New

CE

Configuration of Class 200 transmitters

Keypad

Air velocity

< CTV210

Pressure

CP200 >

Temperature Humidity

TH200 >
Remote probe

< TH200
Standard probe

1.a - Working principle

Using keypad, 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).

Visual alarm LED

AL1   AL2

KIMO

CODE:
0000

16-digit 2-line display

Keypad
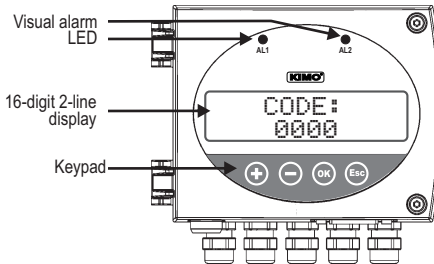
■ **Meaning of the keys**

⊕ To increment a value or a level

⊖ To decrement a value or a level

⊙ᴏᴷ To validate an input

⊙ᴱˢᶜ To cancel an input or to return to the previous step

1.b - Output signal selection

Voltage or Current ?

The Class 200 can output either a **voltage** or a **current** signal.
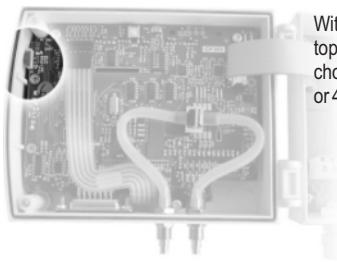
With the on-off switch located on the left top of the transmitter (when open), you can choose analogue output 0-10V (voltage) or 4-20 mA (current)
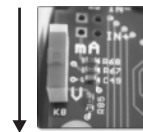
Down
0-10 V
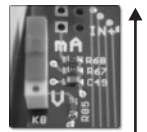
Up
4-20 mA

1.c - Protection tip of the sensor

⚠ *It's extremely unwise to remove the protection tip of our hygrometry probes as the sensitive element is very fragile even to light contacts. However, if you have to remove the protection tip, take all possible precautions and avoid any contact with the sensitive element. To remove the protection tip, unscrew it or unclip it.*

Protection tip to unscrew

Sensitive element

Protection tip to unscrew

Sensitive element
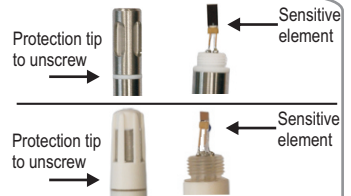
⚠️ **This step is COMPULSORY for each configuration.**

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 29

Step 1
Press ⊙
to get this screen

```
CODE:
 0000
```

❓ 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 ⊙

```
CODE:
 0101
```

❓ 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 ⓔsc

Step 3
This screen appears

```
>  F 100
```

❓ 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.

```
>  F 100
```

Shows the ongoing modification
Note : here, only one line is modifiable

"F" as "Function"

Configuration folder number
The transmitter includes **6 folders** maximum :

• **100**   • **400**
• **200**   • **500**
• **300**   • **600**

Ex. In the folder 400, you can configure the alarms and relays. See page 10.

Step 4
Configuration folder
selection

```
>  F 100
```

❓ 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

3.a - 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

> F 100

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

Step 2

> F 100

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

Step 3

> F 101
> 01

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

Step 4

F 101
> 01

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

Step 5

> F 101
> 01

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

3.b - Display contrast control

Step 1

> F 100

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

Step 2

> F 100

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

Step 3

> F 102
> 05

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

Step 4

F 102
> 08

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

Step 5

> F 102
> 08

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

3.c - 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	> F 100	Go into configuration mode (see page 2). The folder number which appears corresponds to the last folder used.
Step 2	> F 100	Select the folder "**100**" and validate with ⊛.
Step 3	> F 104 00	Select the sub-folder "**104**" and validate ⊛. The cursor > goes to the different choices available.
Step 4	F 104 > 01	With ⊕ and ⊖ keys, select 01 to **lock** the keypad access or 00 if you **do not want to lock the keypad.** Validate with ⊛.
Step 5	> F 104 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 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.

Class200 transmitters have 2 measuring channels. You can activate 1, or 2 channels and select each unit of measurement.

Step 1

> F 100

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

Step 2

> F 200

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

Step 3

> F 200
      01

Channel n°1
Select sub-folder "**200**"

Channel n°2
Select sub-folder "**201**"

and validate with ⓞ. The cursor > goes to choices line

Step 4

F 200
>   04

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

	CP201 et 202	*CP203 et 204*	*TH200*	*CTV210*
00	Iinactive channel	Inactive channel	Inactive channel	Inactive channel
01	Pa	mbar	°C	m/s
02	mmH$_2$O	inWg	°F	fpm
03	inWg	KPa	%RH	°C
04	mbar	PSI	g/Kg (absolute humid. **ρ**)	°F
05	mmHg	mmHg	°C (dew temp. **Td**)	m^3/h
06	m/s	m/s	°F (dew temp. **Td**)	L/s
07	fpm	fpm	°C (Humid temp. **Tw**)	cfm
08	m^3/h	m^3/h	°F (Humid temp. **Tw**)	m^3/s
09	L/s	L/s	KJ/Kg (Enthalpy **i**)	
10	cfm	cfm		
11	m^3/s	m^3/s		

NOTE For a CP 200 transmitter (201, 202, 203 and 204),**the SQR option** is required in order to activate the units of air velocity and airflow (from 06 to 11)

Step 5

> F 200
      04

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

5.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.

5.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.
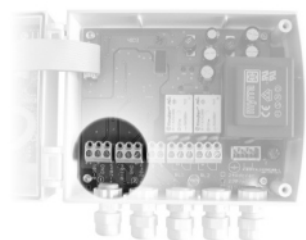
The channel numbers are indicated on the board located below the terminal block.

Channel n°1　　　*Channel n°2*
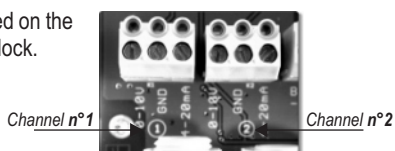
Step 2 | *Example of connection*

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

Analogue output 1　　**Analogue output 2**　　**Relay 1**　　**Relay 2**

0-10 V .... voltage
GND .... ground
4-20 mA .... current

0-10 V .... voltage
GND .... ground
4-20 mA .... current

B　A
-　+

NO .... normally open
COM .... common
NC .... normally closed

NO .... normally open
COM .... common
NC .... normally closed

⊕

☐ *24 Vdc / ac*
☑ *230 Vac*
☐ *115 Vac*
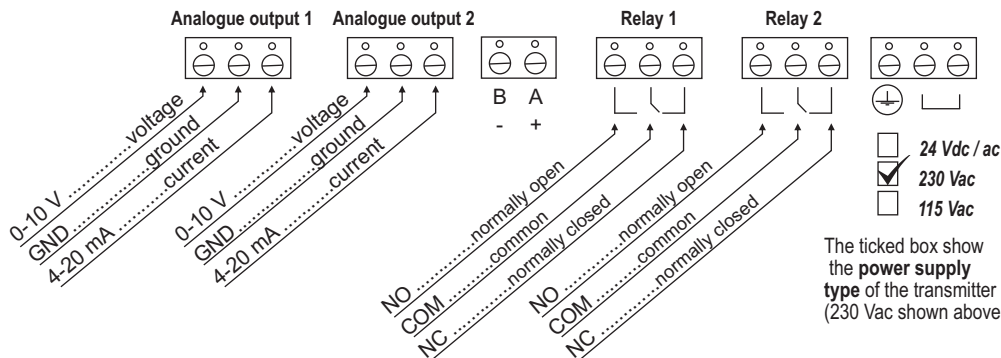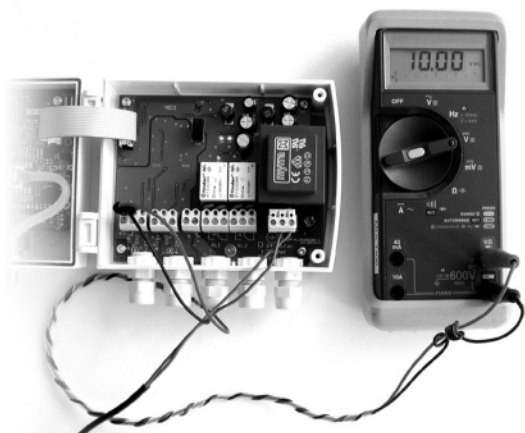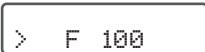
The ticked box show the **power supply type** of the transmitter (230 Vac shown above).
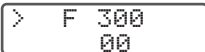
5.a.2 - Output diagnostics

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

| > | F 100 |

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

Step 2

| > | F 300 |

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

Step 3

| > | F 300 |
| | 00 |

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

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

and validate with ⊛.
The cursor > goes to available choices..

Step 4

| | F 300 |
| > | 04 |

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 large** (>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 5

| > | F 300 |
| | 04 |

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 300.

5.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.**

Ex. *on a CP 201 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	`>    F 100`	Go into configuration mode (see page 2). The folder number displayed corresponds to the last configuration folder used.

Step 2	`>    F 300`	Select the folder "**300**" and validate with ⓞⓚ.

Step 3 `>   F 301` `    -100`

Minimum of Channel **n°1** output	**Minimum** of Channel **n°2** output
Select sub-folder "**301**"	Select sub-folder "**304**"

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

Step 4 `    F 301` `> -00100`

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

Step 5 `>   F 302` `    +500`

Maximum of Channel **n°1** output	**Maximum** of Channel **n°2** output
Select sub-folder "**302**"	Select sub-folder "**305**"

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

Step 6 `    F 302` `> +00500`

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

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

Step 7 `>   F 302` `    +500`

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.

5.b.1 - Units of measurement conversion chart

Pressure

	Pa	*mmH2O*	*inWg*	*mbar*	*mmHg*	*KPa*	*PSI*
CP201	0 to ±1000	0 to ±102,0	0 to ± 4,015	0 to ±10,00	0 to ±7,50	-	-
CP202	0 to ±10000	0 to ±1020,0	0 to ±40,15	0 to ±100,00	0 to ±75,00	-	-
CP 203	-	-	0 to ±200,0	0 to ±500	0 to ±375	0 to ±50,0	0 to ±7,50
CP 204	-	-	0 to ±800,0	0 to ±2000	0 to ±1500	0 to ±200,0	0 to ±30,00

Temperature

	°C	*°F*
TH200 - St.steel probe	-40,0 to +180,0	-40,0 to +356,0
TH 200 - PC probe	-20,0 to +80,0	-4,0 to +176,0
CTV 210	0,0 to +50,0	+32,0 to +122,0

Air velocity (CTV 210)

	m/s	*fpm*
CTV210	0,0 to 30,0	0 to 5905

6.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 16.

Step 1	> F 100	Entrer en mode configuration (cf. page 2). Le numéro de dossier affiché correspond au dernier dossier de configuration utilisé.

Step 2	> F 400	Select the folder "**400**" and validate with ⊙.

Step 3	> F 400 01	Select sub-folder "**400**" and validate with ⊙. The cursor > goes to available choices.

Step 4	F 400 > 01	With ⊕ and ⊖ keys, select 01 to **activate** the BEEP alarm or 00 to **deactivate**. Validate with ⊙.

Step 5	> F 400 01	The cursor > goes 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 400.

6.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	> F 100	Enter in configuration mode (see page 2). The folder number displayed corresponds to the last configuration folder used.

Step 2	> F 400	Select folder "**400**" and validate with ⊙.

Step 3	> F 401 01	Select sub-folder "**401**" and validate with ⊙. The cursor > goes to available choices. Le curseur > descend sur la ligne des choix possibles.

Step 4	F 401 > 01	With ⊕ and ⊖ keys, select 01 for a **positive** security or 00 for a **negative** security. Validate with ⊙.

Step 5	> F 401 01	The cursor > returns to sub-folders line. • press twice on 🄴 to return to reading mode. • press once on 🄴 to return to another folder selection. • with ⊕ and ⊖ keys, you can choose another sub-folder from the folder 400.

6.c - Alarm / relay functions and LED colour codes

6.c.1 - Visual / audible alarms

Class 200 transmitters have 2 visual / audible alarms located in front of the transmitter, allowing to know the condition of the setpoints.

Alarm n°1   Alarm n°2
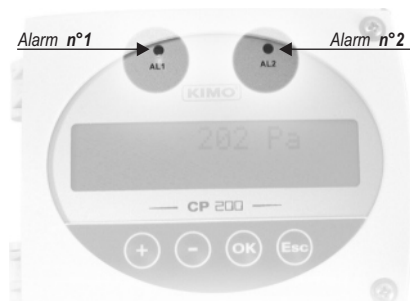
Alarm LED colour codes

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 13 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 10.***

6.c.2 - Les relais

*Class 200 transmitters have 2 relays visible on the transmitter board. These 2 relays each have one LED to allow **real-time checking.***

Relay n°1   Relay n°2

Relay n°1 LED   Relay n°2 LED
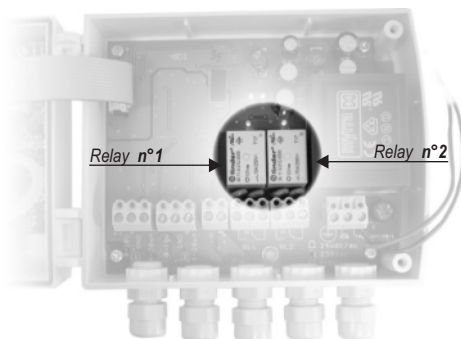
Relay LED colour codes

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 16***
*Alarm security settings : **see page 10***

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

Class 200 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	> F 100

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

Step 2	> F 400

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

Step 3	> F 402 01

Select sub-folder

"402" Alarm **1**	**"407"** Alarm **2**	**"412"** Relay **1**	**"417"** Relay **2**
(Led 1)	*(Led 2)*		

and validate with ⊚.

Step 4	F 402 > 01

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

Step 5	> F 402 01

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 400 (i.e. for example to configure another alarm / relay)

6.e - Alarm mode details

6.e.1 - Definitions

Seuil

The setpoint is a limit which, on being reached and/or exceeded , activates an alarm or energizes a relay (in negative security, see page 10 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

6.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
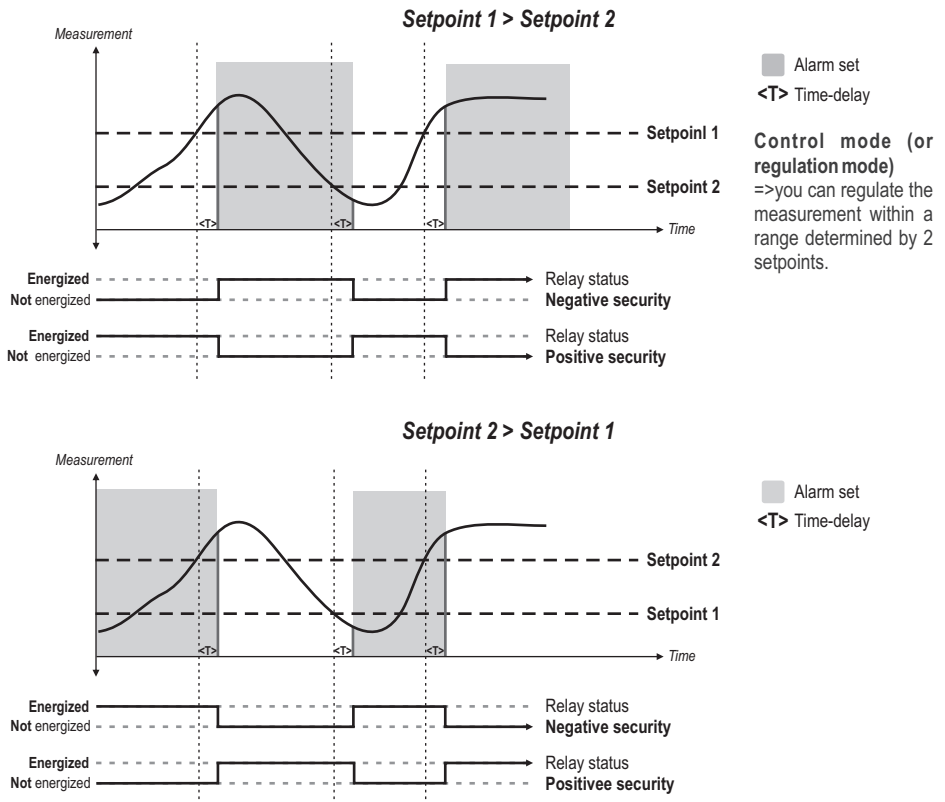
Configuration N°2 : 1 setpoint, time-delay and rising action activated

Alarm set
<T> Time-delay

Measurement

Setpoint 1

Time

Energized
Not energized
Relay status
Negative security

Energized
Not energized
Relay status
Positive security
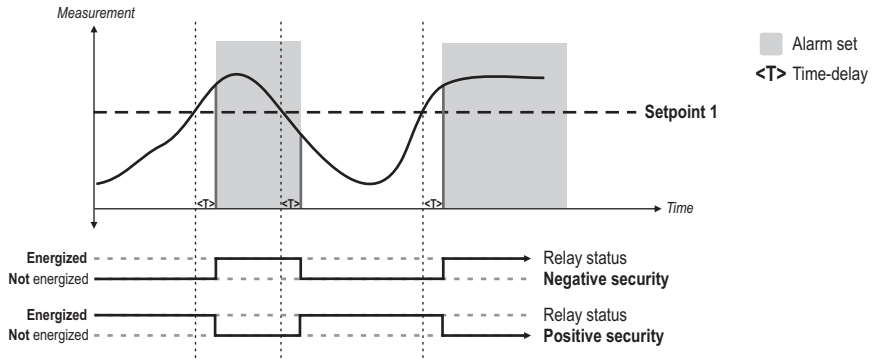
Configuration N°3 : 1 setpoint, time-delay and falling action activated

Alarm set
<T> Time-delay

Measurement

Setpoint 1

Time

Energized
Not energized
Relay status
Negative security

Energized
Not energized
Relay status
Positive security
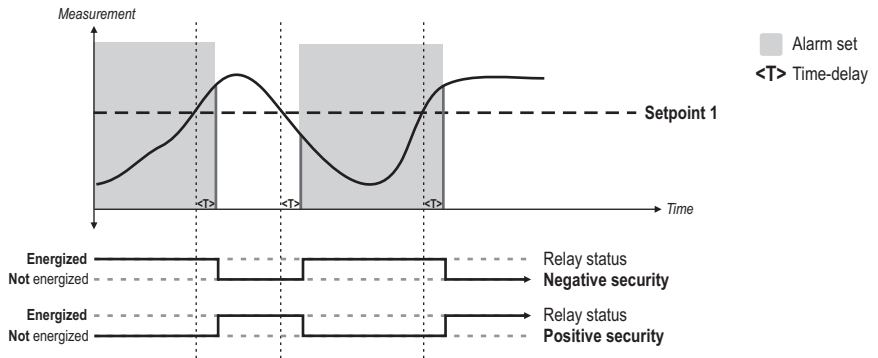
6.f - Alarm mode selection

Step 1
```
>   F 100
```
Go into configuration mode (see page 2). The folder number displayed corresponds to the last configuration folder used.

Step 2
```
>   F 400
```
Select the folder "**400**" and validate with Ⓞ.

Step 3
```
>   F 403
        02
```

Select sub-folder

	Alarm **1**	Alarm **2**	Relay **1**	Relay **2**
Mode	**"403"**	**"408"**	**"413"**	**"418"**

and validate with Ⓞ.

Step 4
```
   F 403
>       02
```
With ⊕ and ⊖ keys, select the code relative to the alarm mode (see chart below). Validate with Ⓞ.

Code	Alarm mode	Drawing
00	No alarm	
01	2 setpoints with time-delay (control mode)	N° 1 page 13
02	1 setpoint with time-delay and rising action	N° 2 page 14
03	1 setpoint with time-delay and falling action	N° 3 page 14

Step 5
```
>   F 403
        02
```
The cursor > returns to sub-folders line.
• press twice Ⓔˢᶜ to return to reading mode.
• press once Ⓔˢᶜ to return to another folder selection.
• with ⊕ and ⊖ keys, you can choose another sub-folder from the folder 400.

6.g - Setpoints and time-delay setting

6.g.1 - Setpoints

Step 1

> F 100

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

Step 2

> F 400

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

Step 3

> F 404
   02

Select sub-folder

	Alarm **1**	Alarm **2**	Relay **1**	Relay **2**
Setpoint 1	**"404"**	**"409"**	**"414"**	**"419"**

To configure **the setpoint 2** (alarm in **control mode,** see p13), select sub-folder

	Alarm 1	Alarm 2	Relay 1	Relay 2
Setpoint 2	**"405"**	**"410"**	**"415"**	**"420"**

and validate with ⊛.

Step 4

   F 404
> −00100

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

Then, enter the setpoint value and validate with ⊛.

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

*Ex. on a CP 201 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 9.***

Step 5

> F 404
   −100

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 5), then you have to reconfigure the setpoints according to this new unit of measurement.

6.g.2 - Time-delay

Step 1

| > F 100 |

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

Step 2

| > F 400 |

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

Step 3

| > F 406 |
| 02 |

Select sub-folder

	Alarm **1**	Alarm **2**	Relay **1**	Relay **2**
Tempo	"406"	"411"	"416"	"421"

and validate with ⊙.

Step 4

| F 406 |
| > 15 |

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 5

| > F 406 |
| 15 |

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.a - Pressure measurement integration

The pressure measurement element is very sensitive and reacts to pressure changes. When making measurements in unstable air movement conditions, the pressure measurement may fluctuate. The integration coefficient (from 0 to 9) makes an average of the measurements ; this helps to avoid any excessive variations and guarantees a stable measurement.

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

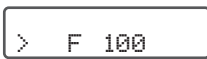**Example : CP201 (0-1000 Pa) - First measurement: 120 Pa - New measurement : 125 Pa**

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.

⚠ Function only available on pressure transmitters:
CP 201, CP 202, CP 203 and CP 204

Step 1	> F 100	Go into configuration mode (see page 2). The folder number displayed corresponds to the last configuration folder used.
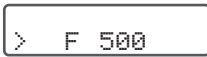
Step 2	> F 500	Select the folder "**500**" and validate with ⊙.
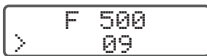
Step 3	F 500 > 09	Select the sub-folder "**500**" and validate with ⊙. The cursor > returns to available choices.
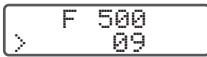
Step 4	F 500 > 09	With ⊕ and ⊖ keys, you can set the integration value: from 00 to 09. Validate with ⊙. **Coefficient 0** : no integration, large variation of the measurement displayed. **Coefficient 9** : maximum integration, more stable measurement display.
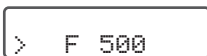
Step 5	> F 500	The cursor > returns to sub-folder selection • press once ⊙(Esc) to return to reading mode • or choose another folder to access other functions.

7.b - Autozero

Thanks to the temperature compensation of the gain (from 0 to 50°C) and to the manual auto-zero, Class 200 transmitters guarantee an excellent long-term stability, along with great measurement accuracy (in low and high ranges). The autozero compensates for any long-term drifts of the sensitive element, with the manual adjusting of the zero.

To autozero, unplug the 2 pressure connections tubes, and press on the AUTOZERO key (see "connection").

If the pressure transmitter has a display screen, it's possible to autozero by pressing the (Esc) button for 5 seconds.

8.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 200**

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.*

8.a.1 - Offset in hygrometry

Step 1
> `> F 100`

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

Step 2
> `> F 500`

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

Step 3
> `F 500`
> `> 10`

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

Step 4
> `F 500`
> `> +0010,0`

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

Step 5
> `> F 500`

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

8.a.2 - Offset in temperature

Step 1
> `> F 100`

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

Step 2
> `> F 500`

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

Step 3
> `F 501`
> `> 3,2`

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

Step 4
> `F 501`
> `> +0003,2`

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

Step 5
> `> F 500`

The cursor > returns to folders line.
• press once on ⌫ 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.

9.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.*

⚠ Function available only on pressure transmitters: **CP 200**

| **Step** **1** | >   F 100 | Go into configuration mode (see page 2). The folder number displayed corresponds to the last configuration folder used. |

| **Step** **2** | >   F 600 | Select the folder "**600**" and validate with ⊙. |

| **Step** **3** | >   F 600
     20 | Select the sub-folder "**600**" to enter a value in **°C**
 or "**601**" to enter a value in **°F**, validate with ⊙.
 The cursor > returns to available choices. |

| **Step** **4** | F 600
 >   20 | With ⊕ and ⊖ keys, enter the temperature compensation (Celsius degree shown alongside, sub-folder "600"). Validate with ⊙. |

| **Step** **5** | >   F 600
     20 | 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 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.

9.b - Air velocity coefficient selection (CP 200)

*Since the air velocity is calculated from the pressure (on a CP 200) 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 pressure transmitters: **CP 200**

| **Step 1** | > F 100 | Go into configuration mode (see page 2). The folder number displayed corresponds to the last configuration folder used. |

| **Step 2** | > F 600 | Select the folder "**600**" and validate with ⊙. |

| **Step 3** | > F 603
　　00 | Select the sub-folder "**603**" and validate with ⊙.
The cursor > goes to available choices. |

| **Step 4** | F 603
> 　 00 | 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 5** | > F 603
　　00 | 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. |

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

9.b.1 - Manual coefficient input

| **Step 1** | > F 600 | Select the folder "**600**" and validate with ⊙. |

| **Step 2** | > F 604
0.8165 | Select the sub-folder "**604**" and validate with ⊙.
The cursor > goes to available choices. |

| **Step 3** | > F 604
0.8165 | 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 4** | > F 604
0.8165 | 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. |

9.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 transmitters: **CP 200 and CTV 210**

9.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**

9.c.2 - Coefficient input

Step 1 `> F 100`

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

Step 2 `> F 600`

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

Step 3 `> F 605` `00`

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

Step 4 `F 605` `> 1.024`

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

Step 5 `> F 605` `1.024`

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.

10.a - Selection of duct section type or airflow coefficient

10.a.1 - Working from the section type

⚠️ Function only available on pressure transmitters: **CP 200 and CTV 210**

Step 1

> F 100

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

Step 2

> F 600

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

Step 3

> F 606
>   00

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

Step 4

> F 606
> >   00

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 24)

Step 5

> F 606
>   00

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.

Section sizes input

Step 1

> F 100

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

Step 2

> F 600

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

Step 3

> F 607
>   1500

Select sub-folder

	Rectangular section		**Circular** section
	Length	**Width**	**diameter**
mm	**"607"**	**"608"**	**"609"**
inch	**"610"**	**"611"**	**"612"**

and validate with ⊛.

Step 4

> F 607
> 1500

With $\oplus$ and $\ominus$ keys, enter the value (from 0 to 3000mm or 0 to 118.11 inch).
Validate with $\circledcirc$.

Step 5

> F 607
> 1500

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 $\oplus$ and $\ominus$ 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 (in sub-folder "601") and 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.

$$\text{Airflow} = C_D \times \sqrt{\triangle \quad \text{Pressure}}$$

Function only available for the pressure transmitter: **CP 200 + 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 23 / step 3:
With $\oplus$ and $\ominus$ keys, select 02 and validate with $\circledcirc$.

Step 1

> F 100

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

Step 2

> F 600

Select the folder "**600**" and validate with $\circledcirc$.

Step 3

> F 613
> 40.25

Select the sub-folder "**613**" and validate with $\circledcirc$.
The cursor > goes to available choices.

Step 4

F 613
> 40.25

With $\oplus$ and $\ominus$ keys, enter the airflow coefficient value (from 0.1 to 9999.9).
Validate with $\circledcirc$.

Step 5

> F 614
> 01

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 $\circledcirc$.
The cursor > returns to available choices.

Step 6

```
   F  614
>        01
```

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

	Cp201 and 202	*CP203 and 204*
01	Pa	mbar
02	mmH_2O	inWg
03	inWg	KPa
04	mbar	PSI
05	mmHg	mmHg

Step 7

```
>  F  614
         01
```

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

11.a- Activation / deactivation of the RS 232

Class 200 transmitters have a RS 232 output.
With the RS 232, you can send measurements (ASCII format) to another transmitter from **Class 300.**

Step 1

| > | F | 100 |

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

Step 2

| > | F | 100 |

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

Step 3

| > | F | 103 |
| | | 01 |

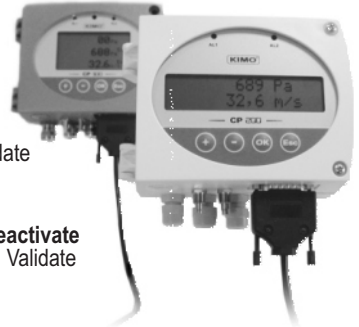Select the sub-folder "**103**" and validate with ⊛.

Step 4

| | F | 103 |
| > | | 01 |

With ⊕ and ⊖ keys, select 00 to **deactivate** the RS 232 output or 01 to **activate**. Validate with ⊛.

Step 5

| > | F | 103 |
| | | 01 |

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

11.b- Serial number display

Step 1

| > | F | 100 |

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

Step 2

| > | F | 100 |

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

Step 3

| > | F | 105 |
| | 04.03.2004 |

select sub-folder "**105**"

Step 4

| > | F | 105 |
| | 04.03.2004 |

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

11.c- 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 an air movement conditions system and to activate the relay 2 in order to isolate the transmitter.

Here is the detailed process of purge mode :
1 - Measurement is frozen.
2 - Wait for one second.
3 - Activation of relay 2 (isolation of the transmitter)
4 - Wait for time-delay.
5 - Activation of relay 1 (sending compressed air into the network to clean the installation)
6 - Purge duration

7 - Deactivation of relay 1 (stop sending compressed air).
8 - Wait for time-delay.
9 - Deactivation of relay 2
10 - Wait for one second.
11 - Recovery of measurement

⚠ This function is only available on **CP 200** pressure transmitters.

Relay 1 : Command of purge electro-valve

Frozen measurement

1 second time delay

Relay 2 : Command of isolation electro-valve
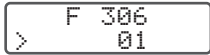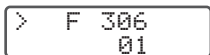
Protection duration of the transmitter

Purge time
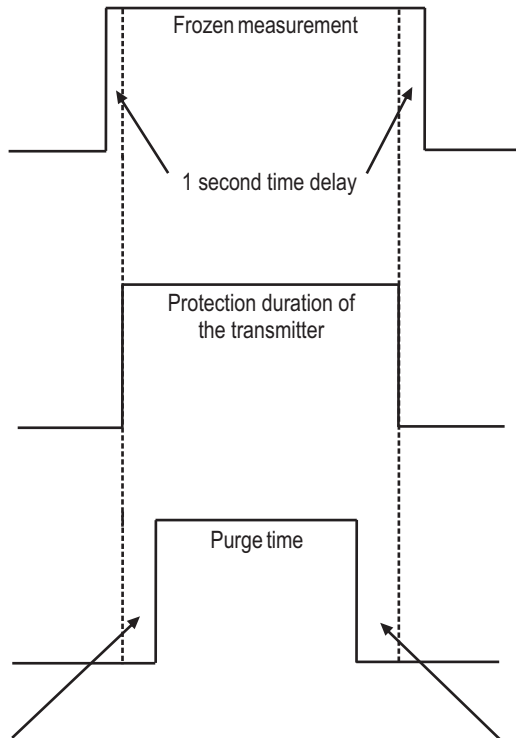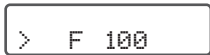
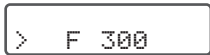Time-delay of advance of triggering of the relay 2 corresponding : **Temporisation**
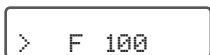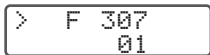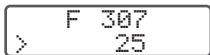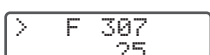
Time-delay of triggering of the relay 2 corresponding : **Temporisation**

11.c.1 -Activation / deactivation of Purge Mode

Step 1

| > F 100 |

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

Step 2

| > F 300 |

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

Step 3

| > F 306 |
| 00 |

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

Step 4

| F 306 |
| > 01 |

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

Step 5

| > F 306 |
| 01 |

The cursor > returns to sub-folders line.
• press twice Ⓔˢᶜ to return to reading mode.
• press once Ⓔˢᶜ to return to another folder selection.
• with ⊕ and ⊖ keys, choose another sub-folder from the folder 300
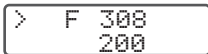
11.c.2 -Working duration of purge mode

Step 1

| > F 100 |

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

Step 2

| > F 300 |

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

Step 3

| > F 307 |
| 01 |

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

Step 4

| F 307 |
| > 25 |

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

Step 5

| > F 307 |
| 25 |

The cursor > returns to sub-folders line.
• press twice Ⓔˢᶜ to return to reading mode.
• press once Ⓔˢᶜ to return to another folder selection.
• press ⊕ and ⊖ to choose another sub-folder from the folder 300
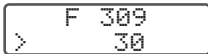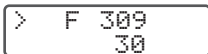
11.c.3 - Frequency

Step 1

`>   F  100`

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

Step 2

`>   F  300`

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

Step 3

`>   F  308`
`          01`

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

Step 4

`    F  308`
`>       200`

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

Step 5

`>   F  308`
`          200`

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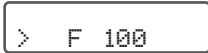• with ⊕ and ⊖, choose another sub-folder from the folder 300.

11.c.4 - Time-delay

Time-delay corresponds to the advanced and retardation lead time of triggering of the relay 2 relative to the relay 1.

Step 1

`>   F  100`

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

Step 2

`>   F  300`

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

Step 3

`>   F  309`
`          00`

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

Step 4

`    F  309`
`>        30`

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

Step 5

`>   F  309`
`          30`

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

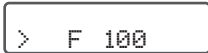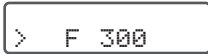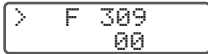| Code	Problem	Solution
01	Configuration error (alarm(s) set on a non displayed/activated channel)	• Check status of the 4 alarms and 2 channels.Ex. : the error appears if an alarm is configured on a channel (1 or 2) which is not active. Then, you must activate the channel on which you want to configure an alarm. **Activation of a channel** :see page 5 **Alarm and relay configurations**: see page 10
02	No channel activated	•Activate one channel (at least). **Activation of a channel**: see page 5
03	Only on Th200 transmitter. Humidity probe not connected.	• Connect the probe.
04	Only on the CP 200 transmitter. 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 or 2 (see channels configuration, page 5) • Instead of airflow coefficient, select a circular or rectangular section in function 606 (see page 23)

📁 F100 📁

Code	Description	Available settings
101	Backlight	0 or 1
102	Display contrast control	from 0 to 10
103	Sending data via Rs232	0 or 1
104	Keypad locking	0 or 1
105	Serial number display	

📁 F200 📁

Code Description
200 Unit of channel 1
201 Unit of channel 2

Available settings

	CP201 and 202	*CP203 and 204*	*TH200*	*CTV210*
00	Inactive channel	Inactive channel	Inactive channel	Inactive channel
01	Pa	mbar	°C	m/s
02	mmH$_2$O	inWg	°F	fpm
03	inWg	KPa	%RH	°C
04	mbar	PSI	g/Kg (absolute humid. **ρ**)	°F
05	mmHg	mmHg	°C (dew temp. **Td**)	m^3/h
06	m/s	m/s	°F (dew temp. **Td**)	L/s
07	fpm	fpm	°C (humid temp. **Tw**)	cfm
08	m^3/h	m^3/h	°F (humid temp. **Tw**)	m^3/s
09	L/s	L/s	KJ/Kg (Enthalpy **i**)	
10	cfm	cfm		
11	m^3/s	m^3/s		

📁 F300 📁

	Code	Description	Available settings
channel 1	300	Analogue output setting on channel 1	**0**=>0V, **1**=>5V, **2**=>10V **3**=>4mA, **4**=>12mA, **5**=>20mA
	301	Analogue output minimum on channel 1	
	302	Analogue output maximum on channel 1	
channel 2	303	Analogue output setting on channel 2	**0**=>0V, **1**=>5V, **2**=>10V **3**=>4mA, **4**=>12mA, **5**=>20mA
	304	Analogue output minimum on channel 2	
	305	Analogue output maximum on channel 2	
CP 200	306	Activation / Deactivation of purge mode	00 or 01
	307	Working time of each purge	from 01 to 60 seconds
	308	Frequency of each purge	from 01 to 9999 minutes
	309	Time-delay before and after purge	from 00 to 60 seconds

F400

Code	Description	Available settings
400	Audible alarm	0 or 1
401	Relays security	0 (negatve) or 1 (positive)

ALARM 1

Code	Description	Available settings
402	Channel selection for alarm 1	**1**=>channel 1, **2**=> channel 2
403	Alarm 1 type selection	**0**=>inactive
		1=> setpoint 1, setpoint 2 and time-delay
		2=> setpoint 1, time-delay and rising action
		3=> setpoint 1, time-delay and falling action
404	Setpoint 1 of alarm 1	
405	Setpoint 2 of alarm 1	
406	Time-delay of alarm 1	from 0 to 60 seconds

ALARM 2

Code	Description	Available settings
407	Channel selection for alarm 2	**1**=>channel 1, **2**=> channel 2
408	Alarm 2 type selection	**0**=>inactive
		1=> setpoint 1, setpoint 2 and time-delay
		2=> setpoint 1, time-delay and rising action
		3=> setpoint 1, time-delay and falling action
409	Setpoint 1 of alarm 2	
410	Setpoint 2 of alarm 2	
411	Time-delay of alarm 2	from 0 to 60 seconds

RELAY 1

Code	Description	Available settings
412	Channel selection for Relay 1	**1**=>channel 1, **2**=> channel 2
413	Alarm type selection for Relay 1	**0**=>inactive
		1=> setpoint 1, setpoint 2 and time-delay
		2=> setpoint 1, time-delay and rising action
		3=> setpoint 1, time-delay and falling action
414	Setpoint 1 of Relay 1	
415	Setpoint 2 of Relay 1	
416	Time-delay of Relay 1	from 0 to 60 seconds

RELAY 2

Code	Description	Available settings
417	Channel selection for Relay 2	**1**=>channel 1, **2**=> channel 2
418	Alarm type selection for Relay 1	**0**=>inactive
		1=> setpoint 1, setpoint 2 and time-delay
		2=> setpoint 1, time-delay and rising action
		3=> setpoint 1, time-delay and falling action
419	Setpoint 1 of Relay 2	
420	Setpoint 2 of Relay 2	
421	Time-delay of Relay 2	from 0 to 60 seconds

📂 F500 📂

Code	Product	Description	Available settings
500	CP200	Measurement integration	from 0 to 9
500	TH200	Offset in humidity	-50,0 to +50,0
501	TH200	Offset in temperature (°C)	from -50,0 to +50,0
502	TH200	Offset in temperature (°F)	from -90,0 to +90,0

📂 F600 📂

CP 200 - CTV 210

Code	Description	Available settings
600	Compensation temperature in °C*	-
601	Compensation temperature in °F*	-
603	Air velocity measurement mean*	

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

Code	Description	Available settings
604	Air velocity coefficient value*	from 0,0001 to 9,9999
605	Air velocity correction coefficient	from 0,200 to 2,000
606	Section type selection	

Code	Section type
00	Rectangular
01	Circular
02	Airflow coefficient

Code	Description	Available settings
607	Section length in mm	from 0 to 3000 mm
608	Section width in mm	from 0 to 3000 mm
609	Section diameter in mm	from 0 to 3000 mm
610	Section length in inch	from 0 to 118.11 inch
611	Section width in inch	from 0 to 118.11 inch
612	Section diameter in inch	from 0 to 118,.1 inch
613	Airflow coefficient*	from 0.1 to 9999.9
614	Units of pressure for the pressure calculation*	

	CP201 and 202	CP203 and 204
01	Pa	mbar
02	mmH$_2$O	inWg
03	inWg	KPa
04	mbar	PSI
05	mmHg	mmHg

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