KIMO INSTRUMENTS

# User Manual

Presure • Temperature • Humidity • Air Velocity • Air Flow

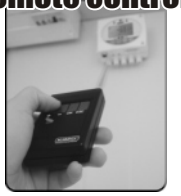
New

CE

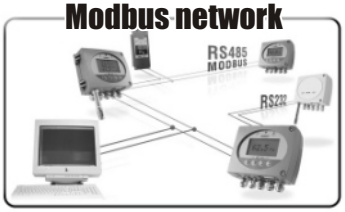
# Configuration of Class 300 Transmitters

**Keypad**

**Remote control**



**Modbus network**

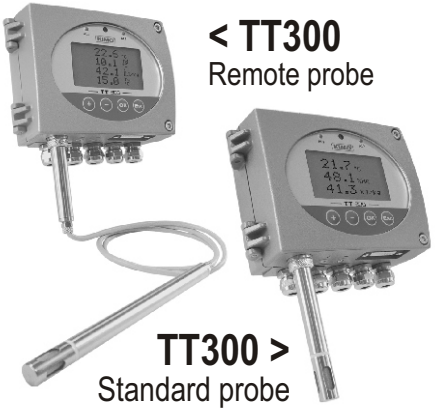



## Temperature Humidity

**TH300 >**
Standard probe

**TH300 >**
Remote probe

## Temperature



**< TT300**
Remote probe

**TT300 >**
Standard probe

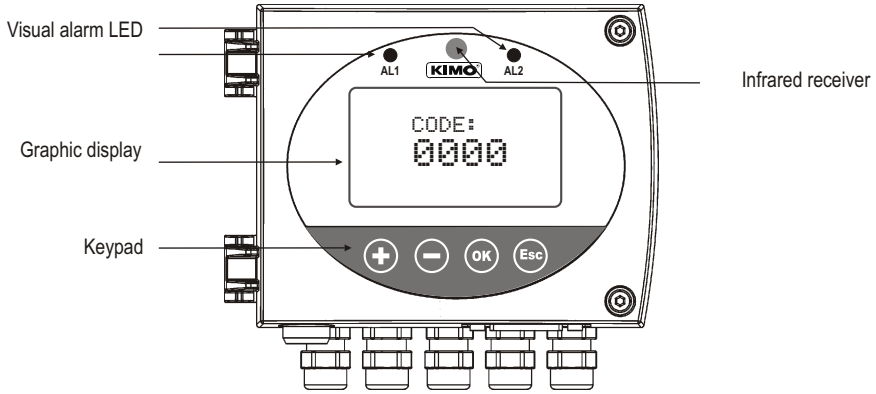
## Pressure

**CP300 >**

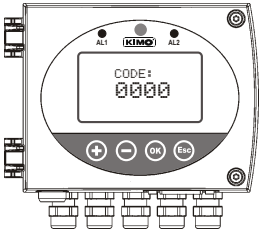
# 1.a - Working principle

Using keypad / remote control / Modbus configuration, you can activate (or deactivate) a channel, change the measuring range, set the set points and time-delay...

**Principle:** the configuration options are accessed via **folders and sub-folders** (similar to Windows®). Access is made via a **numerical code** (full details in this manual).




## 1.a.1 - Keypad




### Meaning of the keys

- ⊕ To increment a value or a level
- ⊖ To decrement a value or a level
- OK To validate an input
- Esc To cancel an input or to return to the previous step

## 1.a.2 - Infrared remote control

NOTE The remote control works like the keypad and the **configuration method remains exactly the same** whichever you use (keypad or remote control).


### Meaning of the remote control keys

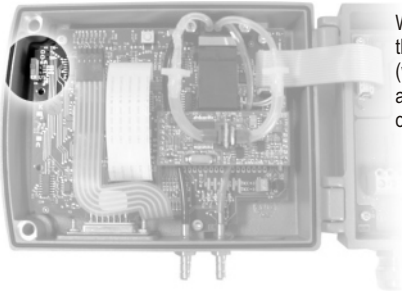
- ⊕ To increment a value or a level
- ⊖ To decrement a value or a level
- OK To validate an input
- Esc To cancel an input or to return to the previous step

**Channel selector**
With this selector, you can swap the transmission channel so that it matchs with the transmitter reception channel. See page 6 to configure the transmitter reception channel.

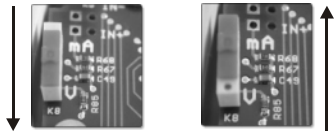
## 1.b - Output signal selection

***Voltage or Current ?***

The Class 300 can output either a **voltage** or a **current** signal.



With the on-off switch located on the left top of the transmitter (when open), you can choose analogue output 0-10V (voltage) or 4-20 mA (current)




**Down**
**0-10 V**

**Up**
**4-20 mA**

# 2.a - Configuration parameters

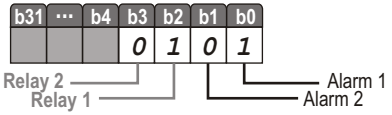
- **Communication speed**..... 19200 Bauds (see page 33 to configure the speed)
- **Data bits**..... 8 bits
- **Stop bit**..... 1 bit
- **Parity**..... None
- **Flow control**..... None
- **Transmitter addressing**..... between 1 and 255
  default address "0" for single ended bus configuration
  to change the addressing, see page 8.

# 2.b - Functions

- **Register reading**..... Function 03
- **Register writing**..... Function 16
- **Communication loop test**..... Function 08

# 2.c - Access codes to Registers

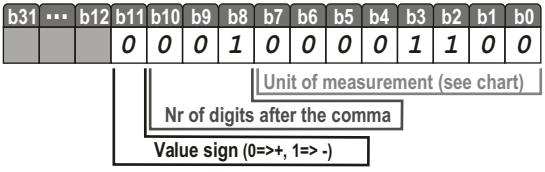
- ***Registers type***..... Signed long integer (32 bits), permuted (LSB, MSB)
- ***Alarms status -*** Modbus code : **1436**
  *Ex. The value sent by the transmitter is 5*
  *Alarm condition 1*
  *and relay 1 excited*




- ***Values -*** Modbus code : **1438 (channel 1)**
  **1442 (channel 2)**
  **1446 (channel 3 or value 1 of the external transmitter)**
  **1450 (channel 4 or value 2 of the external transmitter)**
  *Ex. the value sent by the transmitter is 6321*

- ***Values formatting -*** Modbus code : **1440 (channel 1)**
  **1444 (channel 2)**
  **1448 (channel 3 or value 1 of the external transmitter)**
  **1452 (channel 4 or value 2 of the external transmitter)**

| *Units of measurement* | | | |
|---|---|---|---|
| 1 | m/s | 12 | $mmH_2O$ |
| 2 | fpm | 13 | inWg |
| 3 | m3/h | 14 | Kpa |
| 4 | L/s | 15 | mmHg |
| 5 | cfm | 16 | mbar |
| 6 | m3/s | 17 | g/kg (absolute humidity. **ρ**) |
| 7 | °C | 18 | °C (dew temp. **Td**) |
| 8 | °F | 19 | °F (dew temp. **Td**) |
| 9 | %RH | 20 | °C (wet temp. **Tw**) |
| 10 | PSI | 21 | °F (wet temp. **Tw**) |
| 11 | Pa | 22 | KJ/Kg (Enthalpy **i**) |




*Ex. The formatting displayed is **268**.*
*Unit of measurement => 12 (see chart)*
*Figure(s) after the comma => 1*
*Sign => positive*

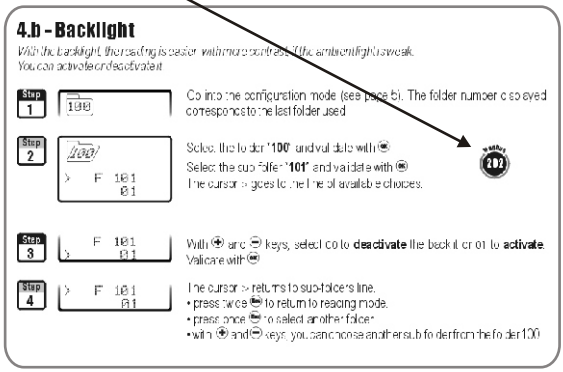
*If the value measured is equal to 6231 :*
***Result => 623,1 $mmH_2O$***

## 2.c - Access code to Registers (sequel)

- ***Serial number of sensing element (SPI - CP300 / Humidity - TH300)***

Modbus code: **1402**

NOTE **Other access codes to different registers are indicated on each function at stage n°2.**
Shown as this pictogram: Modbus 202



## ⚠ This step is COMPULSORY for each configuration.

To access the transmitter functions, **and for safety**, you have to first enter a safety code.
- Please check that the transmitter is powered on.
- If the transmitter displays an error code, please see "Errors Code" section on page 35

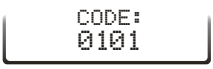
### Step 1

Press on ⓞⓚ
to get this screen


The first "0" blinks, which means that this column is activated and you can enter data from the keypad.

### Step 2

Enter the CODE "**0101**" with the keypad and validate with ⓞⓚ




The code must be entered from left to right.
To **increment** a value or a level, press ⊕
To **decrement** a value or a level, press ⊖
To **validate a value (level) or to validate the code**, press ⓞⓚ
To return to the **previous status or to cancel**, press Esc

### Step 3

This screen appears:


This screen confirms that the code was correctly entered, and that you can **configure the transmitter.**
If the code was wrongly entered, the transmitter initializes and returns to the starting display.


**Configuration folder number**

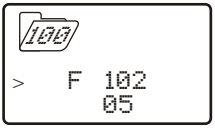
The transmitter includes **6 folders** maximum::

- **100**
- **200**
- **300**
- **400**
- **500**
- **600**

Ex. In the folder 400, you can configure the alarms and relays. See page 14.

### Step 4

Configuration folder selection




To select your configuration folder, press ⊕ to increment 100 or press ⊖ to decrement 100.
Once the folder is selected, press ⓞⓚ to validate.

***On the top left of each page** of this manual, you can find a reminder of the configuration folder where the function is available.*

F400

# 4.a - Transmitter channel for infrared remote control

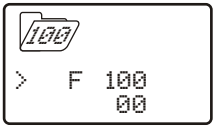
*You can change the channel number for receiving the signal from the infrared remote control.*
***The advantage is that only one remote control** is required to drive **several transmitters,** and that there is no interference if 2 transmitters are located side by side.*

NOTE By default, the channel number is **0**.

**Step 1**


Go into the configuration mode (see page 5). The folder number displayed corresponds to the last configuration folder used.

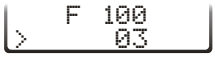
**Step 2**




Select the folder "**100**" and validate with OK.
Select the sub-folder "**100**" and validate with OK.
The cursor > goes to the line of available choices.

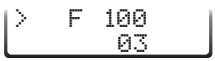
Modbus 200

**Step 3**




With ⊕ and ⊖ keys, select the channel number (from 00 to 09). Validate with OK.

**Step 4**




The cursor > returns to sub-folders line.
- press twice Esc to return to reading mode
- press once Esc to select another folder.
- with ⊕ and ⊖ keys, you can choose another sub-folder from the folder 100.

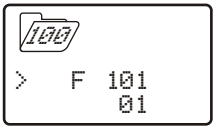
# 4.b - Backlight

*With the backlight, the reading is easier with more contrast, if the ambient light is weak.*
*You can activate or deactivate it.*

**Step 1**


Go into the configuration mode (see page 5). The folder number displayed corresponds to the last folder used.

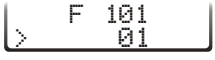
**Step 2**




Select the folder "**100**" and validate with OK.
Select the sub-folfer "**101**" and validate with OK.
The cursor > goes to the line of available choices.

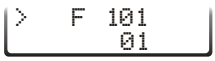
Modbus 202

**Step 3**




With ⊕ and ⊖ keys, select 00 to **deactivate** the backlit or 01 to **activate**. Validate with OK.

**Step 4**



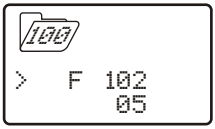

The cursor > returns to sub-folders line.
- press twice Esc to return to reading mode.
- press once Esc to select another folder.
- with ⊕ and ⊖ keys, you can choose another sub-folder from the folder 100.

# 4.c - Display contrast control

**Step 1**


Go into configuration mode (see page 5). The folder number which appears corresponds to the last configuration folder used.

**Step 2**

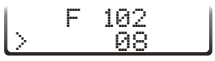



Select the folder "**100**" and validate with ⓞⓚ.

Select the sub-folder "**102**" and validate with ⓞⓚ.
The cursor > goes to the line of available choices.

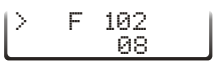
Modbus 204

**Step 3**




With ⊕ and ⊖ keys, set the contrast required (from 0 to 10). Validate with ⓞⓚ.

**Step 4**




The cursor > returns to sub-folders line.
- press twice ⓔⓢⓒ to return to reading mode.
- press once ⓔⓢⓒ to return to another folder selection.
- with ⊕ and ⊖ keys, you can choose another sub-folder from folder 100.

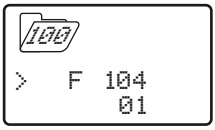
# 4.d - Keypad locking

*For safety, you can lock the keypad access. Like on a mobile phone, the keys will be disabled after having been locked.*

**Step 1**


Go into configuration mode (see page 5). The folder number which appears corresponds to the last folder used.

**Step 2**

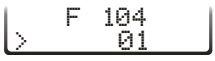



Select the folder "**100**" and validate with ⓞⓚ.

Modbus 208

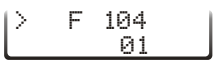
Select the sub-folder "**104**" and validate ⓞⓚ.
The cursor > goes to the different choices available.

**Step 3**




With ⊕ and ⊖ keys, select 01 to **lock** the keypad access or 00 if you **do not want to lock the keypad.** Validate with ⓞⓚ.

**Step 4**




The cursor > returns to sub-folders line.
- press twice ⓔⓢⓒ to return to reading mode.
- press once ⓔⓢⓒ to return to another folder selection.
- with ⊕ and ⊖ keys to choose another sub-folder from the folder 100

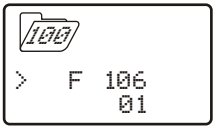
**To unlock** keypad access, **press and hold the ⓞⓚ key for 10 seconds.**
After 10 seconds, **an audible signal** confirms that the keypad is unlocked.

# 4.e - Slave addressing (Modbus)

**Step 1**


Go into configuration mode (see page 5). The folder number displayed corresponds to the last configuration folder used.

**Step 2**

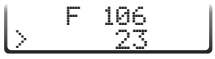



Select the folder "**100**" and validate with OK.

Select the sub-folder "**106**" and validate with OK.
The cursor > goes to available choices.

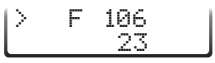
Modbus 212

**Step 3**




With ⊕ and ⊖ keys, set the slave addressing number (from 1 to 255).
Validate with OK.

**Step 4**



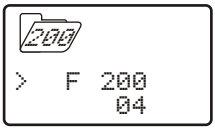

The cursor > goes to sub-folders line.
- press twice Esc to return to reading mode.
- press once Esc to return to another folder selection.
- with ⊕ and ⊖ keys to choose another sub-folder from the folder 100.

*Class 300 transmitters have 4 measuring channels. You can activate 1, 2, 3 or 4 channels and select each unit of measurement.*

**Step 1**


Go into configuration mode (see page 5). The folder number displayed corresponds to the last configuration folder used.

**Step 2**

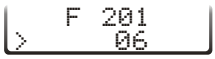



Select the folder "**200**" and validate with ⓞⓚ.

Select sub-folder and validate with ⓞⓚ. The cursor > goes to choices line.

| Channel 1 | Channel 2 | Channel 3 | Channel 4 |
|---|---|---|---|
| **200** | **201** | **202** | **203** |
| Modbus 400 | Modbus 402 | Modbus 404 | Modbus 406 |

**Step 3**

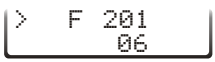



With ⊕ and ⊖ keys, select the unit of measurement (see chart below). Validate with ⓞⓚ.

| | *CP 301, 302 et 303* | *CP 304* | *TH 300* | *TT 300* |
|---|---|---|---|---|
| 00 | Voie inactive | Voie inactive | Voie inactive | Voie inactive |
| 01 | Pa | Pa | °C | °C |
| 02 | $mmH_2O$ | $mmH_2O$ | °F | °F |
| 03 | inWg | inWg | %HR | |
| 04 | mbar | mbar | g/Kg (Hygro. absolue **ρ**) | |
| 05 | °C | mmHg | °C (Temp. de rosée **Td**) | |
| 06 | °F | °C | °F (Temp. de rosée **Td**) | |
| 07 | m/s | °F | °C (Temp. humide **Tw**) | |
| 08 | fpm | m/s | °F (Temp. humide **Tw**) | |
| 09 | $m^3/h$ | fpm | KJ/Kg (Enthalpie **i**) | |
| 10 | L/s | $m^3/h$ | | |
| 11 | cfm | L/s | | |
| 12 | $m^3/s$ | cfm | | |
| 13 | | $m^3/s$ | | |

NOTE For a CP 300 transmitter (301, 302, 303 and 304),**the SQR option** is required in order to activate the units of air velocity and airflow.

**Step 4**




The cursor > returns to sub-folders line.
- press twice ⓔⓢⓒ to return to reading mode.
- press once ⓔⓢⓒ to return to another folder selection.
- with ⊕ and ⊖ keys to choose another sub-folder from the folder 200.

# 6.a - Output diagnostics

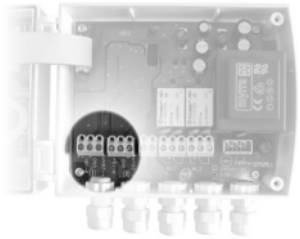
*With this function, you can check with a multimeter (or a regulator/display, or a PLC/BMS) if the transmitter outputs are working properly. The transmitter generates a voltage of 0 V, 5 V and 10 V or a current of 4 mA, 12 mA and 20 mA.*

## 6.a.1 - Multimeter connection configuration

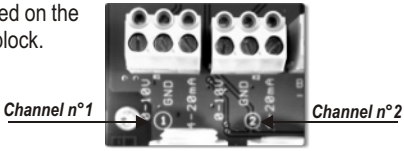
*Before carrying out the output diagnostics, all connections and configurations of the transmitter must be enabled, to avoid any damage on the transmitter and the multimeter !*

**Step 1** — ***Selection of the channel to be checked***

First, **select a channel** for the output diagnostics.

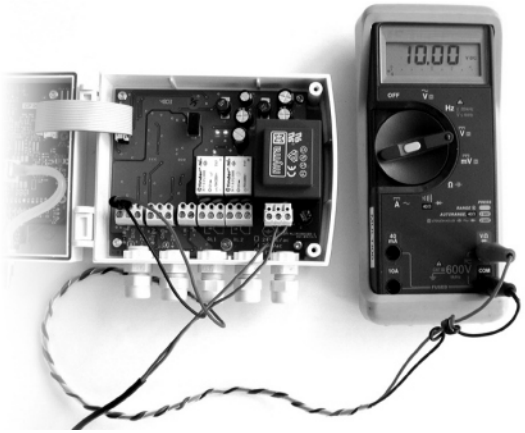


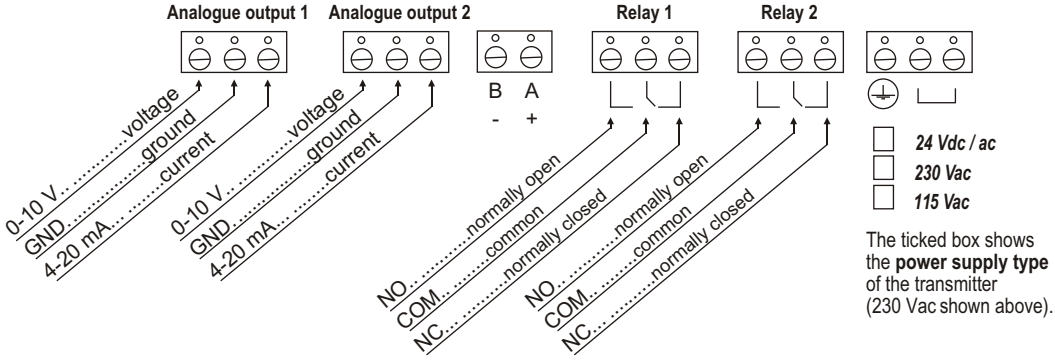
The channel numbers are indicated on the board located below the terminal block.




**Step 2** — ***Example of connection***

On the photo alongside, the multimeter is connected to the 0-10 V output and channel n°1.




The ticked box shows the **power supply type** of the transmitter (230 Vac shown above).

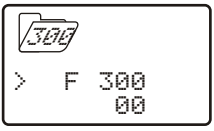
## 6.a.2 - Output diagnostics

*Once the connection of the transmitter to the multimeter (or regulator or PLC/BMS is complete, (see page 6), you can carry out the analogue output diagnostics on several check points.*

**Step 1**


Go into configuration mode (see page 5). The folder number displayed corresponds to the last configuration folder used.

**Step 2**



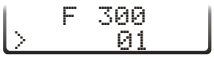

Select the folder "**300**" and validate with ⓞⓚ.

Channel n° 1 **output** Select sub-folder "**300**" Modbus 600

Channel n° 2 **output** Select sub-folder "**303**" Modbus 606

and validate with ⓞⓚ.
The cursor > goes to available choices.

**Step 3**

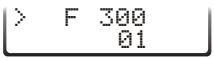



With ⊕ and ⊖ keys, select the signal that the transmitter must output (see chart below). Note : no need to validate with ⓞⓚ.


| | *Diagnostic Output* |
|---|---|
| 00 | 0 V |
| 01 | 5 V |
| 02 | 10 V |
| 03 | 4 mA |
| 04 | 12 mA |
| 05 | 20 mA |

**If the deviations are too big** (>0,05V or >0,05mA) between the signal issued and the value displayed on the multimeter, **we recommend that you return the transmitter to our factory.**

**Step 4**




The cursor > returns to sub-folders line.
- press twice ⓔⓢⓒ to return to reading mode.
- press once ⓔⓢⓒ to return to another folder selection.
- with ⊕ and ⊖ keys to choose another sub-folder from the folder 300.

# 6.b - Analogue output settings

*With this function, you can modify the measuring range of the transmitter, and you can equate the new limits to the analogue output (0-10V or 4-20mA).*
***You can enter the measuring range required on your own !***

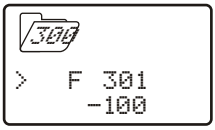
**You must enter the values according to the units of measurement selected, not according to the measuring range of the transmitter.**

***Eg.*** *on a CP 303 pressure transmitter (0 to ±1000 Pa) with a reading in mmH2O, the minimum and maximum ranges must be configured on measuring range of 0 to ±102 mmH2O.* ***See conversion chart on following page.***

**Step 1**


Go into configuration mode (see page 5). The folder number displayed corresponds to the last configuration folder used.

**Step 2**




Select the folder "**300**" and validate with OK.

**Minimum** of Channel **n°1** output (Modbus 602)
Select sub-folder "**301**"

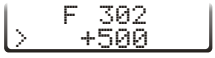
**Minimum** of Channel **n°2** output (Modbus 608)
Select sub-folder "**304**"

and validate with OK. The cursor > returns to the input line.

**Step 3**


With ⊕ and ⊖ keys, select the value sign: negative or positive, validate with OK. Then, enter the minimum limit value and validate with OK.

**Step 4**




**Maximum** of Channel **n°1** output (Modbus 604)
Select sub-folder "**302**"

**Maximum** of Channel **n°2** output (Modbus 610)
Select sub-folder "**305**"

and validate with OK. The cursor > goes to the input line.

**Step 5**


With ⊕ and ⊖ keys, select the value sign: negative or positive, validate with OK.
Then, enter the maximum limit value and validate with OK.

We recommend that the interval between the minimum and maximum is **> 5% of the measuring range.**

**Step 6**


The cursor > goes to sub-folders line.
- press twice Esc to return to reading mode.
- press once Esc to return to another folder selection.
- with ⊕ and ⊖ keys you can choose another sub-folder from the folder 300.

NOTE After an analogue output setting, if the unit of measurement is modified (see page 5), you have to reconfigure the outputs according to the new unit of measurement.

## 6.b.1 - Units of measurement conversion chart

### Pressure

| | *Pa* | *mmH2O* | *inWg* | *mbar* | *mmHg* |
|---|---|---|---|---|---|
| **CP 301** | 0 to ±100 | 0 to ±10,2 | 0 to ±0,401 | 0 to ±1,00 | - |
| **CP 302** | 0 to ±500 | 0 to ±51,0 | 0 to ±2,005 | 0 to ±5,00 | - |
| **CP 303** | 0 to ±1000 | 0 to ±102,0 | 0 to ±4,015 | 0 to ±10,00 | - |
| **CP 304** | 0 to ±10000 | 0 to ±1020,0 | 0 to ±40,01 | 0 to ±100,00 | 0 to ±75,00 |

### Temperature

| | *°C* | *°F* |
|---|---|---|
| **TH 300 - Sonde Inox** | -40,0 à +180,0 | -40,0 à +356,0 |
| **TH 300 - Sonde PC** | -20,0 à +120,0 | -4,0 à +248,0 |
| **TT 300 - Sonde Inox** | -40,0 à +180,0 | -40,0 à +356,0 |
| **TT 300 - Sonde PC** | -20,0 à +120,0 | -4,0 à +248,0 |

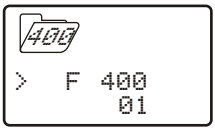
# 7.a - Activation / Deactivation of BEEP alarm

*The beep alarm (audible alarm) is activated when a set point is reached.*
*For more details on the setpoint settings, see page 20.*

**Step 1**


Go into configuration mode (page 5). The folder number displayed corresponds to the last configuration folder used.

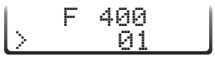
**Step 2**




Select the folder "**400**" and validate with ⓞ.
Select sub-folder "**400**" and validate with ⓞ.
The cursor > goes to available choices.

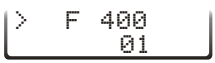
Modbus 800

**Step 3**




With ⊕ and ⊖ keys, select 01 to **activate** the BEEP alarm or 00 to **disactivate**. Validate with ⓞ.

**Step 4**




The cursor > goes to sub-folders line.
- press twice Esc to return to reading mode.
- press once Esc to return to another folder selection.
- with ⊕ and ⊖ keys you can choose another sub-folder from the folder 400.

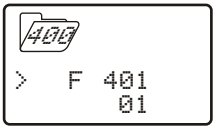
# 7.b - Relay security

*The relay outputs are by default, in **negative security**: the relay is **energized** when a set point is reached.*
*With the keypad, you can swap the relays in **positive security** : then, the relay is **de-energized** when a set point is reached or during a power outage.*

**Step 1**


Enter in configuration mode (see page 5). The folder number displayed corresponds to the last configuration folder used.

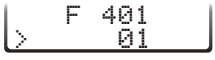
**Step 2**




Select folder "**400**" and validate with ⓞ.
Select sub-folder "**401**" and validate with ⓞ.
The cursor > goes to available choices.

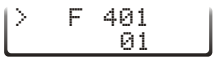
Modbus 802

**Step 3**




With the keys ⊕ and ⊖, select 01 for a **positive** security or 00 for a **negative** security. Validate with ⓞ.

**Step 4**




The cursor > returns to sub-folders line.
- press twice on Esc to return to reading mode.
- press once on Esc to return to another folder selection.
- with ⊕ and ⊖ keys, you can choose another sub-folder from the folder 400.

# 7.c - Alarm / relay functions and LED colour codes

## 7.c.1 - Visual / audible alarms

*Class 300 transmitters have 2 visual / audible alarms located in front of the transmitter, allowing to know the condition of the setpoints.*


**Alarm LED colour codes**

| | |
|---|---|
| ***Green*** | The alarm function is activated and the set point is not reached |
| ***Red*** | The alarm function is activated and the setpoint is reached |
| ***None*** | The alarm function **is not activated** |

NOTE *The red LED appears when the setpoint is reached, taking into account the time-delay and the action type (falling or rising).*
*See page 17 for more details.*

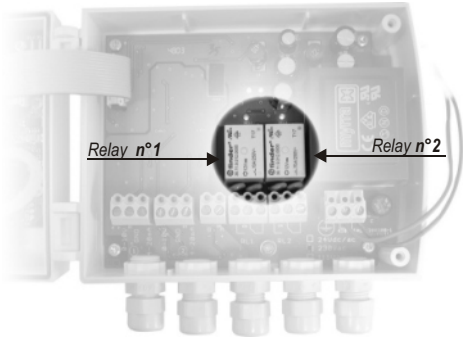
**Audible alarm**

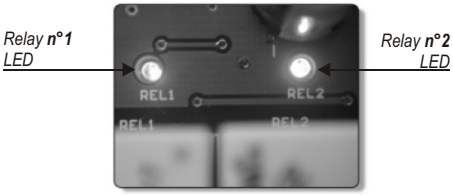
***Once the alarm is activated**, an alarm sounds whilst the setpoint is reached.*

NOTE *The BEEP alarm function must be activated to use the audible alarm.* ***See page 14.***

## 7.c.2 - The relays

*Class 300 transmitters have 2 relays visible on the transmitter board. These 2 relays each have one LED to allow **real-time checking.***




**Relay LED colour codes**

| | |
|---|---|
| ***Red*** | The relay is **energized** |
| ***None*** | The relay **is not energized** or **has not been configured** |

NOTE *The relay is energized when the setpoint is reached, taking into account the time-delay, the action type and also the alarms security mode.*
*Set points, time-delay and action type setting:* ***see page 20***
*Alarm security settings :* ***see page 14***

# 7.d - Selection of the channel for visual and relays alarms

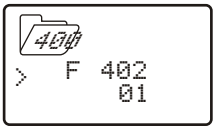
*Class 300 transmitters have 4 alarms: 2 visual (LED) and audible alarms and 2 relay alarms. The transmitter can be* ***configured with 4 different alarms setups.***

**Before any alarm setup,** check that the corresponding channel(s) **is activated.**

**Step 1**


Go into configuration mode (see page 5). The folder number displayed corresponds to the last configuration folder used.

**Step 2**



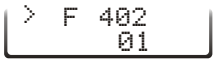

Select the folder "**400**" and validate with OK.

Select sub-folder

| "402" | "407" | "412" | "417" |
|---|---|---|---|
| Alarm **1** (LED 1) | Alarm **2** (LED 2) | Relay **1** | Relay **2** |
| Modbus 804 | Modbus 814 | Modbus 824 | Modbus 834 |

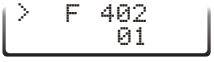
and validate with OK.

**Step 3**




With ⊕ and ⊖ keys, select the channel number for which you want to configure an alarm. Validate with OK.

**Step 4**




The cursor > returns to sub-folders line.

- press twice Esc to return to reading mode.
- press once Esc to return to another folder selection.
- with ⊕ and ⊖ keys, you can choose another sub-folder from the folder 400 (i.e. for example to configure another alarm / relay)

# 7.e - Alarm mode details

## 7.e.1 - Definitions

**Setpoint**

The setpoint is a limit which, on being reached and/or exceeded , activates an alarm or energizes a relay (in negative security, see page 14 for more details).

**Time-delay**

Once the setpoint is reached and/or exceeded, the time-delay postpones the alarm activation (or relay excitation) for a short period (in seconds). Once this period is elapsed, and if the setpoint is still exceeded, then the alarm is activated or the relay is energized (in negative security).

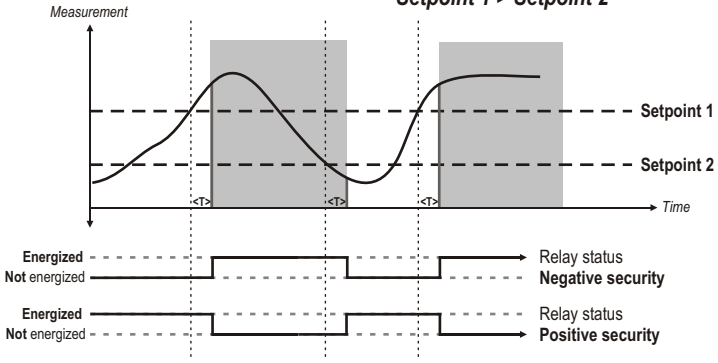
**Action type**

For alarm activation or relay excitation, you can choose the action type: rising or falling action.
- **Rising action**: the alarm is activated once the measurement **goes over** the setpoint
- **Falling action**: the alarm is activated once the measurement **goes below** the setpoint

## 7.e.2 - Available configurations

**Configuration N°1 :** 2 setpoints and time-delay activated (Control Mode)

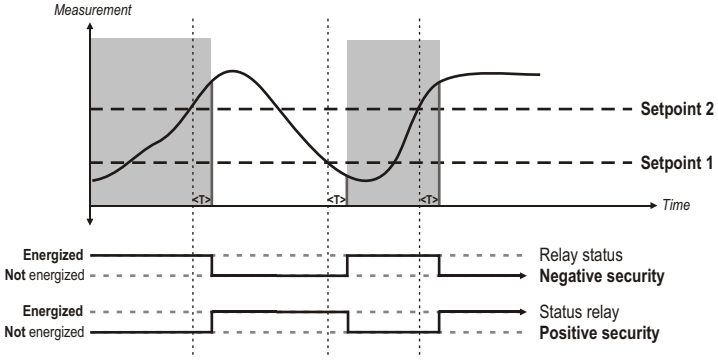
***Setpoint 1 > Setpoint 2***




Alarm set
**<T>** Time-delay

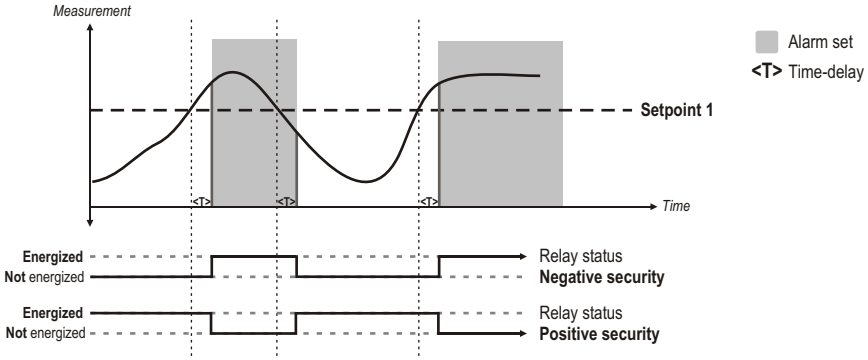
**Control mode (or regulation mode)**
=>you can regulate the measurement within a range determined by 2 setpoints.

***Setpoint 2 > Setpoint 1***

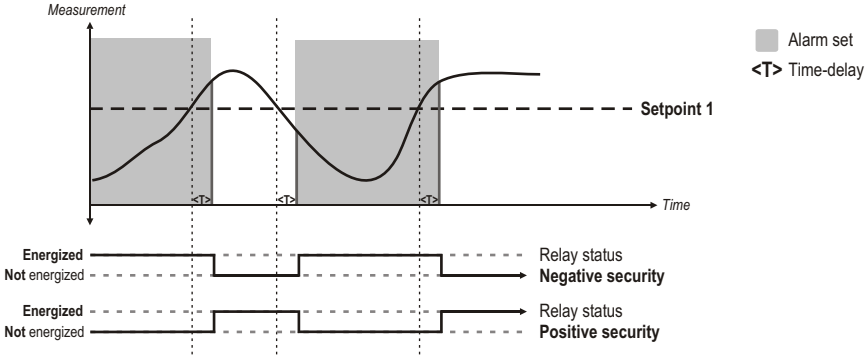



Alarm set
**<T>** Time-delay

**Configuration N°2 :** 1 setpoint, time-delay and rising action activated




**Configuration N°3 :** 1 setpoint, time-delay and falling action activated

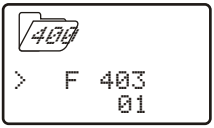


# 7.f - Alarm mode selection

**Step 1**


Go into configuration mode (see page 5). The folder number displayed corresponds to the last configuration folder used.

**Step 2**



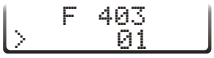

Select the folder "**400**" and validate with OK.

Select sub-folder

| "403" | "408" | "413" | "418" |
|---|---|---|---|
| Alarm **1** Modbus 806 | Alarm **2** Modbus 816 | Relay **1** Modbus 826 | Relay **2** Modbus 836 |

and validate with OK.

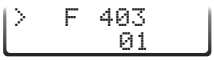
**Step 3**




With ⊕ and ⊖ keys, select the code relative to the alarm mode (see chart below). Validate with OK.

| *Code* | *Alarm mode* | *Drawing* |
|---|---|---|
| 00 | No alarm | |
| 01 | 2 setpoints with time-delay (control mode) | N° 1 page 17 |
| 02 | 1 setpoint with time-delay and rising action | N° 2 page 18 |
| 03 | 1 setpoint with time-delay and falling action | N° 3 page 18 |

**Step 4**




The cursor > returns to sub-folders line.
- press twice Esc to return to reading mode.
- press once Esc to return to another folder selection.
- with ⊕ and ⊖ keys, you can choose another sub-folder from the folder 400.

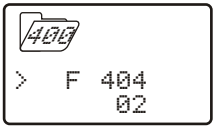
# 7.g - Setpoints and time-delay setting

## 7.g.1 - Setpoints

**Step 1**


Go into configuration mode (see page 5). The folder number displayed corresponds to the last configuration folder used.

**Step 2**




Select the folder "**400**" and validate with OK.

To configure the **setpoint 1**, select sub-folder

| "404" | "409" | "414" | "419" |
|---|---|---|---|
| Alarm **1** | Alarm **2** | Relay **1** | Relay **2** |
| Modbus 808 | Modbus 818 | Modbus 828 | Modbus 838 |

and validate with OK.

To configure the **setpoint 2** (alarm in **control mode,** see p17), select sub-folder

| "405" | "410" | "415" | "420" |
|---|---|---|---|
| Alarm **1** | Alarm **2** | Relay **1** | Relay **2** |
| Modbus 810 | Modbus 820 | Modbus 830 | Modbus 840 |

and validate with OK.

**Step 3**

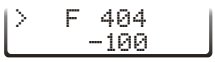

With ⊕ and ⊖ keys, select the value sign: negative or positive. Validate with OK.

Then, enter the setpoint value and validate with OK.

**You must enter values according to the units of measurement selected, not according to the measuring range of the transmitter.**

***Ex.*** *on a CP 303 pressure transmitter (0 to ±1000 Pa) with a reading in mmH2O, the minimum and maximum ranges must be configured on measuring range of 0 to ±102 mmH2O.* ***See conversion chart on page 13.***

**Step 4**




The cursor > returns to sub-folders line.

- press twice Esc to return to reading mode.
- press once Esc to return to another folder selection.
- with ⊕ and ⊖ keys, you can choose another sub-folder from the folder 400.

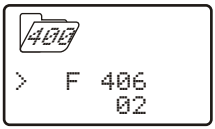
NOTE If after having set up a setpoint, the unit of measurement is modified (see page 9), then you have to reconfigure the setpoints according to this new unit of measurement.

## 7.g.2 - Time-delay

**Step 1**


Go into configuration mode (see page 5). The folder number displayed corresponds to the last configuration folder used.

**Step 2**



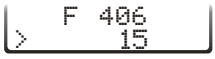

Select the folder "**400**" and validate with ⓞ.

Select sub-folder

| "406" | "411" | "416" | "421" |
|---|---|---|---|
| Alarm **1** | Alarm **2** | Relay **1** | Relay **2** |
| Modbus 812 | Modbus 822 | Modbus 832 | Modbus 842 |

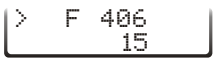
and validate with ⓞ.

**Step 3**




With ⊕ and ⊖ keys, set the required time-delay: from 00 to 60 seconds.
If you do not need the time-delay, enter 00.
Validate with ⓞ.

**Step 4**




The cursor > returns to sub-folders line.
- press twice Esc to return to reading mode.
- press once Esc to return to another folder selection.
- with ⊕ and ⊖ keys , you can choose another sub-folder from the folder 400.

# 8.a - Pressure measurement integration (CP 300)

*The integration coefficient makes an average of the measurements: this helps to avoid any excessive variations and guarantees a stable measurement.*

***New value displayed** = [(10 - Coef.) x N$^{ew}$ Value) + (Coef. x former value)] /10*

*This value is applicable when the variation is **less than +/- (Coef. x 10 Pa)***

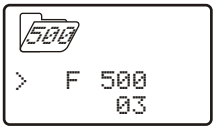
**Example : CP303 (0-1000 Pa) - First measurement: 120 Pa - New measurement : 125 Pa**

The pressure source is stable, the user applied a low integration. Integration : **1**, maximum variation allowed **+/-10 Pa**. Since the variation is less than 10 Pa, we apply the integration calculation formula. Next measurement displayed ((9 * 125) + (1 *120 ))/10 = 124.5 soit 124 Pa. If the new value had been 131 Pa, the next value displayed would have been 100% of the new value, i.e 131 Pa.

**Step 1**


Go into configuration mode (see page 5). The folder number displayed corresponds to the last configuration folder used.

**Step 2**



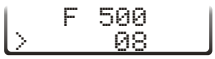

Select the folder "**500**" and validate with ⓞ.

Select the sub-folder "**500**" and validate with ⓞ.

The cursor > returns to available choices.

Modbus 1000

**Step 3**

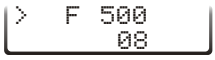



With ⊕ and ⊖ keys, you can set the integration value: from 00 to 09.

Validate with ⓞ.

**Coefficient 0** : no integration, large variation of the measurement displayed.
**Coefficient 9** : maximum integration, more stable measurement display.

**Step 4**




The cursor > returns to sub-folders line.

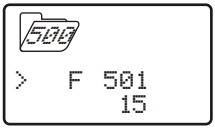
- press twice Esc to return to reading mode.
- press once Esc to return to another folder selection.
- with ⊕ and ⊖ keys , you can choose another sub-folder from the folder 500.

# 8.a - Time-delay between 2 self-calibrations

**Step 1**


Go into configuration mode (see page 5). The folder number displayed corresponds to the last configuration folder used.

**Step 2**



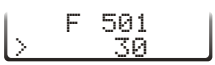

Select the folder "**500**" and validate with ⓞ.

Select the sub-folder "**501**" and validate with ⓞ.

The cursor > goes to available choices.

Modbus 1002

**Step 3**




With ⊕ and ⊖ keys, you can set the time-delay values between 2 self-calibrations: from 0 to 60 minutes. Validate with ⓞ.

**Nota** : if the value is equal to 0, the transmitter will not carry out any self-calibration.

**Step 4**


The cursor > returns to sub-folder line.

- press twice Esc to return to reading mode.
- press once Esc to return to another folder selection.
- with ⊕ and ⊖ keys , you can choose another sub-folder from the folder 500

NOTE **Whenever you want,** in reading mode, you can carry out a self-calibration by keeping "ESC" pressed for 5 seconds.

# 9.a - Offset setting in humidity and temperature

*In order to compensate for any longterm drift of the transmitter, you can add an offset to the value displayed by the TH 200 with the EHK 500 reference portable instrument or via the keypad.*

⚠ Function only available on humidity transmitters: **TH 300**

The EHK 500 is a reference portable instrument (optional) which enables you to adjust at one point the humidity and temperature reading, via the RS 232 connection cable. Thanks to this new time-saving system, no need to return the transmitter to our factory.

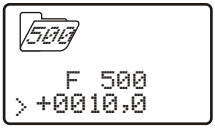
**Your transmitter is always available on site.** *For more details, see technical datasheet and user manual of EHK 500.*

## 9.a.1 - Offset in hygrometry (TH300)

**Etape 1**


Go into the configuration mode (see page 2). The folder number displayed corresponds to the last folder used.

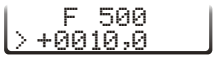
**Etape 2**




Select folder "**500**" and validate with OK.

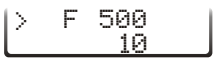
Select sub-folder "**500**" and validate with OK.
The cursor > goes to the line of available choices.

**Etape 3**




With keys ⊕ and ⊖, enter the offset value: from −50,0 to +50,0.
Validate with OK.

**Etape 4**



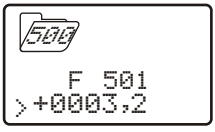

The cursor > returns to sub-folders line.
• press once on Esc to return to reading mode.
• or choose another folder to access other functions.

## 9.a.2 - Offset in temperature (TH300)

**Etape 1**


Go into the configuration mode (see page 2). The folder number displayed corresponds to the last folder used.

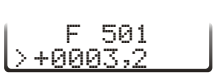
**Etape 2**




Select folder "**500**" and validate with OK.

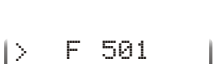
Select sub-folder "**501**" for an offset in °C or "**502**" for an offset in °F and validate with OK.
The cursor > goes to the line of available choices.

**Etape 3**




With keys ⊕ and ⊖, enter the offset value: from −50,0 to +50,0 (in °C) **or** from −90 to +90 (in °F). Validate with OK.

**Etape 4**




The cursor > returns to folders line.
• press once on Esc to return to reading mode.
• or choose another folder to access other functions.

NOTE If you activate the offset in temperature in °C (function 501), the value entered is automatically converted into °F (function 502) and vice versa.

# 10.a - Temperature compensation

*You can **modify the temperature compensation value.***
*The air velocity and airflow measured with a differential probe (such as Pitot tube, Debimo blade,orifice plate...) depends on the working temperature. Then, it is required to enter the **working temperature** to get more accurate results. You can enter the value either manually or using a thermocouple K probe which offers the automatic temperature compensation.*

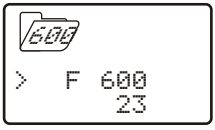
⚠ Function only available on pressure transmitter type **CP 300 with SQR option**

## 10.a.1 - Manual compensation

**Step 1**


Go into configuration mode (see page 5). The folder number displayed corresponds to the last configuration folder used.

**Step 2**



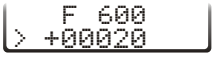

Select the folder "**600**" and validate with ⓞ.

Select the sub-folder "**600**" to enter a value in **°C** Modbus 1200

or "**601**" to enter a value in **°F** Modbus 1202

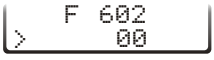
validate with ⓞ. The cursor > returns to available choices.

**Step 3**



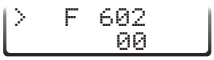

With ⊕ and ⊖ keys, enter the temperature compensation (Celsius degree shown alongside, sub-folder "600"). Validate with ⓞ.

**Step 4**




Select the folder "**602**" and validate with ⓞ.
The cursor > returns to available choices.
With ⊕ and ⊖ keys, choose 00. Validate with ⓞ.

**Step 5**




The cursor > returns to sub-folders line.
- press twice Esc to return to reading mode.
- press once Esc to return to another folder selection.
- with ⊕ and ⊖ keys, you can choose another sub-folder from the folder 600

NOTE If you make a temperature compensation in Celsius degree (sub-folder "600"), the transmitter will automatically make the conversion into Farenheit degree (sub-folder "601") and vice versa.

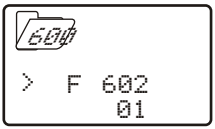
## 10.a.1 - Automatic compensation

> **!** Before configuring the automatic compensation in temperature, **you must connect** the thermocouple K probe on the transmitter.

**Step 1**


Go into configuration mode (see page 5). The folder number displayed corresponds to the last configuration folder used.

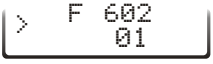
**Step 2**




Select the folder "**600**" and validate with OK.
Select the sub-folder "**602**" , validate with OK.
The cursor > returns to available choices.

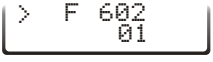
Modbus 1204

**Step 3**

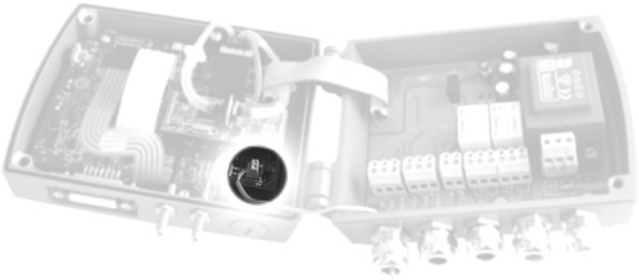



With ⊕ and ⊖ keys, choose 01. Validate with OK.

**Step 4**




The cursor > returns to sub-folders line.
- press twice Esc to return to reading mode.
- press once Esc to return to another folder selection.
- with ⊕ and ⊖ keys, you can choose another sub-folder from the folder 500



> **!** Once the automatic temperature compensation configuration is complete, **check carefully the connection** of the thermocouple K probe.

# 10.b - Air velocity coefficient selection (CP 300)

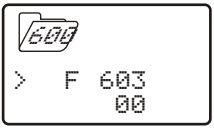
*Since the air velocity is calculated from the pressure (on a CP 300) and from a differential probe,* ***you must enter the coefficient value of the differential probe.*** *For Pitot tubes and Debimo blades, the coefficient is already included in the transmitter.*

⚠ Function only available on the pressure transmitters: **CP 300 + SQR option**

**Step 1**


Go into configuration mode (see page 5). The folder number displayed corresponds to the last configuration folder used.

**Step 2**

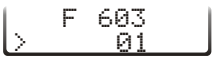



Select the folder "**600**" and validate with ⓞⓚ.

Select the sub-folder "**603**" and validate with ⓞⓚ.
The cursor > goes to available choices.

Modbus 1206

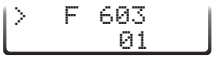
**Step 3**




With ⊕ and ⊖ keys, select the differential probe type. Validate with ⓞⓚ.

| *Code* | *Differential probe* | *Coef.* |
|---|---|---|
| 00 | Pitot tube L (ISO 3966) | 1 |
| 01 | DEBIMO blade | 0.8165 |
| 02 | Other differential probe | To be entered |

**Step 4**

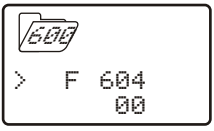



The cursor > returns to sub-folders line.
- press twice ⓔⓢⓒ to return to reading mode.
- press once ⓔⓢⓒ to return to another folder selection.
- with ⊕ and ⊖ keys, you can choose another sub-folder from the folder 600.

NOTE If you use "Other differential probe" please carefully follow the instructions below.

## 10.b.1 - Manual coefficient input

**Step 1**




Select the folder "**600**" and validate with ⓞⓚ.

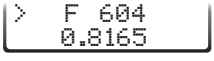
Select the sub-folder "**604**" and validate with ⓞⓚ.
The cursor > goes to available choices.

Modbus 1208

**Step 2**


With ⊕ and ⊖ keys, **enter the coefficient relative to your differential probe.** This coefficient is given by the manufacturer (from 0.0001 to 9.9999). Validate with ⓞⓚ.

**Step 3**




The cursor > returns to sub-folders line.
- press twice ⓔⓢⓒ to return to reading mode.
- press once ⓔⓢⓒ to return to another folder selection.
- with ⊕ and ⊖ keys , you can choose another sub-folder from the folder 600.

# 10.c- Air velocity coefficient input

*With this correction coefficient, you can adjust the transmitter according to the air velocity in your installation.*

⚠ Function only available on the transmitter : **CP 300 + SQR option**

## 10.c.1 - How to calculate it ?

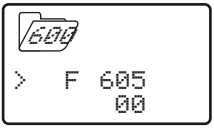
If the air velocity in your duct is equal to **17 m/s,** and if the transmitter indicates **16.6 m/s,** then the coefficient to apply is **17 / 16,6,** ie **1.024**

## 10.c.2 - Coefficient input

**Step 1**


Go into configuration mode (see page 5). The folder number displayed corresponds to the last configuration folder used.

**Step 2**

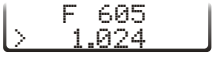



Select the folder "**600**" and validate with ⓞⓚ.

Select the sub-folder "**605**" and validate with ⓞⓚ.
The cursor > goes to available choices.

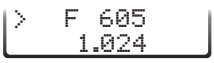
Modbus 1210

**Step 3**




With ⊕ and ⊖ keys, **enter the coefficient value** calculated (from 0.200 to 2.000). Validate with ⓞⓚ.

**Step 4**




The cursor > returns to the sub-folders line.
- press twice Ⓔⓢⓒ to return to reading mode.
- press once Ⓔⓢⓒ to return to another folder selection.
- with ⊕ et ⊖ keys, you can choose another sub-folder from the folder 600.

# 11.a - Selection of duct section type or airflow coefficient

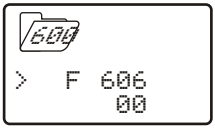
## 11.a.1 - Working from the section type

⚠ Function only available on pressure transmitters: **CP 300 + SQR option**

**Step 1**


Go into configuration mode (see page 5). The folder number displayed corresponds to the last configuration folder used.

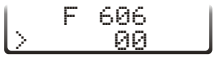
**Step 2**




Select the folder "**600**" and validate with ⓞⓚ.
Select the sub-folder "**606**" and validate with ⓞⓚ.
The cursor > goes to available choices.

Modbus 1212

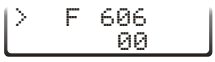
**Step 3**




With ⊕ and ⊖ keys, select the section type (00 or 01).
Validate with ⓞⓚ.

| *Code* | *Section type* |
|---|---|
| 00 | Rectangular |
| 01 | Circular |
| 02 | Airflow coefficient (to be entered, see p 29) |

**Step 4**



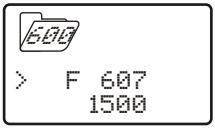

The cursor > returns to sub-folders line.
- press twice ⓔⓢⓒ to return to reading mode.
- press once ⓔⓢⓒ to return to another folder selection.
- with ⊕ and ⊖ keys to choose another sub-folder from the folder 600.

### Section sizes input

**Step 1**


Go into configuration mode (see page 5). The folder number displayed corresponds to the last configuration folder used.

**Step 2**




Select the folder "**600**" and validate with ⓞⓚ.

Select sub-folder

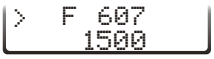
| | **Rectangular** section | | **Circular** section |
|---|---|---|---|
| | **Length** | **Width** | **Diameter** |
| **mm** | "607" Modbus 1214 | "608" Modbus 1216 | "609" Modbus 1218 |
| **inch** | "610" Modbus 1220 | "611" Modbus 1222 | "612" Modbus 1224 |

and validate with ⓞⓚ.

**Step 3**


With ⊕ and ⊖ keys, enter the value (from 0 to 3000mm or 0 to 118.11 inch).
Validate with OK.

**Step 4**




The cursor > returns to sub-folders line.
- press twice Esc to return to reading mode.
- press once Esc to return to another folder selection.
- with ⊕ and ⊖ keys, you can choose another sub-folder from the folder 600.

NOTE If you enter a length, width or diameter in mm, the transmitter will automatically calculate the conversion in Inch (vice versa)

## 10.a.2 - Working from a airflow coefficient

With this coefficient, you can calculate the airflow from the pressure. This coefficient is given by the manufacturer of the devices supplied with pressure connections (+ and -). From the square root of the pressure measured (Delta P),and from this coefficient, you get the airflow.

$$\text{Airflow} = C_D \times \sqrt{\Delta \text{Pressure}}$$

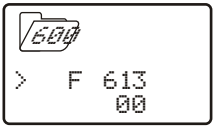
⚠ Function only available for the pressure transmitter: **CP 300 + SQR option**. In this calculation mode, you have **no access to reading of air velocity.** If you activate this calculation mode and also a channel in air velocity, the transmitter will display an error code "4".

⚠ **Go back to procedure page 28 / step 3:**
With ⊕ and ⊖ keys, select 02 and validate with OK.

**Step 1**


Go into configuration mode (see page 5). The folder number displayed corresponds to the last configuration folder used.

**Step 2**



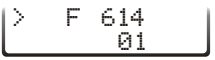

Select the folder "**600**" and validate with OK.
Select the sub-folder "**613**" and validate with OK.
The cursor > goes to available choices.

Modbus 1226

**Step 3**


With ⊕ and ⊖ keys, enter the airflow coefficient value (from 0,01 to 999,99).
Validate with OK.

**Step 4**




The cursor > returns to sub-folders line.
Select the sub-folder "**614**" to select the **unit of measurement in pressure** for the airflow calculation and validate with OK.
The cursor > returns to available choices.

Modbus 1228

**Step 5**

```
>   F 614
      01
```

With ⊕ and ⊖ keys, select the unit of measurement (see chart below). Validate with OK.

| | *CP301/302/303* | *CP304* |
|---|---|---|
| 01 | Pa | Pa |
| 02 | $mmH_2O$ | $mmH_2O$ |
| 03 | inWg | inWg |
| 04 | mbar | mbar |
| 05 | - | mmHg |

**Step 6**

```
>   F 614
      01
```

The cursor > returns to sub-folders line.

- press twice Esc to return to reading mode.
- press once Esc to return to another folder selection.
- with ⊕ and ⊖ keys to choose another sub-folder from the folder 600.

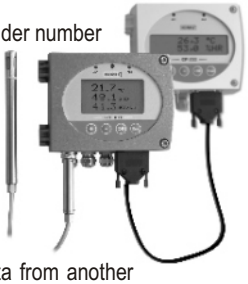
# 12.a- Activation / deactivation of the RS232 and home bus

*Class 300 transmitters have one RS232 and one RS 485 digital output (Modbus protocol) - optional.*
*With the RS 232, you can display 1 or 2 parameters which are measured by other Class 200 and 300 transmitters, or you can send measurements to be displayed on another Class 300 transmitters.*

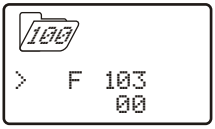
> ⚠ If you set up your transmitter to send measurements to another transmitter via RS 232, **then you will not be able to use the RS 485 digital output anymore** (Modbus - optional).

**Step 1**


Go into configuration mode (see page 5). The folder number displayed corresponds to the last configuration folder used.

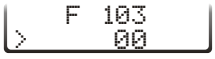


**Step 2**




Select the folder "**100**" and validate with ⓞ.
Select the sub-folder "**103**" and validate with ⓞ.

**Step 3**

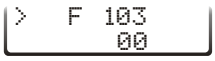



With ⊕ and ⊖ keys, select 00 to receive data from another transmitter or select 01 to send data via RS 232. Validate with ⓞ

Modbus 206

**CAUTION !!**
When the transmitter is configured to **receive data,** then the RS 485 Modbus is **active**). When the transmitter is configured to **send data** via RS 232, then the RS 485 Modbus is **inactive.**

**Step 4**



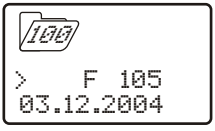

The cursor > returns to sub-folders line.
• press twice Ⓔ to return to reading mode.
• press once Ⓔ to return to another folder selection.
• with ⊕ and ⊖ keys, you can choose another sub-folder from the folder 100.

# 12.b- Serial number display

**Step 1**


Go into configuration mode (see page 5). The folder number displayed corresponds to the last configuration folder used.

**Step 2**




Select the folder "**100**" and validate with ⓞ.
Select the sub-folder "**105**"

Modbus 210

**Step 3**

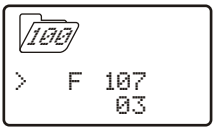

The serial number of the transmitter is displayed.
The cursor > returns to sub-folders line.
• press twice Ⓔ to return to reading mode.
• press once Ⓔ to return to another folder selection.
• with ⊕ and ⊖ keys to choose another sub-folder from the folder 100.

# 12.c- Modification of Modbus communication speed

**Step 1**

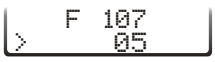

Go into configuration mode (see page 5). The folder number displayed corresponds to the last configuration folder used.

**Step 2**




Select the folder "**100**" and validate with OK.
Select the sub-folder "**107**" and validate with OK.

**Step 3**

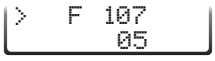



With ⊕ and ⊖ keys, select a communication speed (see chart below). Validate with OK.

Modbus 214

| | | | |
|---|---|---|---|
| 00 | 2400 bauds | 03 | 19200 bauds (speed by default) |
| 01 | 4800 bauds | 04 | 38400 bauds |
| 02 | 9600 bauds | 05 | 115200 bauds |

**Step 4**




The cursor > returns to sub-folders line.
- press twice Esc to return to reading mode.
- press once Esc to return to another folder selection.
- with ⊕ and ⊖ keys, you can choose another sub-folder from the folder 100.

# 12.d- Purge mode

*The purge mode enables to freeze the measurement when being displayed, enables to lock the analogue outputs, and to activate the relay 1, in order to actuate a de-dust system of a air movement conditions.*

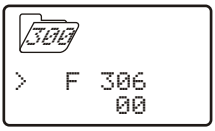
⚠ This function is only available on **CP300** pressure transmitters.

## 12.d.1 -Activation / deactivation of Purge Mode

**Step 1**


Go into configuration mode (see page 5). The folder number displayed corresponds to the last configuration folder used.

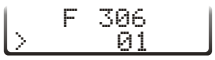
**Step 2**




Select the folder "**300**" and validate with ⓞ.

Select the sub-folder "**306**" and validate with ⓞ.

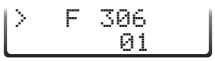
**Step 3**




With ⊕ and ⊖ keys, activate (01) or deactivate (00) the purge mode. Validate with ⓞ.

Modbus 612

**Step 4**



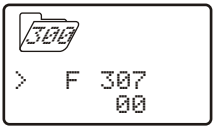

The cursor > returns to sub-folders line.
- press twice Esc to return to reading mode.
- press once Esc to return to another folder selection.
- with ⊕ and ⊖ keys, choose another sub-folder from the folder 300

## 12.d.2 -Working duration of purge mode

**Step 1**


Go into configuration mode (see page 5). The folder number displayed corresponds to the last configuration folder displayed.

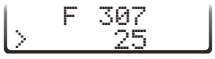
**Step 2**




Select the folder "**300**" and validate with ⓞ.

Select the sub-folder "**307**" and validate with ⓞ.

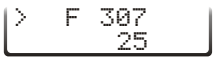
**Step 3**




With ⊕ and ⊖ keys, enter the value in seconds of the required working duration of each purge (from 01 to 60). Validate with

Modbus 614

**Step 4**




The cursor > returns to sub-folders line.
- press twice Esc to return to reading mode.
- press once Esc to return to another folder selection.
- press ⊕ and ⊖ to choose another sub-folder from the folder 300

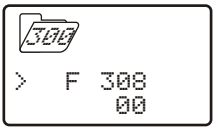
### 12.d- Mode Purge

## 12.d.3 -Frequency

**Step 1**

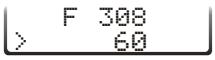

Go into configuration mode (see page 5). The folder number displayed corresponds to the last configuration folder used.

**Step 2**




Select the folder "**300**" and validate with ⓞ.
Select the sub-folder "**308**" and validate with ⓞ.

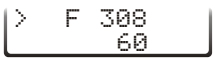
**Step 3**




With keys ⊕ and ⊖, enter the value in minutes of the frequency of each purge (from 01 to 9999). Validate with ⓞ.

Modbus 616

**Step 4**




The cursor > returns to sub-folders line.
- press twice Esc to return to reading mode.
- press once Esc to return to another folder selection.
- with ⊕ and ⊖, choose another sub-folder from the folder 300.

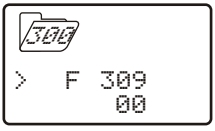
## 12.d.4 - Time-delay

*Once the purge is finished, time-delay is a time period before the transmitter returns to measurement mode and before the analogue outputs are reactivated.*

**Step 1**

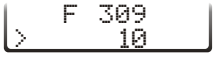

Go into configuration mode (see page 5). The folder number displayed corresponds to the last configuration folder used.

**Step 2**




Select the folder "**300**" and validate with ⓞ.
Select the sub-folder "**309**" and validate with ⓞ.

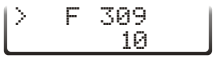
**Step 3**




With ⊕ and ⊖ keys, enter the value in seconds of the time-delay required (from 00 to 60). Validate with ⓞ.

Modbus 618

**Step 4**




The cursor > returns to the sub-folders line.
- press twice Esc to return to reading mode.
- press once Esc to return to another folder selection.
- with ⊕ and ⊖ keys, choose another sub-folder from the folder 300.

| Code | Problem | Solution |
|---|---|---|
| 01 | Configuration error (alarm(s) set on a non displayed/activated channel) | • Check status of the 4 alarms and 4 channels.<br>Ex. : the error appears if an alarm is configured on a channel (1,2,3 or 4) which is not active. Then, you must activate the channel on which you want to configure an alarm.<br>**Activation of a channel** :see page 5<br>**Alarm and relay configurations**: see page 14 |
| 02 | No channel activated | • Activate one channel (at least).<br>**Activation of a channel**: see page 5 |
| 03 | Humidity probe (TH300) or SPI (CP 300) not connected | • Connect the probe / SPI (see user manual SPI) |
| 04 | Only on CP 300.<br>A channel is configured in air velocity (see page 5) and the airflow calculation function (page 23) is set to 02 (airflow coefficient). This combination is **impossible**. | • Select a unit in airflow for the channel 1, 2, 3 or 4 (see channels configuration, page 5)<br>• Instead of airflow coefficient, select a circular or rectangular section in function 606 (see page 28) |

## F100

| Code | Modbus XXX | Description | Available settings |
|---|---|---|---|
| 100 | 200 | Channel n° for IR remote control | 0 to 9 |
| 101 | 202 | Backlight | 0 or 1 |
| 102 | 204 | Display contrast control | from 0 to 10 |
| 103 | 206 | Sending data via RS232 | 0 or 1 |
| 104 | 208 | Keypad locking | 0 or 1 |
| 105 | 210 | Serial number display | |
| 106 | 212 | Modbus slave number | 1 to 255 |
| 107 | 214 | Modbus communication speed | |

| | | | | | |
|---|---|---|---|---|---|
| 00 | 2400 bds | 02 | 9600 bds | 04 | 38400 bds |
| 01 | 4800 bds | 03 | 19200 bds | 05 | 115200 bds |

## F200

| Code | Modbus XXX | Description |
|---|---|---|
| 200 | 400 | Unit of channel 1 |
| 201 | 402 | Unit of channel 2 |
| 202 | 404 | Unit of channel 3 |
| 203 | 406 | Unit of channel 4 |

### Available settings

| | *CP301, 302 et 303* | *CP 304* | *TH300* |
|---|---|---|---|
| 00 | Inactive channel | Inactive channel | Inactive channel |
| 01 | Pa | Pa | °C |
| 02 | $mmH_2O$ | $mmH_2O$ | °F |
| 03 | inWg | inWg | %HR |
| 04 | mbar | mbar | g/Kg (absolute humd. **ρ**) |
| 05 | °C | mmHg | °C (dew temperature **Td**) |
| 06 | °F | °C | °F (dew temperature **Td**) |
| 07 | m/s | °F | °C (wet temperature **Tw**) |
| 08 | fpm | m/s | °F (wet temperature **Tw**) |
| 09 | $m^3/h$ | fpm | KJ/Kg (Enthalpy **i**) |
| 10 | L/s | $m^3/h$ | |
| 11 | cfm | L/s | |
| 12 | $m^3/s$ | cfm | |
| 13 | | $m^3/s$ | |

## F300

| | Code | Modbus XXX | Description | Available settings |
|---|---|---|---|---|
| channel 1 | 300 | 600 | Analogue output setting on channel 1 | **0**=>0V, **1**=>5V, **2**=>10V<br>**3**=>4mA, **4**=>12mA, **5**=>20mA |
| | 301 | 602 | Analogue output minimum on channel 1 | |
| | 302 | 604 | Analogue output maximum on channel 1 | |
| channel 2 | 303 | 606 | Analogue output setting on channel 1 | **0**=>0V, **1**=>5V, **2**=>10V<br>**3**=>4mA, **4**=>12mA, **5**=>20mA |
| | 304 | 608 | Analogue output minimum on channel 2 | |
| | 305 | 610 | Analogue output maximum on channel 2 | |
| CP300 | 306 | 612 | Activation / Deactivation of purge mode | 00 or 01 |
| | 307 | 614 | Working time of each purge | from 01 to 60 seconds |
| | 308 | 616 | Frequency of each purge | from 01 to 9999 minutes |
| | 309 | 618 | Time-delay after purge | from 00 to 60 seconds |

## F400

| | Code | Modbus | Description | Available settings |
|---|---|---|---|---|
| | 400 | 800 | Audible alarm | 0 or 1 |
| | 401 | 802 | Relays security | 0 (negative) or 1 (positive) |
| ALARM 1 | 402 | 804 | Channel selection for alarm 1 | **1**=> channel 1, **2**=> channel 2, **3**=>channel 3, **4**=> channel 4 |
| ALARM 1 | 403 | 806 | Channel selection for alarm 1 | **0**=> inactive<br>**1**=> setpoint 1, setpoint 2 and time-delay<br>**2**=> setpoint 1, time-delay and rising action<br>**3**=> setpoint 1, time-delay and falling action |
| ALARM 1 | 404 | 808 | Setpoint 1 of alarm 1 | |
| ALARM 1 | 405 | 810 | Setpoint 2 of alarm 1 | |
| ALARM 1 | 406 | 812 | Time-delay on alarm 1 | from 0 to 60 seconds |
| ALARM 2 | 407 | 814 | Channel selection for alarm 2 | **1**=> channel 1, **2**=> channel 2, **3**=>channel 3, **4**=> channel 4 |
| ALARM 2 | 408 | 816 | Alarm 2 type selection | **0**=> inactive<br>**1**=> setpoint 1, setpoint 2 and time-delay<br>**2**=> setpoint 1, time-delay and rising action<br>**3**=> setpoint 1, time-delay, and falling action |
| ALARM 2 | 409 | 818 | Setpoint 1 of alarm 2 | |
| ALARM 2 | 410 | 820 | Setpoint 2 of alarm 2 | |
| ALARM 2 | 411 | 822 | Time-delay on alarm 2 | from 0 to 60 seconds |
| RELAY 1 | 412 | 824 | Channel selection for Relay 1 | **1**=> channel 1, **2**=> channel 2, **3**=>channel 3, **4**=> channel 4 |
| RELAY 1 | 413 | 826 | Alarm type selection for Relay 1 | **0**=> inactive<br>**1**=> setpoint 1, setpoint 2 and time-delay<br>**2**=> setpoint 1, time-delay and rising action<br>**3**=> setpoint 1, time-delay and falling action |
| RELAY 1 | 414 | 828 | Setpoint 1 of Relay 1 | |
| RELAY 1 | 415 | 830 | Setpoint 2 of Relay 1 | |
| RELAY 1 | 416 | 832 | Time-delay of Relay 1 | from 0 to 60 seconds |
| RELAY 2 | 417 | 834 | Channel selection for Relay 2 | **1**=> channel 1, **2**=> channel 2, **3**=>channel 3, **4**=> channel 4 |
| RELAY 2 | 418 | 836 | Alarm type selection for Relay 1 | **0**=> inactive<br>**1**=> setpoint 1, setpoint 2 and time-delay<br>**2**=> setpoint 1, time-delay and rising action<br>**3**=> setpoint 1, time-delay and falling action |
| RELAY 2 | 419 | 838 | Setpoint 1 of Relay 2 | |
| RELAY 2 | 420 | 840 | Setpoint 2 of Relay 2 | |
| RELAY 2 | 421 | 842 | Time-delay of Relay 2 | from 0 to 60 seconds |

## F500

| Code | Modbus XXX | Model | Description | Available settings |
|---|---|---|---|---|
| 500 | 1000 | CP300 | Measurement integration | from 0 to 9 |
| 500 | 1000 | TH300 | Offset in humidity | -50,0 to +50,0 |
| 501 | 1002 | CP300 | Self-calibration for time-delay | from 0 to 60 minutes |
| 501 | 1002 | TH200 | Offset in temperature (°C) | from -50,0 to +50,0 |
| 502 | 1004 | TH200 | Offset in temperature (°F) | from -90,0 to +90,0 |

## F600

CP 300

| Code | Modbus XXX | Description | Available settings |
|---|---|---|---|
| 600 | 1200 | Compensation temperature in °C | - |
| 601 | 1202 | Compensation temperature in °F | - |
| 602 | 1204 | Compensation type | manual =>00 or automatic=>01 |
| 603 | 1206 | Air velocity measurement mean | |

| *Code* | *Differential probe* |
|---|---|
| 00 | Pitot tube |
| 01 | DEBIMO blade |
| 02 | Other differential probe |

CP 300

| | | | |
|---|---|---|---|
| 604 | 1208 | Air velocity coefficient value | from 0.0001 to 9.9999 |
| 605 | 1210 | Air velocity correction coefficient | from 0.200 to 2.000 |
| 606 | 1212 | Section type selection | |

| *Code* | *Section type* |
|---|---|
| 00 | Rectangular |
| 01 | Circular |
| 02 | Airflow coefficient |

CP 300

| | | | |
|---|---|---|---|
| 607 | 1214 | Section length in mm | from 0 to 3000 mm |
| 608 | 1216 | Section width in mm | from 0 to 3000 mm |
| 609 | 1218 | Section diameter in mm | from 0 to 3000 mm |
| 610 | 1220 | Section length in inch | from 0 to 118.11 inch |
| 611 | 1222 | Section width in inch | from 0 to 118.11 inch |
| 612 | 1224 | Section diameter in inch | from 0 to 118.11 inch |
| 613 | 1226 | Airflow coefficient | from 0.01 to 999.99 |
| 614 | 1228 | Units of pressure for the pressure calculation | |

| | *CP301/302/303* | *CP304* |
|---|---|---|
| 01 | Pa | Pa |
| 02 | $mmH_2O$ | $mmH_2O$ |
| 03 | inWg | inWg |
| 04 | mbar | mbar |
| 05 | - | mmHg |

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