference



Lexicon of screens

Configuration

| Screen | Value | Description |
|-------------|-------|---------------------------------------|
| ANALG OUTPT | | Output Selection |
| | Outx | Output n°x |
| OUTx CONFG | | Output Configuration |
| | Scale | Access to the choice of output gauges |
| | Displ | Access to the display scales |
| | Secur | Security access |
| | Limit | Access to the Limit setting |
| | Memor | Access to the storage settings |
| | Affct | Assignment access |

Submenu

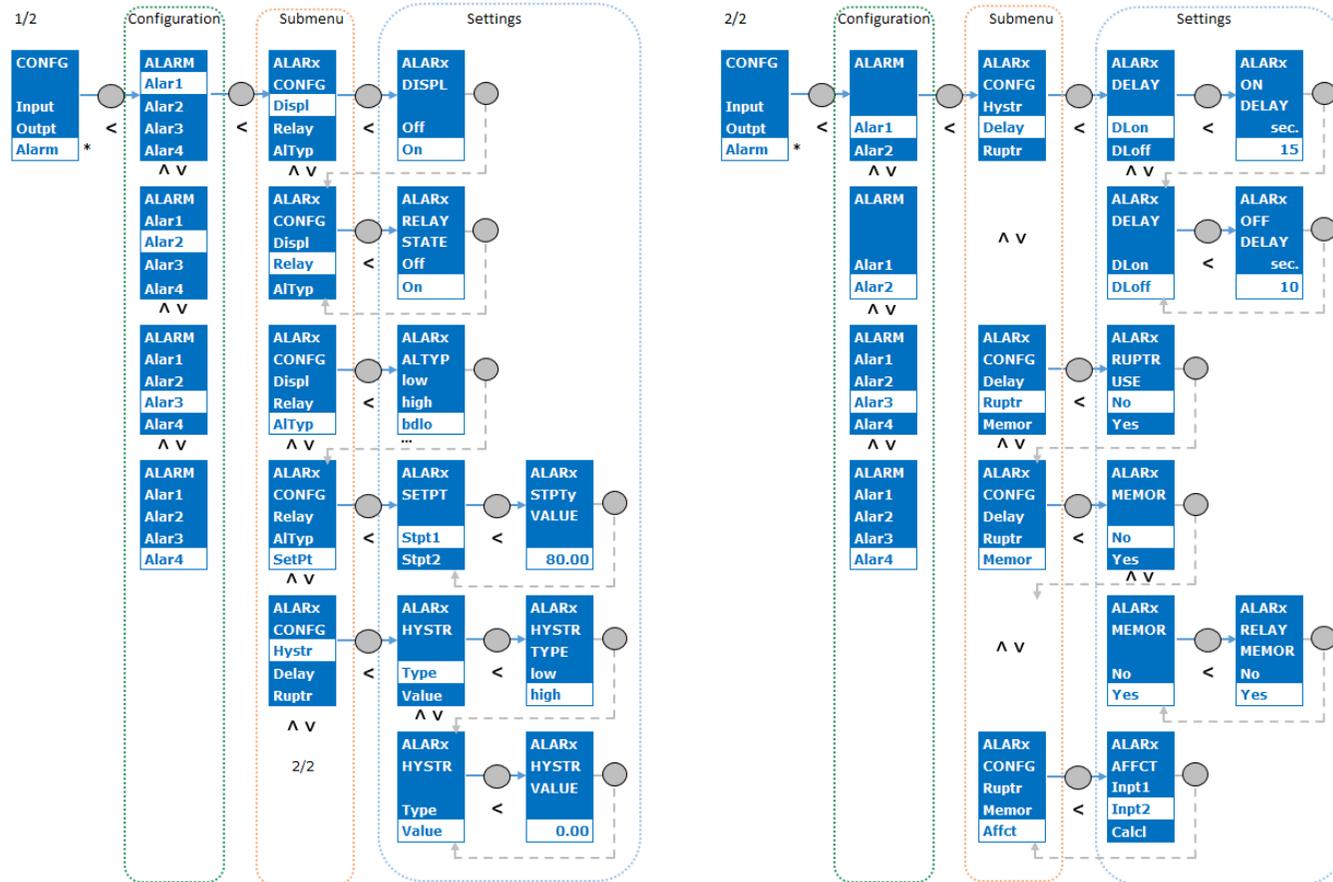
| Screen | Value | Description | Screen | Value | Description |
|------------------|---|------------------------------------|------------|--------|----------------------------------|
| OUTx SCALE | | Gauges Selection | OUTx LIMIT | | Choice of use of the limitation |
| | XX | Standard gauges | | Yes/No | |
| | Spe.XX | Special gauges | OUTx MEMOR | | Choice of use of memorization |
| | | | | Yes/No | |
| OUTx DISPL | | Setting of the display scale | OUTx AFFCT | | Selection of the input to assign |
| | Mini | Access to the min value setting | | Inptx | Input n°x |
| | Maxi | Access to the max value setting | | Calcl | Calculated input |
| OUTx RUPT. SECUR | | Setting of the sensor safety value | | | |
| | from 0 to 21mA ; from -11 to 11V for output 1 ; from 0 to 11 for output 2 | | | | |

Settings

| Screen | Value | Description | Screen | Value | Description |
|-----------------------|-------|---|-----------------|-------|---|
| CALIB SPEC. OUTx | | Setting of Special gauge | OUTx MAXI VALUE | | Maximum display value Configuration |
| | Mini | Access to the min value setting | | | from -19999 to 99999 |
| | Maxi | Access to the max value setting | OUTx LIMIT | | Limitation Setting |
| MINI CALIB SPEC. OUTx | | Setting of the minimum value of the special gauge | | Mini | Access to the min value setting |
| | | from 0 to 20mA ; from -10 to 10V for output 1 ; from 0 to 10 for output 2 | | Maxi | Access to the max value setting |
| MAXI CALIB SPEC. OUTx | | Setting of the maximum value of the special gauge | OUTx LIMIT MINI | | Setting of the minimum value of the limitation |
| | | from 0 to 20mA ; from -10 to 10V for output 1 ; from 0 to 10 for output 2 | | | from 0 to 21mA ; from -11 to 11V for output 1 ; from 0 to 11 for output 2 |
| OUTx MINI VALUE | | Minimum display value Configuration | OUTx LIMIT MAXI | | Setting of the maximum limitation value |
| | | from -19999 to 99999 | | | from 0 to 21mA ; from -11 to 11V for output 1 ; from 0 to 11 for output 2 |

Diagram

*Menu available according to product reference



Lexicon of screens

Configuration

| Screen | Value | Description |
|--------|-------|---|
| ALARM | | Alarm selection |
| | Alarx | Alarm n°x (the number of relays available depends on the product reference) |

Submenu

| Screen | Value | Description | Value | Description |
|-----------------|-------|--------------------------------------|-------|---|
| ALARx CONFIG | | Alarm configuration | | |
| | Displ | Access to the choice of display | Delay | Access to the time delay setting |
| | Relay | Access to the choice of relay status | Ruptr | Access to the parameterization of the sensor break-up |
| | AlTyp | Access to the choice of alarm type | Memor | Access to the storage settings |
| | SetPt | Access to the setting of thresholds | Affct | Access to the choice of alarm assignment |
| | Hustr | Access to the hysteresis settings | | |

Settings

| Screen | Value | Description | Screen | Value | Description |
|-------------------|--------|---|--------------------|----------------------|--|
| ALARx DISPL | | Choice of the alarm display | ALARx RUPTR USE | | Choice of use of the sensor break-up |
| | On/Off | | | Yes/No | |
| ALARx RELAY STATE | | Choice of relay activation | ALARx MEMOR | | Choice of use of memorization |
| | On/Off | | | Yes/No | |
| ALARx ALTYP | | Selection of the type of alarm | ALARx SETPTy VALUE | | Setting the alarm threshold |
| | low | Low threshold alarm | | from -19999 to 99999 | |
| | high | High threshold alarm | ALARx HYSTR TYPE | | Selection of the hysteresis type |
| | bdlo | Low band alarm | | low | Low hysteresis |
| | bdhi | High band alarm | | high | High hysteresis |
| ALARx SETPT | | Selection of the alarm threshold | ALARx HYSTR VALU E | | Setting of the hysteresis value |
| | Stptx | Threshold n°x | | from 0 to 99999 | |
| ALARx HYSTR | | Hysteresis configuration | ALARx ON/OFF DELAY | | Setting of the time delay value |
| | Type | Access to the choice of the hysteresis type | | from 0 to 250 | |
| | Value | Access to the hysteresis value setting | ALARx RELAY MEMOR | | Choice of whether to maintain the relay after the alarm disappears |
| ALARx DELAY | | Time delay configuration | | Yes/No | |
| | DLon | Access to the setting of the time delay when the alarm is activated | ALARx AFFCT | | Selection of the input to assign |
| | DLOff | Access to the setting of the time delay when the alarm is deactivated | | Inptx | Input n°x |
| | | | | Calcl | Calculated input |

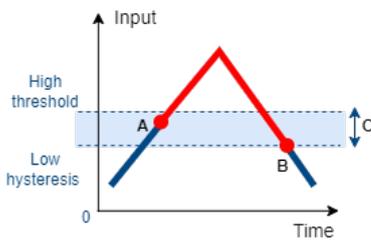
Definition of hysteresis

Hysteresis makes it possible to define, near a certain threshold, an area in which the alarm is insensitive to variations of the input and does not change state.

This makes it possible to limit changes of the alarm state when the input undergoes variations in value is close to the alarm threshold.

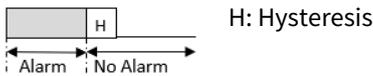
The defined hysteresis value is a value relative to the threshold value.

- High type: the insensitive area extends from the alarm threshold to the higher values
- Low type: the insensitive area extends from the alarm threshold to the lower values

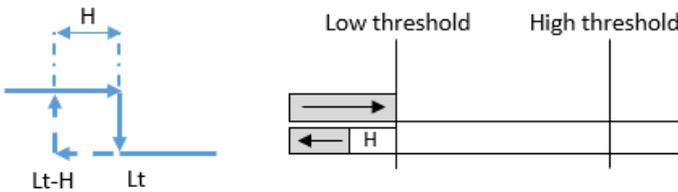


A: Start of alarm
 B: End of alarm
 C: Insensitive area

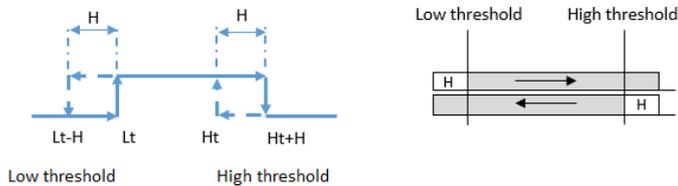
Low hysteresis



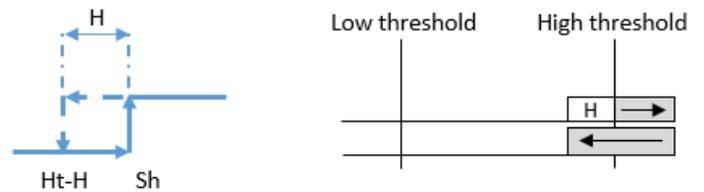
- Low threshold (Lt) alarm



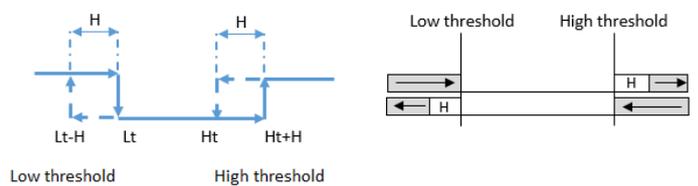
- Low band alarm



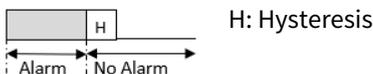
- High threshold (Ht) alarm



- High band alarm

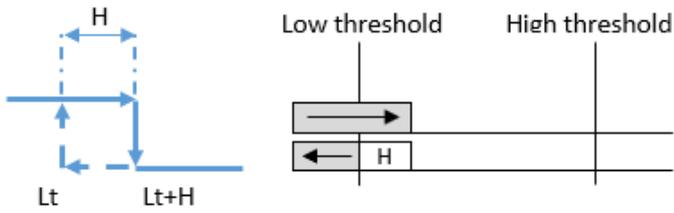


High hysteresis

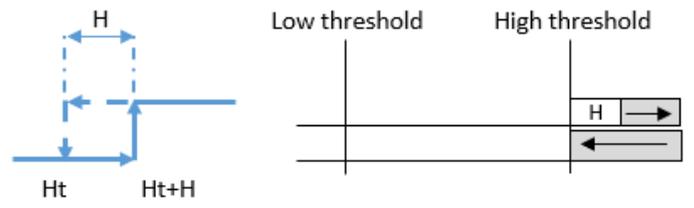


- Low threshold (Lt) alarm

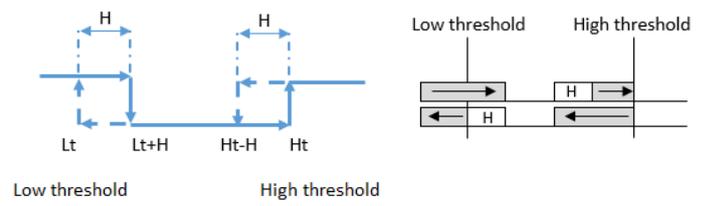
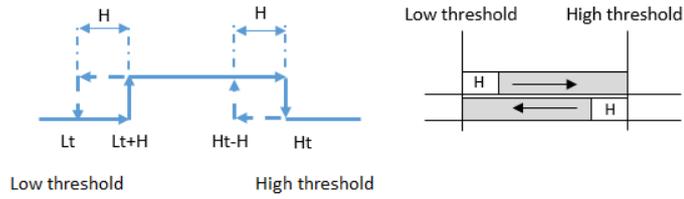
- High threshold (Ht) alarm



• Low band alarm



• High band alarm



Low threshold High threshold

Low threshold High threshold

MODBUS Protocol

Introduction

The products developed by JM Concept use the MODBUS RTU communication protocol on their backplane bus, to exchange information between different devices. The physical link used for this communication is the RS485 link.

JM Concept devices are generally considered slave devices on the MODBUS RTU line, responding only to queries. Some JM Concept devices allow to interface on the MODBUS RTU line (LINE, WK 6000IS, WK 6000MUX, UHLIS 3000TCP, UHLIS 3000MUX), they are considered master devices, generating queries on the bus.

A PLC communicating in MODBUS RTU can be directly interfaced on the MODBUS RTU as a master.

For PLCs communicating with other protocols such as Profinet, Ethernet IP, MODBUS TCP, Profibus, there are protocol conversion solutions.

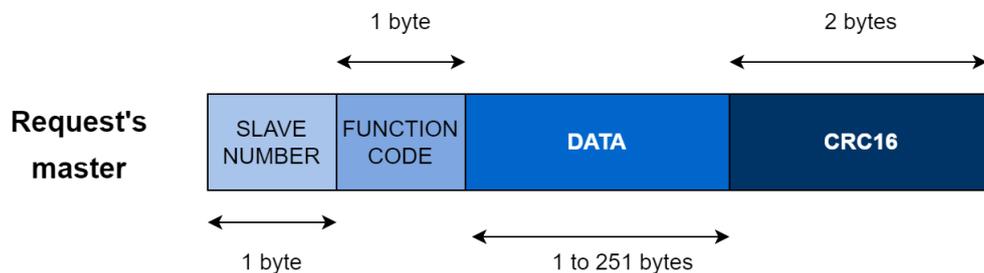
- The LINE product is a communication hub. It retrieves all the information of the JM Concept devices present on the MODBUS RTU line and makes them available to PLC via the Profinet, Ethernet IP, Modbus TCP, Profibus or MODBUS RTU protocols.
- The WK 6000IS WK 6000MUX, UHLIS 3000TCP and UHLIS 3000MUX products act as MODBUS TCP gateways to MODBUS RTU. They therefore allow a PLC communicating in MODBUS TCP to interact directly with a JM Concept device on the MODBUS RTU line.

The Modbus protocol is a communication protocol based on a hierarchical structure between a master and several slaves. The master can only talk to one slave at a time and waits for its response.

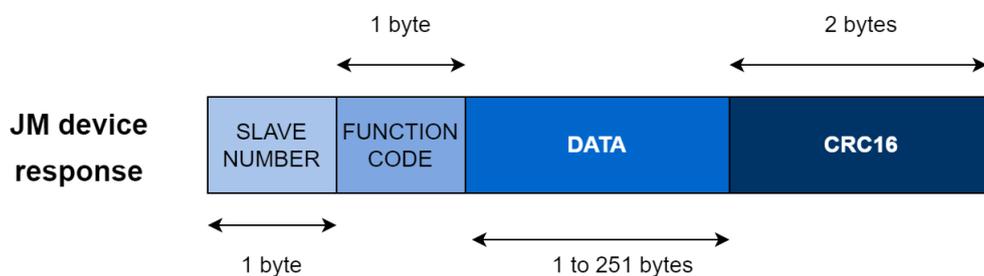
| RS485 communication settings | Description |
|--|--|
| Configurable slave number | 1 to 247 |
| Communication speed (bauds) | 1200, 2400, 4800, 9600,19200, 38400,115200 |
| Type of transmission | RTU mode |
| Type of data transmitted | 8-bit encoded characters |
| Bit of controls verifying the integrity of MODBUS frames | <ul style="list-style-type: none"> • 1 start bit and 1 stop bit • No control of the frame according to the parity criterion (except MRSLINE even parity) |
| Number of slave devices (maximum) connected to 1 master device | <ul style="list-style-type: none"> • 32 (maximum number of devices) • 24 (maximum number of devices connected to a product of the LINE range) |
| Maximum line length | 1200m |
| Link type | Multipoint link |

MODBUS Messages - Structures and Data Types

The master begins the communication by sending a request to the desired slave in the following frame format:



Following the receipt of a request sent by a master device, JM devices return the requested information in the same frame format:

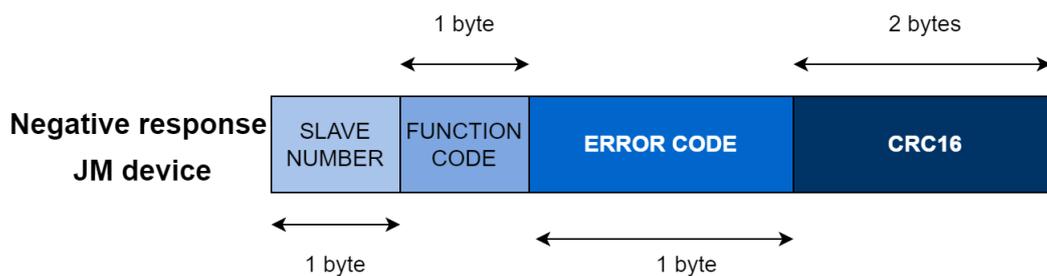


- Slave number: The slave number of the JM Concept device queried (1 to 247)
- Function code: Action requested from the slave, read, or write. JM Concept products support 4 codes depending on the MODBUS protocol:

| Function codes | Description |
|-------------------|--|
| Function code: 1 | N-bit playback (access per 1-byte multiple) |
| Function code: 3 | Reading n 16-bit words (2-byte multiple access) |
| Function code: 15 | Writing n bits (access by multiple of 1 byte) |
| Function code: 16 | Writing n 16-bit words (access by multiple of 4 bytes) |

- Data: Contains data relative to the function
 - Request:
 - For a read: address and number of data to read.
 - For a write: address, number of values, and values to write.
 - Answer:
 - For a read: Number of data and data read.
 - For a write: address and number of data written.
- CRC16: Control Field

In the event of an error in communication, JM devices will return an error message, following the following frame format:



- The function code returned is the function code of the last program command executed, with the MSB (most significant Bit) forced to 1 if an error was detected at runtime.
- An error code is sent to the master device specifying the detected error:

| Error code | Description |
|---------------|------------------------|
| Error code: 1 | Unknown function code |
| Error code: 2 | Incorrect |
| Error code: 3 | Incorrect data |
| Error code: 4 | Slave device not ready |

The data available for reading and writing are referenced in the "MODBUS exchange table" section below.

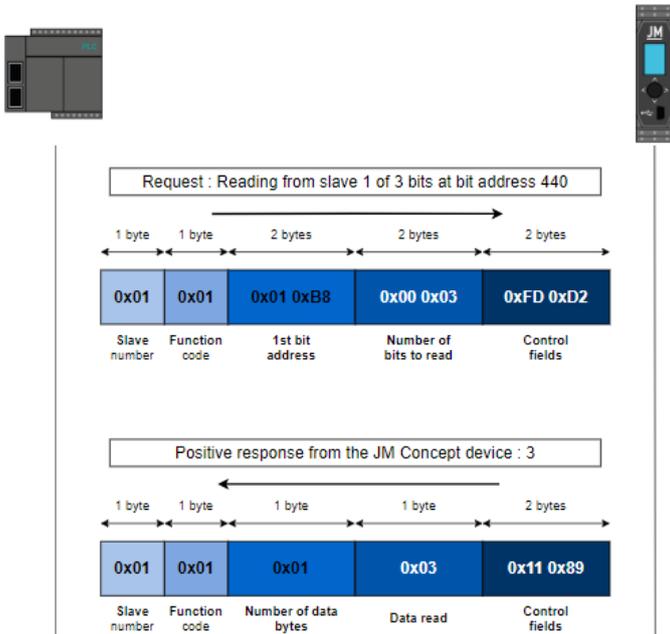
The data is stored in the product's memory in big-endian format, the most significant bytes are placed in the lead and therefore occupy memory locations with smaller addresses. Depending on the devices interfaced with JM Concept products, it may be necessary to reverse the 2 words of 16 bits when reading a float.

Example of in-memory storage of the float 10000 :

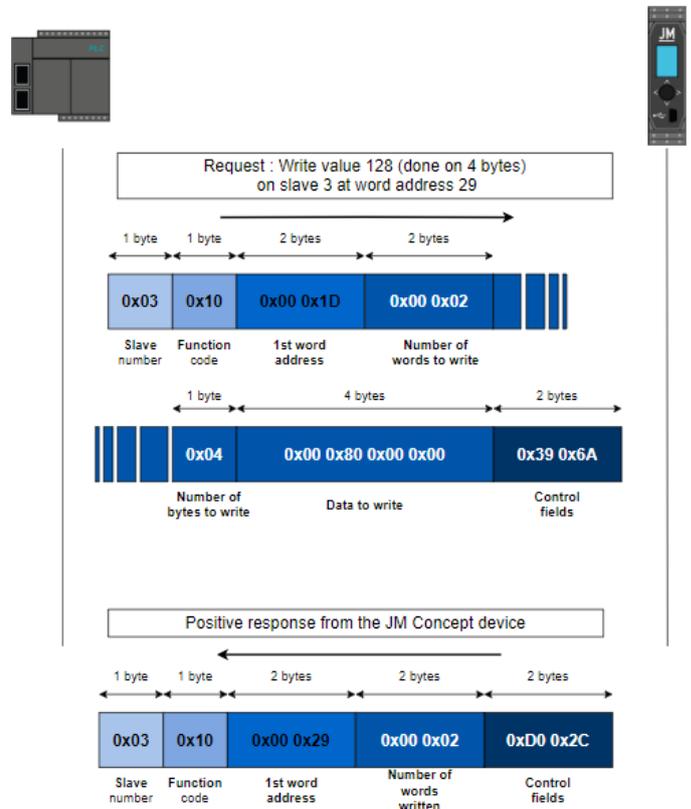
| 16-bit word memory address | Memory address in byte | Data | MSB and LSB arrangement |
|----------------------------|------------------------|------|-------------------------|
| 0 | 0 | 0x47 | Most significant MSB |
| | 1 | 0xC3 | |
| 2 | 2 | 0050 | Least significant LSB |
| | 3 | 0x00 | |

Some use cases

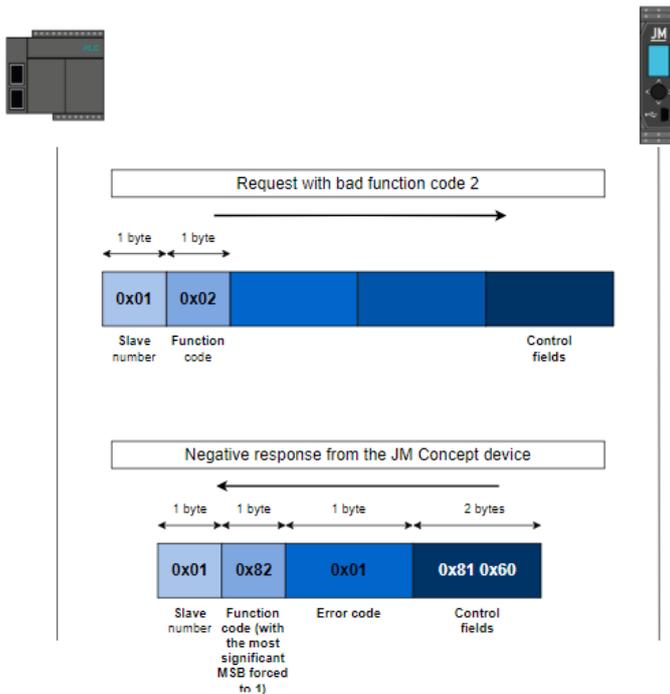
Reading n bits - Positive response



Writing n words - Positive response



Function code error - Negative response



MODBUS exchange table

 The “P” column (for Permissions) indicates the type of access that can be performed on each variable. R=read ; W=write ; R/W=read and write.

Measurement values

| @Jbus word | @Jbus bit | Variable designation | Format | P |
|------------|-----------|--|--------|---|
| 0 | | Instant measurement of input 1 | Float | R |
| 2 | | Minimum measurement of input 1 | Float | |
| 4 | | Maximum measurement of input 1 | Float | |
| 6 | | Instant measurement of input 2 | Float | |
| 8 | | Minimum measurement of input 2 | Float | |
| 10 | | Maximum measurement of input 2 | Float | |
| 12 | | Instant measurement of the "calculation" channel | Float | |
| 14 | | Minimum measurement of the calculation channel | Float | |
| 16 | | Maximum measurement of the calculation channel | Float | |

Device identification

| @Jbus word | @Jbus bit | Variable designation | Format | P |
|------------|-----------|----------------------------------|--------|---|
| 18 | 288 | Serial number, current year | Byte | R |
| | 296 | Serial number, current month | Byte | |
| 19 | | Serial number, rank in the month | Int | |
| 20 | | Device type | Int | |
| 21 | 336 | Options installed | Byte | |
| | 344 | Software version | Byte | |

Modbus settings

| @Jbus word | @Jbus bit | Variable designation | Format | P |
|------------|-----------|-------------------------|--------|-----|
| 23 | 368 | Modbus network n° slave | Byte | R/W |
| | 376 | Baud rate | Byte | |

Protection Configuration

| @Jbus word | @Jbus bit | Variable designation | Format | P |
|------------|-----------|-------------------------|--------|-----|
| 24 | 384 | Configuration lock | Byte | R/W |
| | 392 | Access to configuration | Byte | |

Display settings

| @Jbus word | @Jbus bit | Variable designation | Format | P |
|------------|-----------|----------------------|--------|-----|
| 25 | 400 | Backlight off | Byte | R/W |
| | 408 | LCD contrast | Byte | |

Simulation/remote-control settings

| @Jbus word | @Jbus bit | Variable designation | Format | P |
|------------|-----------|---|--------|-----|
| 26 | 416 | Simulation/Remote-control mode | Byte | R/W |
| | 424 | Return to measurement after simulation/Remote-control | Byte | |

Inputs configuration

| @Jbus word | @Jbus bit | Variable designation | Format | P |
|------------|-----------|----------------------|--------|-----|
| 27 | 432 | Input use mode | Byte | R/W |
| | | | | |

Input 1 configuration

| @Jbus word | @Jbus bit | Variable designation | Format | P |
|------------|-----------|------------------------------------|--------|-----|
| 27 | | | | R/W |
| | 440 | Input type | Byte | |
| 28 | 448 | Gauge for Current | Byte | |
| | 456 | Gauge for Voltage | Byte | |
| 29 | 464 | Sensor for resistance input | Byte | |
| | 472 | Sensor for RTD input | Byte | |
| 30 | 480 | Sensor for thermocouple input | Byte | |
| | 488 | Function for input | Byte | |
| 31 | 496 | Display resolution | Byte | |
| | 504 | Comma position | Byte | |
| 32 | 512 | Unit input (if Pt100Ω) | Byte | |
| | 520 | C.J.C type (if thermocouple input) | Byte | |
| 33 | 528 | Use of the cut-off | Byte | |
| | 536 | Digital filter | Byte | |
| 34 | | Minimum gauge value | Float | |
| 36 | | Maximum gauge value | Float | |
| 38 | | Minimum display value | Float | |
| 40 | | Maximum display value | Float | |
| 42 | | Cut-off value | Float | |
| 44 | | Offset value | Float | |

Current input 2 configuration

| @Jbus word | @Jbus bit | Variable designation | Format | P |
|------------|-----------|--|--------|-----|
| 48 | 768 | Gauge for Current | Byte | R/W |
| | 776 | Comma position | Byte | |
| 49 | 784 | Display resolution | Byte | |
| | 792 | Use of the cut-off | Byte | |
| 50 | 800 | Digital filter | Byte | |
| | 808 | Operation for the calculation function | Byte | |
| 51 | | Minimum gauge value | Float | |
| 53 | | Maximum gauge value | Float | |
| 55 | | Minimum display value | Float | |
| 57 | | Maximum display value | Float | |
| 59 | | Cut-off value | Float | |
| 61 | | Offset value | Float | |

calculation virtual channel configuration

| @Jbus word | @Jbus bit | Variable designation | Format | P |
|------------|-----------|--|--------|-----|
| 65 | | Coefficient A for the calculation function | Float | R/W |
| 67 | | Coefficient B for the calculation function | Float | |
| 69 | | Minimum display value on the calculation channel | Float | |
| 71 | | Maximum display value on the calculation channel | Float | |

Output measurements

| @Jbus word | @Jbus bit | Variable designation | Format | P |
|------------|-----------|--------------------------------|--------|---|
| 73 | | S.A1 Instant output level | Float | R |
| 75 | | S.A2 Instant output level | Float | |
| 77 | | | | |
| 78 | | Output S.A1 level memorization | Float | R |
| 80 | | Output S.A2 level memorization | Float | |

Acquisition of alarms and relays (values and acknowledgement)

| @Jbus word | @Jbus bit | Variable designation | Format | P |
|------------|-----------|---|--------|-----|
| 82 | 1312 | Acknowledgment of alarms and reset of min / max | Byte | R/W |
| | | | | |
| 83 | 1328 | Relay RL1 status | Byte | R |
| | 1336 | Relay RL2 status | Byte | |
| 84 | 1344 | Relay RL3 status | Byte | |
| | 1352 | Relay RL4 status | Byte | |
| 85 | 1360 | Instant alarms status | Byte | |
| | 1368 | Memorized states of alarms | Byte | |

Input measurements

| @Jbus word | @Jbus bit | Variable designation | Format | P |
|------------|-----------|--|--------|-----|
| 87 | | Physical measurement of the calculation channel | Float | R |
| 89 | | Simulated/Remote-controlled measurement of the calculation channel | Float | R/W |
| 91 | | Physical measurement of input 2 | Float | R |
| 93 | | Simulated/Remote-controlled measurement of the input 2 | Float | R/W |
| 95 | | Physical measurement of input 1 | Float | R |
| 97 | | Simulated/Remote-controlled measurement of the input 1 | Float | R/W |

Output S.A1 configuration

| @Jbus word | @Jbus bit | Variable designation | Format | P |
|------------|-----------|--------------------------------------|--------|-----|
| 99 | 1584 | Gauge | Byte | R/W |
| | 1592 | Output assignment | Byte | |
| 100 | | Minimum gauge value | Float | |
| 102 | | Maximum gauge value | Float | |
| 104 | | Minimum display value | Float | |
| 106 | | Maximum display value | Float | |
| 108 | 1728 | Use of the output limitation | Byte | |
| | 1736 | Last value memorization (anomaly) | Byte | |
| 109 | | Output safety value (input break-up) | Int | |
| 110 | | Low limitation | Float | |
| 112 | | High limitation | Float | |

Output S.A2 configuration

| @Jbus word | @Jbus bit | Variable designation | Format | P |
|------------|-----------|--------------------------------------|--------|-----|
| 114 | 1824 | Gauge | Byte | R/W |
| | 1832 | Output assignment | Byte | |
| 115 | | Minimum gauge value | Float | |
| 117 | | Maximum gauge value | Float | |
| 119 | | Minimum display value | Float | |
| 121 | | Maximum display value | Float | |
| 123 | 1968 | Use of the output limitation | Byte | |
| | 1976 | Last value memorization (anomaly) | Byte | |
| 124 | | Output safety value (input break-up) | Int | |
| 125 | | Low limitation | Float | |
| 127 | | High limitation | Float | |

Relay RL1 configuration

| @Jbus word | @Jbus bit | Variable designation | Format | P |
|------------|-----------|--|--------|-----|
| 129 | 2064 | Alarm AL1 memorization | Byte | R/W |
| | 2072 | Memorization of the state of relay RL1 | Byte | |
| 130 | 2080 | Visualization of the alarm AL1 | Byte | |
| | 2088 | Relay RL1 status in alarm | Byte | |
| 131 | 2096 | AL1 operating mode | Byte | |
| | 2104 | AL1 hysteresis direction | Byte | |
| 132 | 2112 | Time delay "on" on AL1 | Byte | |
| | 2120 | Time delay "off" on AL1 | Byte | |
| 133 | 2128 | Use of AL1 if input break-up | Byte | |
| | 2136 | Alarm AL1 assignment | Byte | |
| 134 | | Threshold 1 value of AL1 | Float | |
| 136 | | Threshold 2 value of AL1 | Float | |
| 138 | | AL1 hysteresis value | Float | |

Relay RL2 configuration

| @Jbus word | @Jbus bit | Variable designation | Format | P |
|------------|-----------|--|--------|-----|
| 140 | 2240 | Alarm AL2 memorization | Byte | R/W |
| | 2248 | Memorization of the state of relay RL2 | Byte | |
| 141 | 2256 | Visualization of the alarm AL2 | Byte | |
| | 2264 | Relay RL2 status in alarm | Byte | |
| 142 | 2272 | AL2 operating mode | Byte | |
| | 2280 | AL2 hysteresis direction | Byte | |
| 143 | 2288 | Time delay "on" on AL2 | Byte | |
| | 2296 | Time delay "off" on AL2 | Byte | |
| 144 | 2304 | Use of AL2 if input break-up | Byte | |
| | 2312 | Alarm AL2 assignment | Byte | |
| 145 | | Threshold 1 value of AL2 | Float | |
| 147 | | Threshold 2 value of AL2 | Float | |
| 149 | | AL2 hysteresis value | Float | |

Relay RL3 configuration

| @Jbus word | @Jbus bit | Variable designation | Format | P |
|------------|-----------|--|--------|-----|
| 151 | 2416 | Alarm AL3 memorization | Byte | R/W |
| | 2424 | Memorization of the state of relay RL3 | Byte | |
| 152 | 2432 | Visualization of the alarm AL3 | Byte | |
| | 2440 | Relay RL3 status in alarm | Byte | |
| 153 | 2448 | AL3 operating mode | Byte | |
| | 2456 | AL3 hysteresis direction | Byte | |
| 154 | 2464 | Time delay "on" on AL3 | Byte | |
| | 2472 | Time delay "off" on AL3 | Byte | |
| 155 | 2480 | Use of AL3 if input break-up | Byte | |
| | 2488 | Alarm AL3 assignment | Byte | |
| 156 | | Threshold 1 value of AL3 | Float | |
| 158 | | Threshold 2 value of AL3 | Float | |
| 160 | | AL3 hysteresis value | Float | |

Relay RL4 configuration

| @Jbus word | @Jbus bit | Variable designation | Format | P |
|------------|-----------|--|--------|-----|
| 162 | 2592 | Alarm AL4 memorization | Byte | R/W |
| | 2600 | Memorization of the state of relay RL4 | Byte | |
| 163 | 2608 | Visualization of the alarm AL4 | Byte | |
| | 2616 | Relay RL4 status in alarm | Byte | |
| 164 | 2624 | AL4 operating mode | Byte | |
| | 2632 | AL4 hysteresis direction | Byte | |
| 165 | 2640 | Time delay "on" on AL4 | Byte | |
| | 2648 | Time delay "off" on AL4 | Byte | |
| 166 | 2656 | Use of AL4 if input break-up | Byte | |
| | 2664 | Alarm AL4 assignment | Byte | |
| 167 | | Threshold 1 value of AL4 | Float | |
| 169 | | Threshold 2 value of AL4 | Float | |
| 171 | | AL4 hysteresis value | Float | |

Segments function for input 1

| @Jbus word | @Jbus bit | Variable designation | Format | P |
|------------|-----------|--------------------------------|--------|-----|
| 173 | 2768 | Number of linearization points | Byte | R/W |
| | | | | |
| 174 | | % Input point 1 | Float | R/W |
| 176 | | Display of point 1 | Float | |
| ... | | ... | ... | |
| 170+4N | | % Input point N | Float | |
| 172+4N | | Display of point N | Float | |
| ... | | ... | ... | |
| 566 | | % Input point 99 | Float | |
| 568 | | Display of point 99 | Float | |

Customer mapping zone

| @Jbus word | @Jbus bit | Variable designation | Format | P |
|------------|-----------|-----------------------------|--------|-----|
| 6 000 | | 174 bytes of client mapping | Byte | R/W |
| | | | Byte | |
| ... | | | ... | |
| 6 086 | | | Byte | |
| | | | Byte | |

Tag zone

| @Jbus word | @Jbus bit | Variable designation | Format | P |
|------------|-----------|----------------------|--------|-----|
| 6 118 | | 20 bytes tag | Byte | R/W |
| | | | Byte | |
| ... | | | ... | |
| 6 127 | | | Byte | |
| | | | Byte | |

Device comments zone

| @Jbus word | @Jbus bit | Variable designation | Format | P |
|------------|-----------|----------------------|--------|-----|
| 6 128 | | 80 bytes comment | Byte | R/W |
| | | | Byte | |
| ... | | | ... | |
| 6 167 | | | Byte | |
| | | | Byte | |

Input 1 Special resistances table

| @Jbus word | @Jbus bit | Variable designation | Format | P |
|------------|-----------|---------------------------|--------|-----|
| 7021 | | Number of points | Byte | R/W |
| 7023 | | Coordinate X of point 1 | Float | |
| 7025 | | Coordinate Y of point 1 | Float | |
| ... | | ... | ... | |
| 7421 | | Coordinate X of point 100 | Float | |
| 7423 | | Coordinate Y of point 100 | Float | |

Guarantee certificate

CERTIFICAT DE GARANTIE - 5 ans

GUARANTEE CERTIFICATE - 5 years

GAMME TELIS / TELIS RANGE

Nous vous garantissons que ce produit est conforme aux réglementations en vigueur, et qu'il ne présente aucun défaut de conception et de fabrication au moment du contrôle individuel.

We guarantee that this product complies with the regulations in force, and that it has no design defect and workmanship at the time of individual control.

CONDITIONS D'APPLICATION

Les opérations de manutention et de maintenance devront être effectuées uniquement par du personnel qualifié et autorisé.

Toute ouverture de produit entraîne immédiatement l'annulation de la garantie.

Si un appareil ne peut plus être utilisé dans les conditions de sécurité optimales, il doit être mis hors service et protégé contre toute utilisation par inadvertance, avant d'être retourné chez JM Concept.

Les réparations se font uniquement dans les locaux de JM Concept.

Toute installation ne correspondant pas aux impératifs de montage entraîne l'annulation de la garantie.

CONDITIONS OF APPLICATION

Handling or maintenance operations should only be carried out by qualified and authorized staff.

Once product is opened, it immediately invalidates the guarantee.

If a device can no longer be used with optimal safety conditions, it should be put of order and protected against any inadvertent use, before it is returned to JM Concept.

All repairs are made solely in our factory.

The installation must correspond with the assembly imperatives in order to ensure the validation of guarantee.

UE declaration of conformity

Déclaration de conformité UE

EU declaration of conformity

La déclaration de conformité UE s'applique aux appareils suivants :

The UE declaration of conformity applies to the following units :

| Modèle transmetteur marque JM Concept | Transmitter model Brand JM Concept |
|---------------------------------------|------------------------------------|
| TELIS | |

Nous, JM Concept, fabricant, confirmons sous notre seule responsabilité, la conformité aux exigences essentielles des directives européennes :

As manufacturer JM Concept confirm under our sole responsibility, the conformity to the essential requirements of the European directives :

DBT/LVD : 2014/35/UE

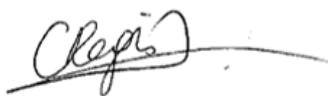
CEM/EMC : 2014/30/UE

RoHS : 2011/65/UE & 2015/863

L'objet de la déclaration décrit ci-dessus est conforme à la directive 2011/65/UE (RoHS) du Parlement européen et du Conseil du 8 juin 2011 relative à la limitation de l'utilisation de certaines substances dangereuses dans les équipements électriques et électroniques.

The purpose of the declaration described above complies with Directive 2011/65 / EU (RoHS) of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

Brignais, 16/05/2022



Carole REGIS, responsable qualité/quality manager

This declaration complies with the Directive 2014/53/UE