

User Manual

Pressure • Temperature • Humidity • Air Velocity • Airflow • Sound level

Configuration of Class 200 transmitters



CE



Pressure



Air velocity

< CTV210



Temperature







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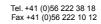




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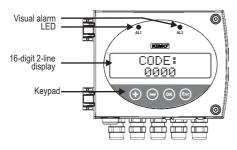




1.a - Working principle

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).



Meaning of the keys

- (+) To increment a value or a level
- To decrement a value or a level
- To validate an input
- 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**



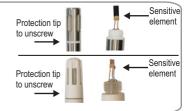
^{Up} **4-20 mA**

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.





2. Code activation and access to functions

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.

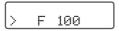
Step 2

Enter the CODE "0101" with the keypad and validate with ®

CODE: 0101

Step 3

This screen appears



The code must be entered from left to right. To increment a value or a level, press •

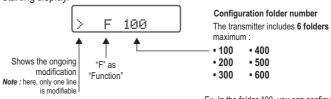
To **decrement** a value or a level, press

To validate a value (level) or to validate the code, press (s)

To return to the **previous status or to cancel**, press (see

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.



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

Step 4

Configuration folder selection

100

To select your configuration folder, press \oplus to increment 100 or press \ominus to decrement 100.

Once the folder is selected, press on 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. Display and keypad configuration

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.

1 > F 100

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

Step > F 100

Select the folder "100" and validate with ^{©N}.

Step > F 101

Select the sub-folfer "101" and validate with ®

The cursor > goes to the line of available choices.

Step F 101 > 01

With + and - keys, select - to **deactivate** the backlit or - 1 to **activate**. Validate with -

Step 5

> F 101 01

The cursor > returns to sub-folders line.

- press twice (Eso) to return to reading mode.
- press once (55) to select another folder.
- with \odot and \odot keys, you can choose another sub-folder from the folder 100

3.b - Display contrast control

Step > F 100

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

Step > F 100

Select the folder "100" and validate with .

Step >

> 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 lacktriangle and lacktriangle keys, set the contrast required (from lacktriangle to 10). Validate with lacktriangle.

Step 5

> F 102 08 The cursor > returns to sub-folders line.

- press twice (so to return to reading mode.
- press once (Esc) to return to another folder selection.
- with igoplus and igoplus keys, you can choose another sub-folder from folder 100.



3. Display and keypad configuration

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.

100

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

100

104

00

Select the folder "100" and validate with .

Select the sub-folder "104" and validate OK.

The cursor > goes to the different choices available.

104 01

With ⊕ and ⊖ keys, select ∅1 to **lock** the keypad access or ∅∅ if you **do** not want to lock the keypad. Validate with ®.

104 01

The cursor > returns to sub-folders line.

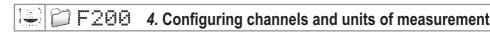
- press twice (Esc) to return to reading mode.
- press once (so) to return to another folder selection.
- with and keys to choose another sub-folder from the folder 100

To unlock keypad access, press and hold the @ key for 10 seconds.

After 10 seconds, an audible signal confirms that the keypad is unlocked.



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Class 200 transmitters have 2 measuring channels. You can activate 1, or 2 channels and select each unit of measurement.

100

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

200

Select the folder "200" and validate with @.

200

Channel n°1 Select sub-folder "200"

Channel n°2 Select sub-folder "201"

and validate with (as). The cursor > goes to choices line

200Й4

01

With ullet and ullet keys, select the unit of measurement (see chart below). Validate with ®

	CP201 et 202	CP203 et 204	TH200	CTV210
00	linactive channel	Inactive channel	Inactive channel	Inactive channel
01	Pa	mbar	°C	m/s
02	mmH₂O	inWg	°F	fpm
03	inWg	KPa	%RH	°C
04	mbar	PSI	g/Kg (absolute humid. ρ)	°F
05	mmHg	mmHg	°C (dew temp. Td)	m³/h
96	m/s	m/s	°F (dew temp. Td)	L/s
07	fpm	fpm	°C (Humid temp. Tw)	cfm
08	m³/h	m³/h	°F (Humid temp. Tw)	m³/s
09	L/s	L/s	KJ/Kg (Enthalpy i)	
10	cfm	cfm		
11	m³/s	m³/s		

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)



200 04

The cursor > returns to sub-folders line.

- press twice to return to reading mode.
- press once (so) to return to another folder selection.
- with \oplus and \bigcirc keys to choose another sub-folder from the folder 200.

5. Analogue output management

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.

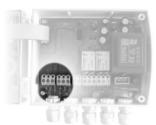
5.a.1 - Multimeter connection configuration

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!



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.

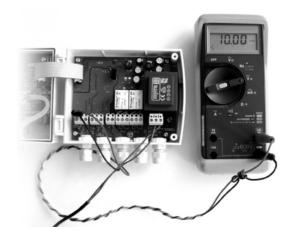
Channel n°1

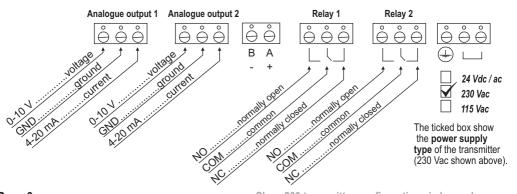
Channel n°2



Example of connection

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







5. Analogue output management

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.



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



Select the folder "300" and validate with (*)



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...



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.



\sum	F	300	
		04	

The cursor > returns to sub-folders line.

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- press twice (so) to return to reading mode.
- press once (so) to return to another folder selection.
- with \oplus and \bigcirc keys to choose another sub-folder from the folder 300.



5. Analogue output management

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

> 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 Select sub-folder "302"

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

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

Step

F 302 > +00500 With + and \bigodot keys, select the value sign: negative or positive, validate with e

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 to return to reading mode.
- press once (50) to return to another folder selection.
- \bullet with + and \bigodot keys you can choose another sub-folder from the folder 300.



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

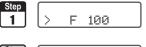
Air velocity (CTV 210)

	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.



Entrer en mode configuration (cf. page 2). Le numéro de dossier affiché correspond au dernier dossier de configuration utilisé.



Select the folder "400" and validate with (*)



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



With ⊕ and ⊖ keys, select ∅1 to activate the BEEP alarm or ∅0 to deactivate. Validate with .



The cursor > goes to sub-folders line.

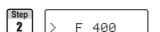
- press twice (so) to return to reading mode.
- press once (so to return to another folder selection.
- with \oplus and \bigcirc keys you can choose another sub-folder from the folder 400.

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.



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



Select folder "400" and validate with .



Select sub-folder "401" and validate with .

The cursor > goes to available choices.

401 01

Le curseur > descend sur la ligne des choix possibles. With ⊕ and ⊕ keys, select @1 for a **positive** security or @Ø for a **negative**

security. Validate with .



The cursor > returns to sub-folders line.

- press twice on (Eso) to return to reading mode.
- press once on (so) to return to another folder selection.
- with \oplus and \bigcirc 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 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

NO7E

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.

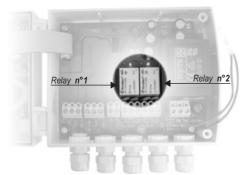




The BEEP alarm function must be activated to use the audible alarm. See page 10.

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 LED colour codes

Red The relay is energized None The relay is not energized or has not been configured





The relay is energized when the setpoint is reached, NOTE 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

Alarm security settings: see page 10



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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.





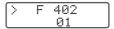
Go into configuration mode (see page 2). The folder number displayed corresponds to the last configuration folder used.





Select the folder "400" and validate with .









"412" Relay 1

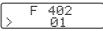
"417" Relay 2

(Led 1)

and validate with .

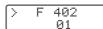
Select sub-folder





With \odot and \bigcirc keys, select the channel number for which you want to configure an alarm. Validate with .





The cursor > returns to sub-folders line.

- press twice (so) to return to reading mode.
- press once to return to another folder selection.
- \bullet with \bigodot and \bigodot 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

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

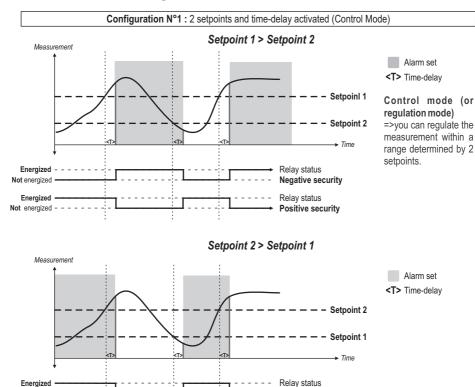
Once the setpoint is reached and/or exceeded, the time-delay postpones the alarm activation (or relay excitation) for a short period (in seconds). Once this period is elapsed, and if the setpoint is still exceeded, then the alarm is activated or the relay is energized (in negative security).

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



Not energized

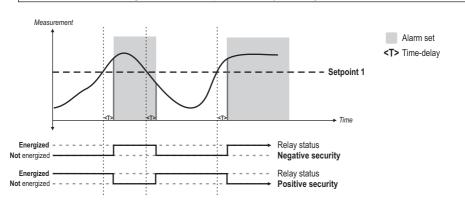
Not energized

Negative security Relay status

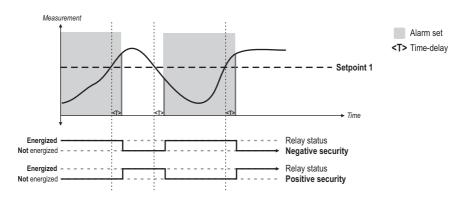
Positivee security



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



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







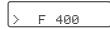


6.f - Alarm mode selection



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

2



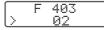
Select the folder "400" and validate with @.

3

\supset	F	403	
		02	

	Select sub-folder			
Alarm 1 Alarm 2 Relay 1				Relay 2
Mode	"403"	"408"	"413"	"418"

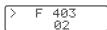
and validate with ®



With igoplus and igoplus 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





The cursor > returns to sub-folders line.

- press twice (Eso) to return to reading mode.
- press once (50) to return to another folder selection.
- with and keys, you can choose another sub-folder from the folder 400.







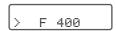
6.g - Setpoints and time-delay setting

6.q.1 - Setpoints



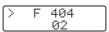


Go into configuration mode (see page 2). The folder number displayed corresponds to the last configuration folder used.



Select the folder "400" and validate with (*)







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), salact sub-folder

	361661.3	ub-loluei	
Setpoint 2 "4	05" "410"	' "415"	"420"

and validate with ®





With \oplus and \bigcirc keys, select the value sign; negative or positive. Validate with

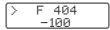
Then, enter the setpoint value and validate with .



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.





The cursor > returns to sub-folders line.

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



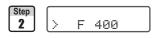
If after having set up a setpoint, the unit of measurement is modified (see page 5), then you have to reconfigure the setpoints according to this new unit of measurement.



6.g.2 - Time-delay



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



Select the folder "400" and validate with OK.

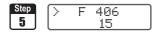




and validate with ®.



With ⊕ and ⊖ keys, set the required time-delay: from @@ to 6@ seconds. If you do not need the time-delay, enter 22. Validate with ®



The cursor > returns to sub-folders line.

- press twice (so) to return to reading mode.
- press once (55) to return to another folder selection.
- with \oplus and \bigcirc keys, you can choose another sub-folder from the folder 400.

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7. Pressure measurement configuration

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

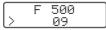


Go into configuration mode (see page 2). The folder number displayed corresponds to the last configuration folder used.



Select the folder "500" and validate with .





09

Select the sub-folder "500" and validate with . The cursor > returns to available choices.



With ullet and ullet keys, you can set the integration value: from ullet 0 09.

Validate with ®

Coefficient 0: no integration, large variation of the measurement

displayed.

Coefficient 9: maximum integration, more stable measurement display.





The cursor > returns to sub-folder selection

- press once 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.

Rugghölzli 2





8. Humidity measurement configuration

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	$\overline{}$		
1	<u> </u>	F	100

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



> 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 \bigodot , enter the offset value: from -50 - 0 to +50 - 0. Validate with -



> F 500

The cursor > returns to sub-folders line.

- press once on (Esc) 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. Air velocity measurement configuration

9.a - Temperature compensation

You can modify the temperature compensation value.

600 20

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

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

Select the folder "600" and validate with . 600

Select the sub-folder "600" to enter a value in °C 600 3 or "601" to enter a value in °F, validate with ^{©K}. The cursor > returns to available choices.

600 With ⊕ and ⊖ keys, enter the temperature compensation (Celsius degree 20 shown alongside, sub-folder "600"). Validate with os.

The cursor > returns to sub-folders line.

- press twice (see) to return to reading mode.
- press once (50) to return to another folder selection.
- with \oplus and \ominus keys, you can choose another sub-folder from the folder 600.

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.



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9. Air velocity measurement configuration

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

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

Select the folder "600" and validate with . F 600

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

603 With \odot and \bigcirc keys, select the differential probe type. Validate with \bigcirc s. 00

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

The cursor > returns to sub-folders line.

- press twice (so) to return to reading mode.
- press once (so 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. NOTE

9.b.1 - Manual coefficient innut

603

604 0.8165

00

Select the folder "600" and validate with . 600

604 Select the sub-folder "604" and validate with . 0.8165 The cursor > goes to available choices.

604 With + and - keys, enter the coefficient relative to your differential **probe.** This coefficient is given by the manufacturer (from 0.0001 to 9.9999). 0.8165 Validate with ®

> The cursor > returns to sub-folders line. • press twice to return to reading mode.

- press once (so) to return to another folder selection.
- with \oplus and \bigcirc keys, you can choose another sub-folder from the folder 600.



9. Air velocity measurement configuration

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

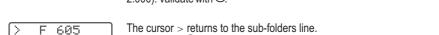
9.c.2 - Coefficient input

.024

0.0	
Step > F 100	Go into configuration mode (see page 2). The folder number displayed corresponds to the last configuration folder used.
Step > F 600	Select the folder "600" and validate with [™] .

				_
Step 3	\triangleright	F	605	Select the sub-folder "605" and validate with .
<u> </u>			00	→ The cursor > goes to available choices.

Step 4	F 605 > 1.024	With $\textcircled{+}$ and $\textcircled{-}$ keys, enter the coefficient value calculated (from 0.200 to 2.000). Validate with $\textcircled{-}$.
--------	------------------	---



- 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.

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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 > F 100

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

Step > F 600

Select the folder "600" and validate with .

Step > F 606 3 00

Select the sub-folder "**606**" and validate with ^(x). The cursor > goes to available choices.

Step F 606 2 90

With igoplus and igoplus keys, select the section type (@@ or @1).

Validate with .

Code	Section type
00	Rectangular
01	Circular
02	Airflow coefficient (to be entered, see p 24)

> F 606 5 90 The cursor > returns to sub-folders line.

- press twice (Esc) to return to reading mode.
- press once (see to return to another folder selection.
- with \oplus and \bigcirc keys to choose another sub-folder from the folder 600.

Section sizes input

Step > F

> 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 ®





10. Airflow measurement configuration



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



> F 607 1500 The cursor > returns to sub-folders line.

- press twice (so) to return to reading mode.
- press once (55) to return to another folder selection.
- with \oplus and \bigcirc keys, you can choose another sub-folder from the folder 600.

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.

Airflow = C_n 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 igoplus and igoplus keys, select 02 and validate with igotimes.

Step > 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 OS.

Step 3

F 613 40.25 Select the sub-folder "613" and validate with (as). The cursor > goes to available choices.

Step 4

F 613 > 40.25

With ⊕ and ⊖ keys, enter the airflow coefficient value (from 0.1 to 9999.9). Validate with ⊛

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 (ex).

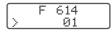
The cursor > returns to available choices.





10. Airflow measurement configuration

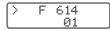




With $\ensuremath{\ensuremath}\amb}}}}}}}}}}}}}}}}}}}$ chart below). Validate with ®.

	Cp201 and 202	CP203 and 204
01	Pa	mbar
02	mmH ₂ O	inWg
03	inWg	KPa
04	mbar	PSI
05	mmHg	mmHg





The cursor > returns to sub-folders line.

- \bullet press twice $^{\text{\tiny{Esc}}}$ to return to reading mode.
- press once (see) to return to another folder selection.
 with (1) and (2) keys to choose another sub-folder from the folder 600.

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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.

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 (%)

3

103 Й1

Select the sub-folder "103" and validate

with ®

103 01

With \oplus and \bigcirc keys, select 00 to deactivate the RS 232 output or 01 to activate. Validate

with ®



103 Й1

The cursor > returns to sub-folders line.

- press twice (so to return to reading mode.
- press once (so to return to another folder selection.
- with \oplus and \bigcirc kevs, you can choose another sub-folder from the folder 100.

11.b- Serial number display

1

100

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

100

Select the folder "100" and validate with .

Step

105 04.03.2004 select sub-folder "105"

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105 04.03.2004 The serial number of the transmitter is displayed.

The cursor > returns to sub-folders line.

- press twice (Esc) to return to reading mode.
- press once (50) to return to another folder selection.
- with \oplus and \bigcirc 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.

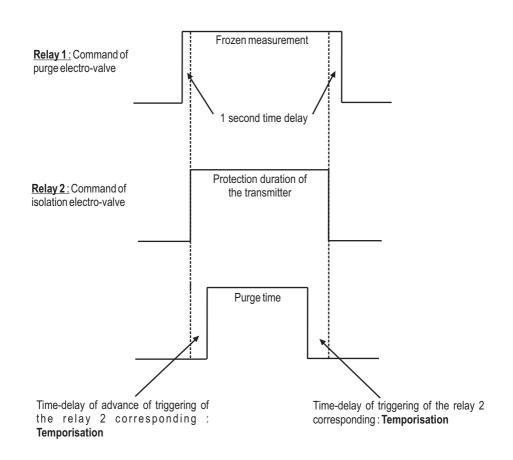
Here is the detailed process of purge mode:

- 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.





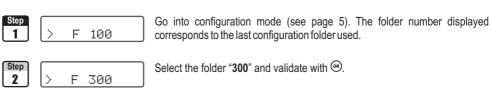
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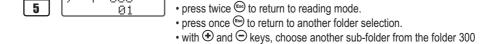
11.c.1 - Activation / deactivation of Purge Mode



Step	> F 306	Select the sub-folder "306" and validate with .
3	00	J

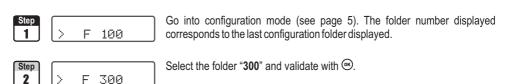
306

Step 4	F >	306 01	With $lacktriangledown$ and $lacktriangledown$ keys, activate (01) or deactivate (00) the purge mode. Validate with $lacktriangledown$.
--------	-----	-----------	--



The cursor > returns to sub-folders line.

11.c.2 -Working duration of purge mode



Step	>	F	307	Select the sub-folder "307" and validate with (98).	

Step		F 307	With ⊕ and ⊖ keys, enter the value in seconds of the required
Step 4	1>	25	working duration of each purge (from 01 to 60). Validate with

5	<u> </u>	F 	307 <u>25</u>	 • press twice be to return to reading mode. • press once be to return to another folder selection. • press and color to choose another sub-folder from the folder 300
				proce of and of to one cood another day relate from the relater occ



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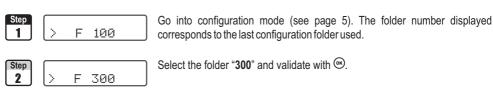
Rugghölzli 2



Step

11.c.3 -Frequency

308 Й1



Select the sub-folder "308" and validate with (%).

of each purge (from 01 to 9999). Validate with .

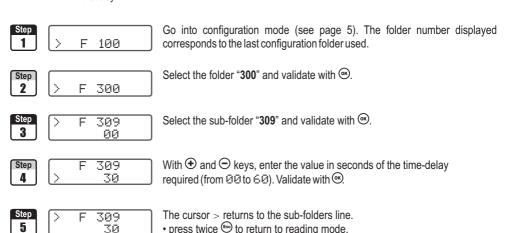
Step >	With keys \oplus and \bigcirc , enter the value in minutes of the frequency of each purge (from 01 to 9999). Validate with $\stackrel{\textcircled{\tiny{69}}}{}$

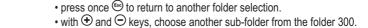
Step			700	
Step 5	12	г	308	The cursor > returns to sub-folders line.
			200	 press twice to return to reading mode.
				• press once (Eso) to return to another folder selection.

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.

• with \oplus and \bigcirc , 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)









Code Description

101 Backlight Display contrast control

102 103 Sending data via Rs232

104 Keypad locking 105 Serial number display

Available settings

0 or 1

from 0 to 10

0 or 10 or 1

🗇 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	mmH₂O	inWg	°F	fpm
03	inWg	KPa	%RH	°C
04	mbar	PSI	g/Kg (absolute humid. ρ)	°F
05	mmHg	mmHg	°C (dew temp. Td)	m³/h
06	m/s	m/s	°F (dew temp. Td)	L/s
07	fpm	fpm	°C (humid temp. Tw)	cfm
08	m³/h	m³/h	°F (humid temp. Tw)	m³/s
09	L/s	L/s	KJ/Kg (Enthalpy i)	
10	cfm	cfm		
11	m³/s	m³/s		



M FKAA M

Code Description

300 Analogue output setting on channel 1

301 Analogue output minimum on channel 1 302 Analogue output maximum on channel 1

303 Analogue output setting on channel 2

304 Analogue output minimum on channel 2 305 Analogue output maximum on channel 2

306 Activation / Deactivation of purge mode 307 Working time of each purge

308 Frequency of each purge Time-delay before and after purge

Available settings

0=>0V, 1=>5V, 2=>10V 3=>4mA, 4=>12mA, 5=>20mA

0=>0V, **1**=>5V, **2**=>10V

3=>4mA, 4=>12mA, 5=>20mA

00 or 01

from 01 to 60 seconds from 01 to 9999 minutes from 00 to 60 seconds



□ F400 □

	400	Description Audible alarm	Available settings 0 or 1
_	401 402 403	Relays security Channel selection for alarm 1 Alarm 1 type selection	0 (negatve) or 1 (positive) 1=>channel 1, 2=> channel 2 0=>inactive
ALARM	404 405 406	Setpoint 1 of alarm 1 Setpoint 2 of alarm 1 Time-delay of alarm 1	1=> setpoint 1, setpoint 2 and time-delay 2=> setpoint 1, time-delay and rising action 3=> setpoint 1, time-delay and falling action from 0 to 60 seconds
	460	Time-delay of alarm 1	nom o to 60 seconds
RM 2	407 408	Channel selection for alarm 2 Alarm 2 type selection	1=>channel 1, 2=> channel 2 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
ALARM	409 410 411	Setpoint 1 of alarm 2 Setpoint 2 of alarm 2 Time-delay of alarm 2	from 0 to 60 seconds
ELAY 1	412 413	Channel selection for Relay 1 Alarm type selection for Relay 1	1=>channel 1, 2=> channel 2 0=>inactive 1=> setpoint 1, setpoint 2 and time-delay 2=> setpoint 1, time-delay and rising action
REL	414 415 416	Setpoint 1 of Relay 1 Setpoint 2 of Relay 1 Time-delay of Relay 1	3=> setpoint 1, time-delay and falling action from 0 to 60 seconds
, 2	417 418	Channel selection for Relay 2 Alarm type selection for Relay 1	1=>channel 1, 2=> channel 2 0=>inactive 1=> setpoint 1, setpoint 2 and time-delay
RELAY	419 420 421	Setpoint 1 of Relay 2 Setpoint 2 of Relay 2 Time-delay of Relay 2	2=> setpoint 1, time-delay and rising action 3=> setpoint 1, time-delay and falling action from 0 to 60 seconds

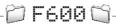








Code	Product	Description	Available settings
500	CP200	Measurement integration	from 0 to 9
500	TH200	Offset in humidity	-50,0 to +50,0
501	TH200	Offset in temperature (°C)	from -50,0 to +50,0
502	TH200	Offset in temperature (°F)	from -90,0 to +90,0



Code Description

600 Compensation temperature in °C* 601 Compensation temperature in °F* 603 Air velocity measurement mean*

604 Air velocity coefficient value*
605 Air velocity correction coefficient

595 Section type selection

CP 200 - CT

607 Section length in mm 608 Section width in mm

609 Section diameter in mm

510 Section length in inch511 Section width in inch

612 Section diameter in inch

613 Airflow coefficient*

614 Units of pressure for the pressure calculation*

Available settings

-

-

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

from 0,0001 to 9,9999 from 0,200 to 2,000

Code	Section type
00	Rectangular
01	Circular
02	Airflow coefficient

from 0 to 3000 mm from 0 to 3000 mm from 0 to 3000 mm

from 0 to 118.11 inch from 0 to 118.11 inch from 0 to 118,11 inch

from 0.1 to 9999.9

	CP201 and 20	2 CP203 and 204
01	Pa	mbar
02	mmH₂O	inWg
03	inWg	KPa
04	mbar	PSI
05	mmHg	mmHg