XPFA climate control

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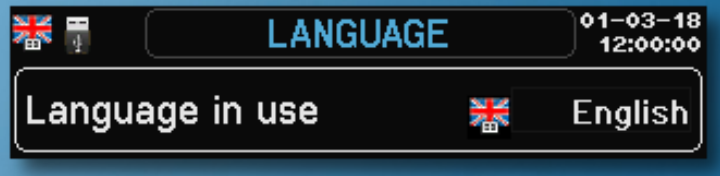
Main feature

The main feature of the XPFA is the color display screen (3.5") with 320x240 dots resolution with led backlighting. **XPFA** is made in DIN 96x96 format and the module dimensions are 96x96mm.

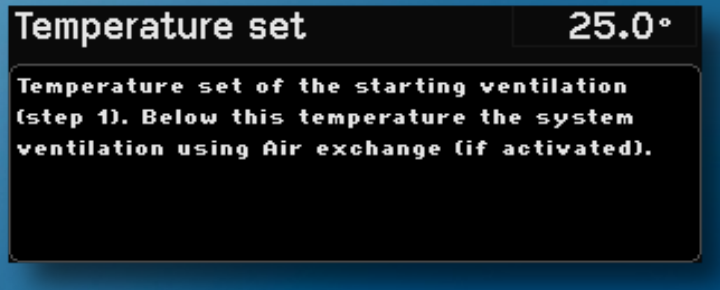
The user interface is easy and friendly.
The easy touch screen system gives both the typical "easy to use" approach of a touch screen system and the strength and mechanical protection of a polycarbonate IP54 keyboard.

At every screen the function keys display a different graphic making the program very user friendly.

The user can select the display language: all the wordings, acronyms and "help" texts for programming assistance will be displayed in the chosen language.



Each programming step has its own help screen so the program has a "built in" instruction manual.



Multilanguage

Choosing the language every screen will be displayed at the user language making the customer more confident with the **XPFA** use

XPFA climate control

Inputs and outputs

INPUTS

- Ventilation temperature probe 1-2
- Heating temperature probe 1-2-3
- Air inlet 1-2 temperature probe
- Air inlet 1-2 potentiometer
- Humidity probe
- CO2 probe
- NH3 probe
- Outdoor temperature probe
- DP59/W pressure sensor
- Water counter signal input
- External alarm input signal contact

OUTPUTS On/Off

- Ventilation command 1-2-3-4-5-6-7-8-9-10
- Ambient heating command 1-2-3
- Inlet flap 1-2 command
- Cooling command
- Light command
- Alarm command

OUTPUTS 0-10V

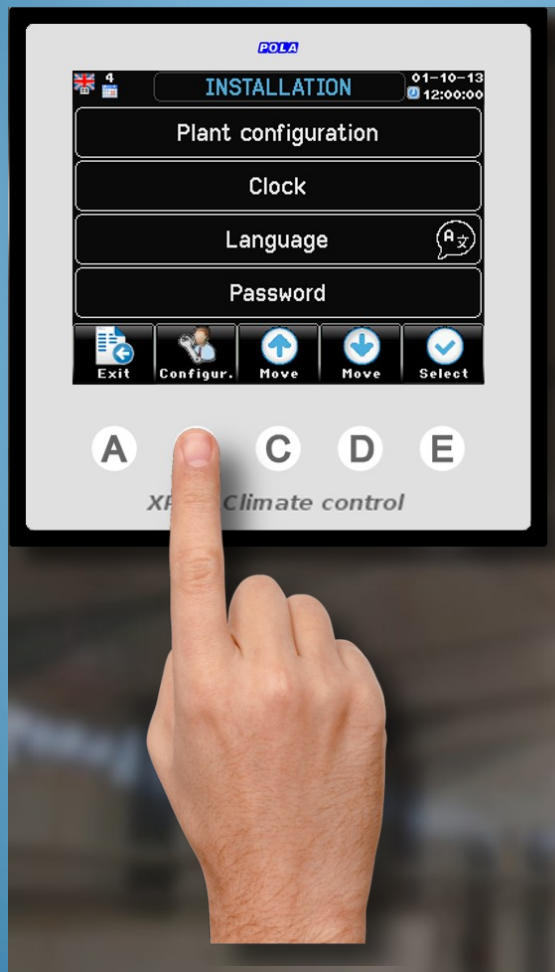
- Ventilation
- Air inlet flap 1
- Air inlet flap 2
- Light

Other available connections:

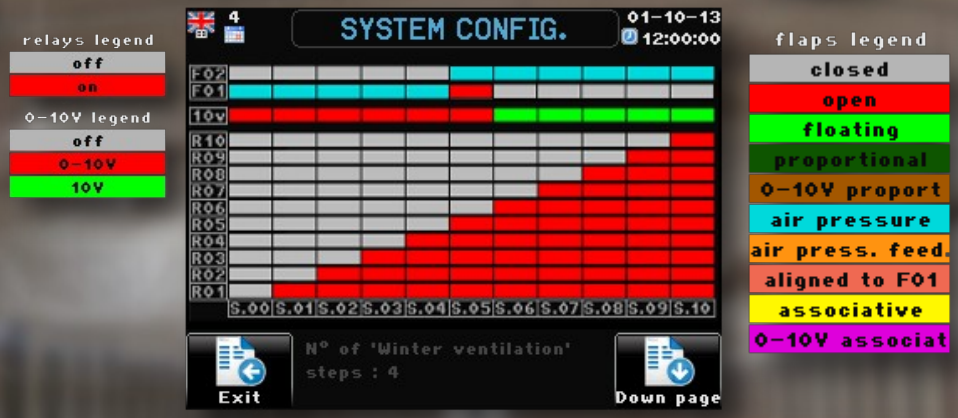
- **USB plug**
  XPFA has a USB plug inside.
- **XNET**
  Network connection card (optional) for **XPFA** processor (see remote supervision).

Climate configuration

By setting a few parameters in "Climate configuration" you can choose between several types of typical climate control systems.



XPFA displays the climate control configuration according to what programmed in the "Climate Configuration" section.



16 inputs - 21 on-off outputs and 4 0-10V outputs can be assigned to climate control:

- 10 x On-Off ventilation Steps with Winter-Summer ventilation mode
- 0-10V ventilation by inverter
- 2 x flaps (air inlets) working either by static pressure or Associative or Proportional or Natural mode
- 3 Independent heating section
- 1 Cooling
- 1 Light (On / Off and 0-10V)

Ambient

Complete control of environmental parameters, sensors available:

SX
Temperature probe

WT1s
Psycrometric kit dry and wet bulb

Or

RHR
Humidity probe
0...100%

CO2E
CO2 probe
0...10.000ppm

NH3D
ammonia probe
0.... 100ppm

<u>Average temperature value</u>
Up to 2 probes can be connected to measure the indoor ventilation temperature.
These probes, alongwith the heating and the flaps probes can be connected to create an "average" temperature value as a mix of the temperatures as recorded by the above probes.

<u>Humidity probe</u>
The %RH probe affects Ventilation and Cooling systems.

<u>C02 - NH3 probe</u>
CO2 and NH3 probes affects Ventilation systems.

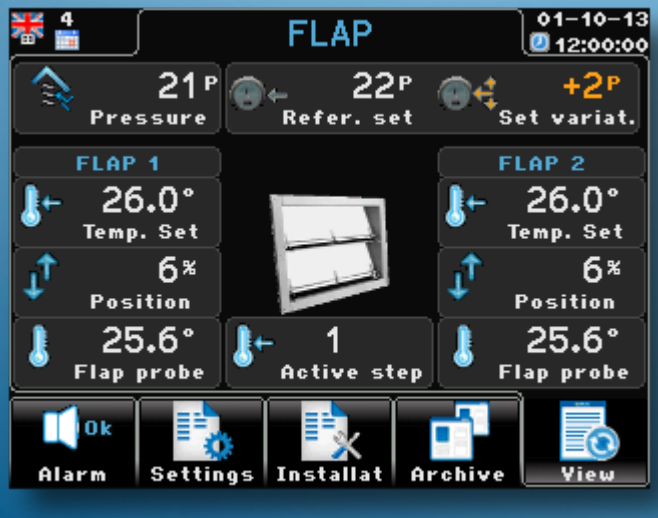
<u>Calendar</u>
Heating and ventilation options can be set to run automatically according to the day of the batch.

Ventilation / Flaps

Up to 10 x independent and fully configurable ventilation steps according to following

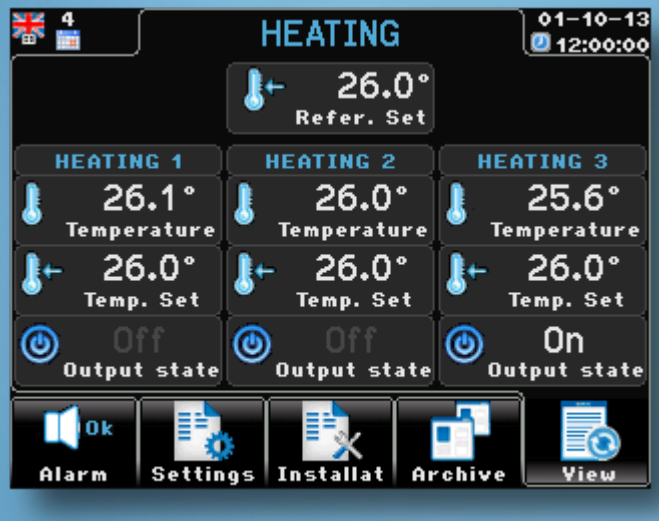
Typical options:

- On / Off
- Proportional by 0 -10 V for triac / inverter speed control
- Or a combinations of the two systems above.

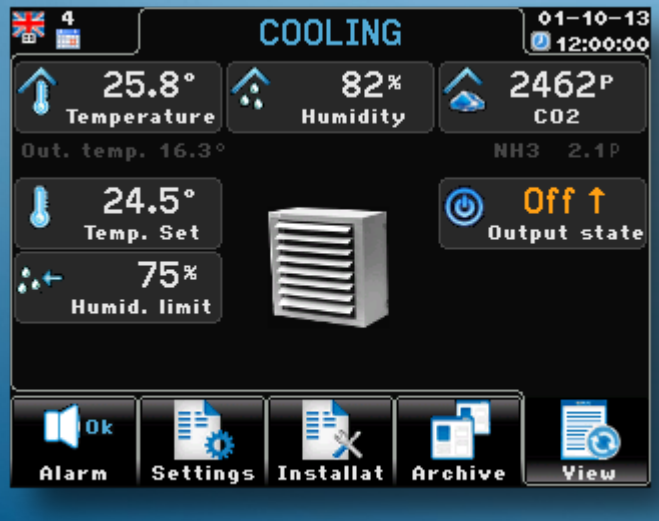


Up to 2 independent flaps (air inlets) working either by static pressure by Depressiometer or Associative or Proportional or Natural mode (by 0-10V or by feedback potentiometer).

Heating / Cooling



3 ON-OFF heaters with indipendent temperature probe.



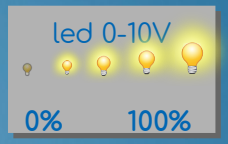
Controls of cooling system by temperature and % RH.

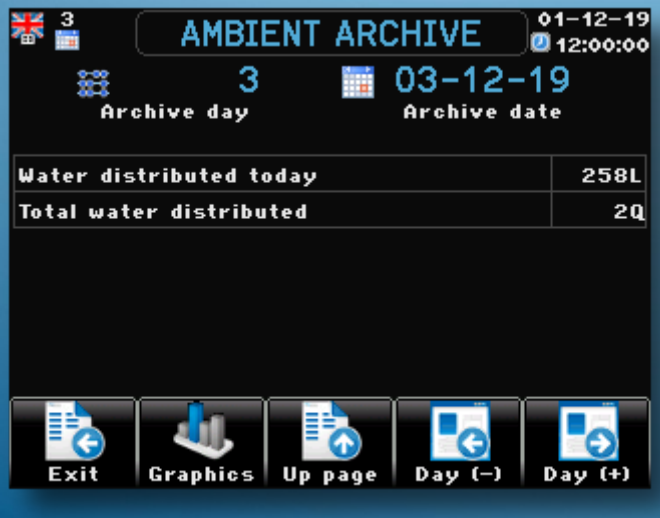
Lights / Water consumption recording

Lights working mode:

- On / Off

- Led 0-10V

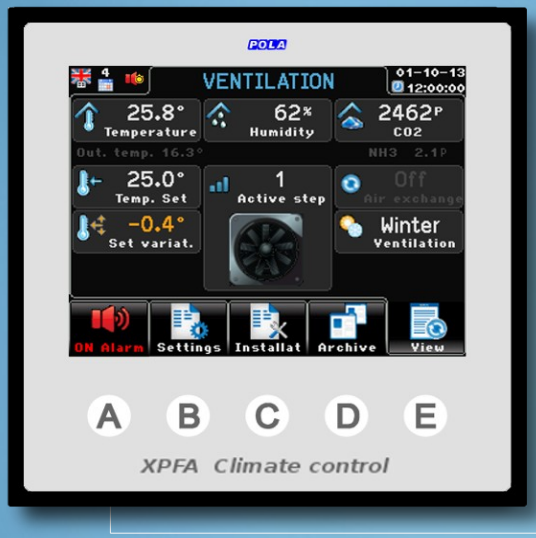


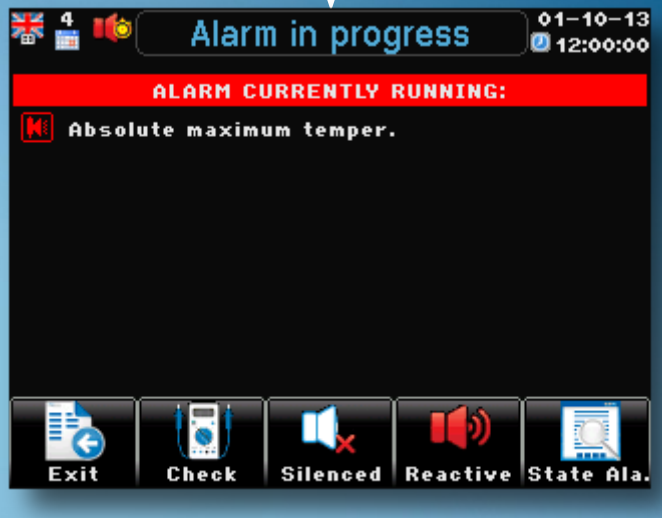


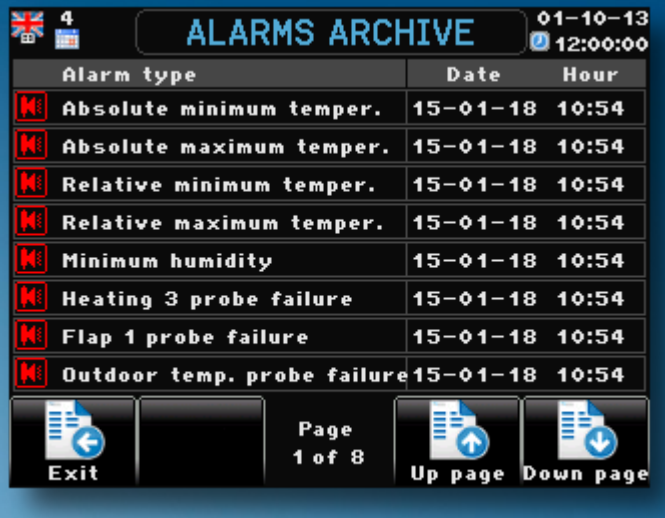
Water consumption is recorded by the CWD water meter.

CWD

Alarms managements







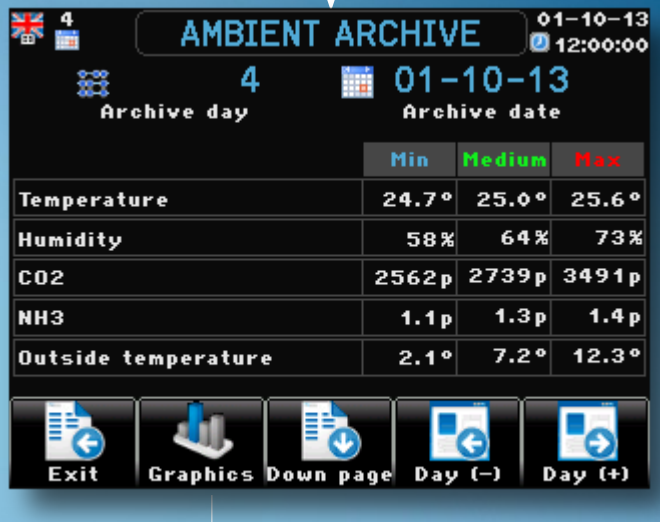
Recording all the alarm events for temperature, humidity, air-pressure,C02-NH3, including alarm exclusions.
Archives contain all alarms triggered during current cycle.

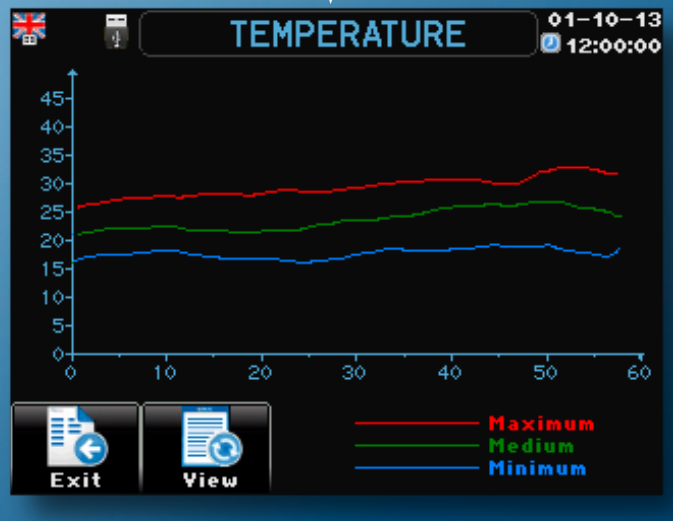
HP29 independent alarm (option)

Independent ventilation alarm unit which is a supplementary source of the following alarm:

- Minimum and maximum temperature.
- Minimum and maximum air-pressure.
- Check of XPFA correct functions by a signal sent every 6 min (watchdog).

XPFA records all the parameters of the environment





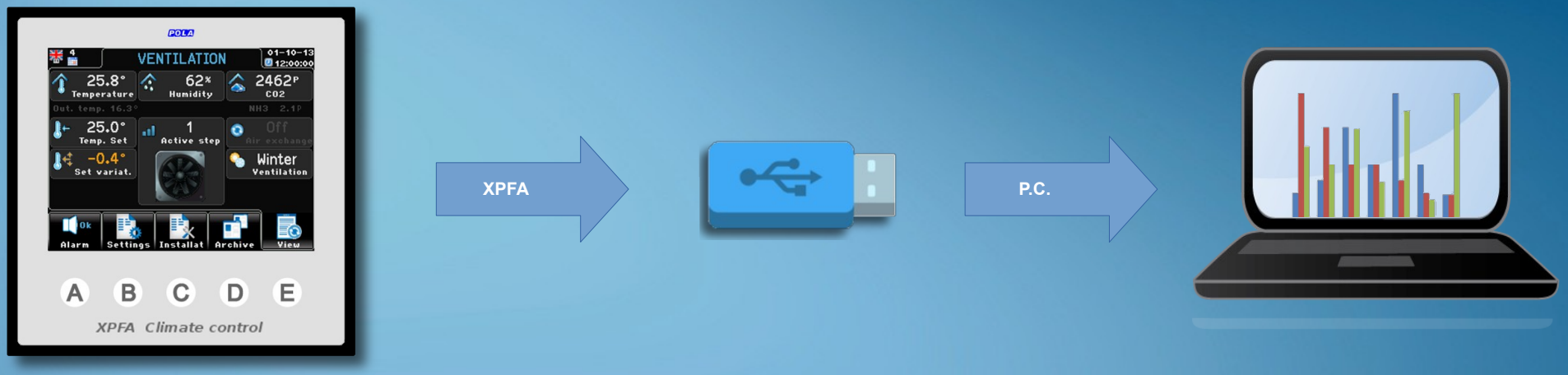
Multiple levels of registrations:

- Daily data, a recording for each day of the cycle
- Data of every single day with sampling every 15 minutes
- Full cycle data

The daily archive records the following parameters:

- Temperature
- Humidity
- CO2
- NH3
- Outside temperature
- Water consumption

Data transfer

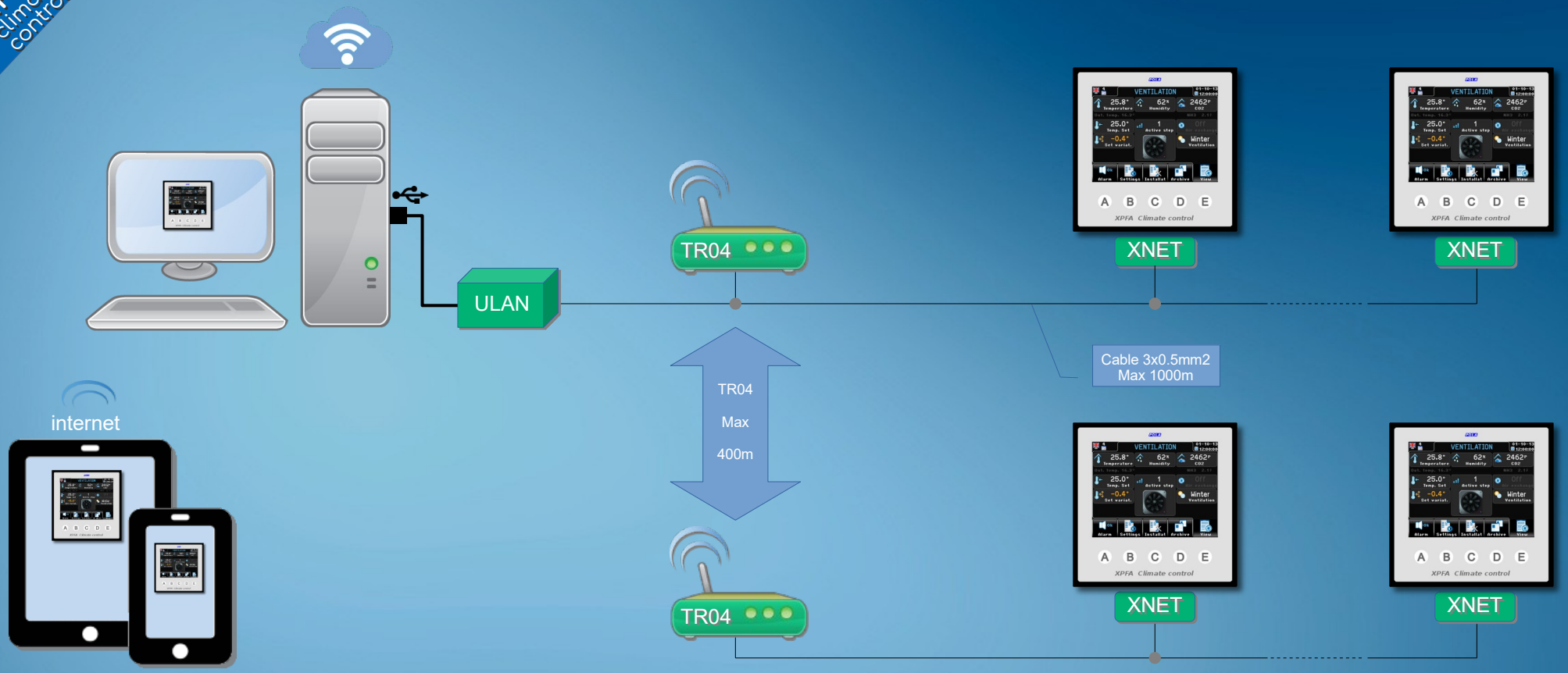


The communication with the outside world is performed by USB key.

- **Export archives**
  XPFA save in the USB memory a file containing all the day by day recorded data of the cycle.
  Connecting the USB key to a PC and by using the XPFA **Dialogue** software you can browse the recorded data in grid or graph formats.

- **Importing / saving the setting**
  You can save a file with all back-up infos on a USB file.
  Saved settings can be uploaded on **XPFA** anytime by a user friendly procedure.

Remote supervision



Remote supervision of **XPFA** processors grants the full management of system by PC.

The XPFA **Net Pro** supervision software enables the full remote control of network connected processors.
ULAN peripheral is connected to PC through a USB connection. **XPFA – ULAN** connection is done by a simple 3 wires cable.
In all cases where **ULAN** cannot be cabled to **XPFA** we can supply **TR04** radio-modems with a reach of 400 mt.

Components for creating a supervision system:

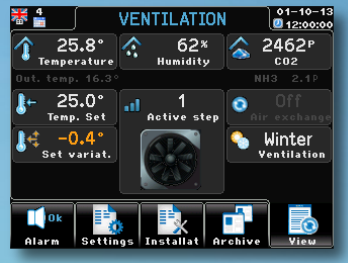
- **ULAN**: Network server Pc (with USB connection)
- **XNET**: Network adapter card (one for each **XPFA**)
- **TR04**: Radio-modem 485 (optional, to be used only when it is not possible to use the cable)

XPFA climate control

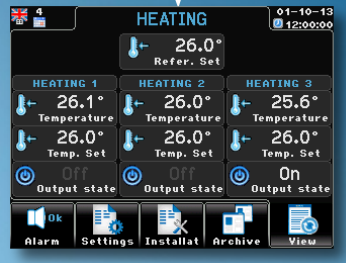
Sample screenshots

Home

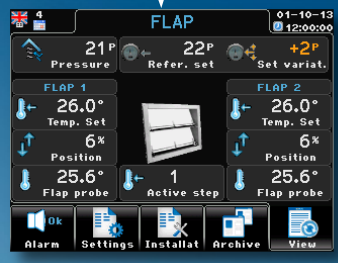
view screens



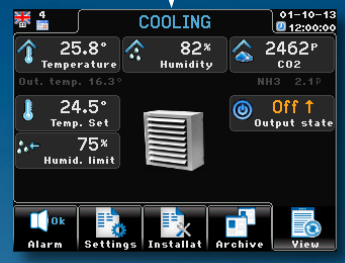
ventilation view



heating view



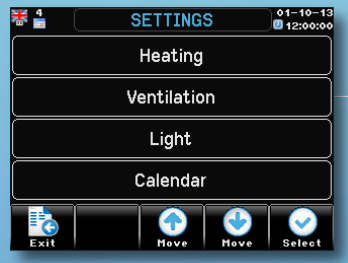
flap view



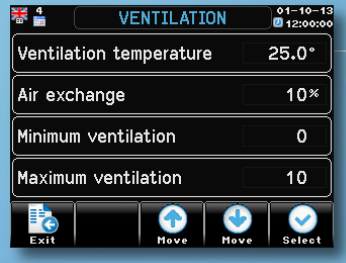
cooling view

Imposta

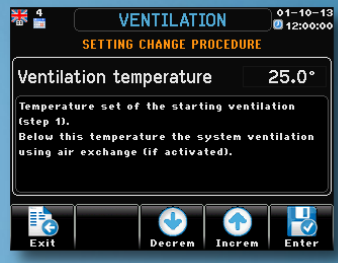
setting screens



settings selection



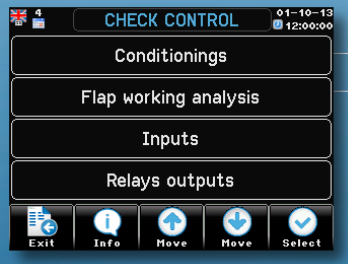
ventilation selection



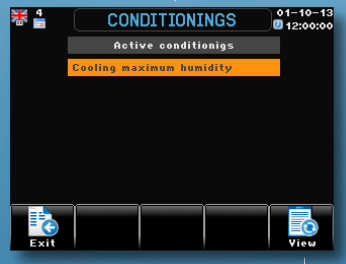
ventilation temperature change

Check

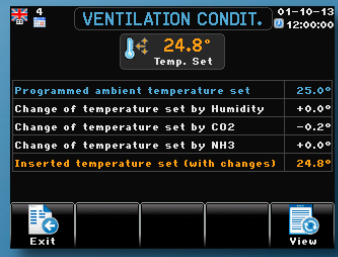
check control screens



check control selection



active conditionings

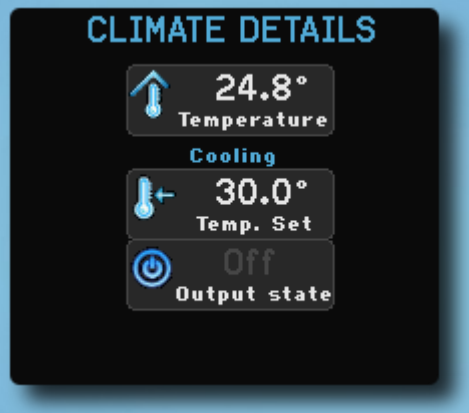


ventilation conditioning

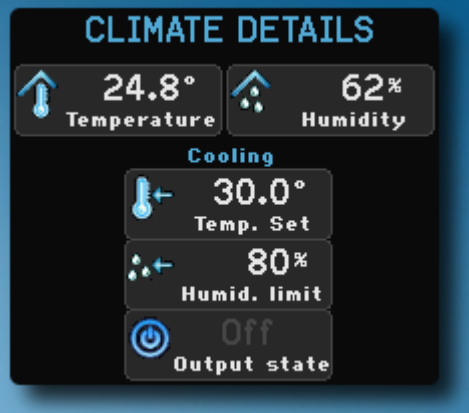
air exchange conditioning

Temperature / humidity sensors combination

Only Temperature control



Temperature & Humidity control



Option to order

SX

Temperature probe

Option to order

WT1s

Psycrometric kit dry and wet bulb

Or

SX

Temperature probe

RHR + HA20s

0...100% humidity probe + Power supply

Sensors summary

XPFA does not come with probes: they must be ordered separately.


Ambient temperature probe

- Without humidity control (or with humidity control by humidity probe **RHR**): add N. 1 **SX** (*1) (*2)


Outdoor temperature probe

- If required add N. 1 **SX**


Humidity control

- If required psycrometric system: add N. 1 WT1s (WT1s inclouded **SX** ambient temperature probe)

or

- If required electronic probe: add N. 1 **RHR** + N. 1 **HA20s**


CO2 control

- If required add N. 1 **CO2E** + N. 1 **HA20s**


NH3 control

- If required add N. 1 **NH3D** + N. 1 **HAR5**


Flaps pressure control

- If required add N. 1 **DP59/W**

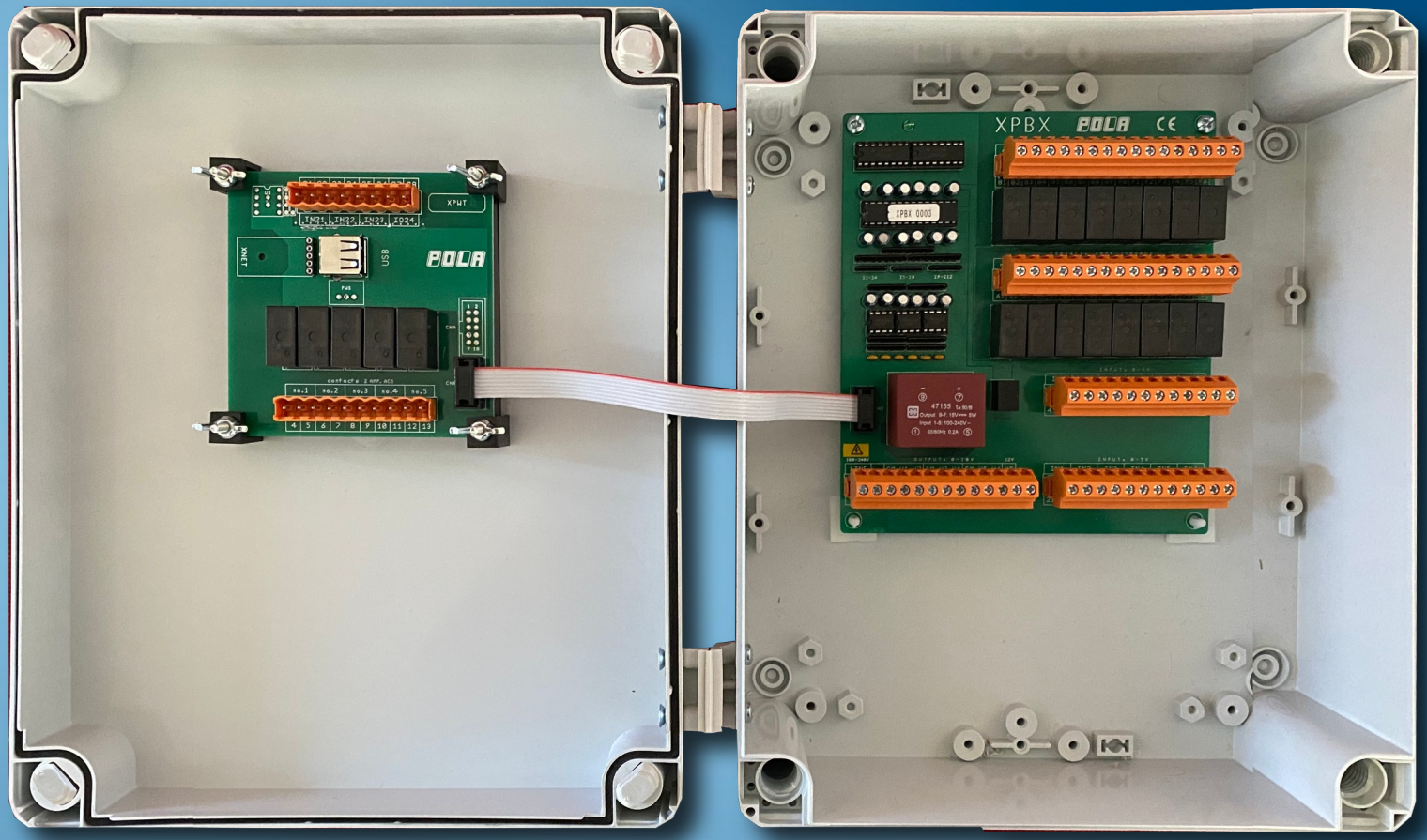
*1: About Temperature / humidity sensors combination read here.
*2: If heatings or flaps with independent temperature probes are required add **SX** temperature probes.

XPFA climate control

Options available

Model	*Description*
XPFA	Climate control unit
	Options
SX	Temperature probe. XPFA does not come with probes: They must be ordered separately (read 'Sensors summary')
DP59/W	Air pressure transmitter
WT1s	Psycrometric kit to control the ambient %RH Includes the SX temperature sensor (so no need to order an extra SX when the WT1s kit is installed)
RHR	Humidity probe 0...100% (required **HA20s** power supply)
CO2E	CO2 probe 0...10.000ppm (required **HA20s** power supply)
NH3D	Ammonia probe 0.... 100ppm (required **HAR5** power supply)
HA20s	Power supply for RHR/CO2E (N° 1 **HA20s** for each probe)
HAR5	Power supply for **NH3D**
FX01	Drive electrical box for three-phase gear-motor (specify motor power), with 1 **SX** temperature probe included
PT	Flap response potentiometer (1 KOhm)
USBP	External IP65 USB socket (to be mounted externally, to access the USB without the need to access inside of the **XPFA**)
HMVU	0-10V gear-motor / ventilation control manualizer
HMVU/W	0-10V gear-motor / ventilation control manualizer (with IP54 box for wall mounting + gasket + transparent cover)
CWD	Water counter
HP29	Independent alarm temperature/pressure/watch dog
W01	IP54 box for wall mounting + gasket + **CXP** transparent cover (option for **HP29**)
XNET	Network nodal point
ULAN	Network server Pc (with USB connection)
TR04	Radio-modem 485 (IP55 junction box with power supply 230/12v)

XPFA technical specification



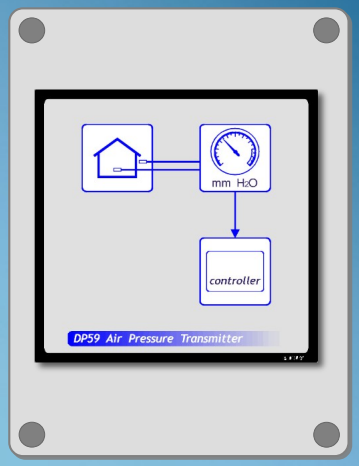
Dimension: 270x230x130mm (HxLxP)
Protection degree: IP54
Case material: PVC
Power supply: 100-240V 50/60Hz
Power consumption: 5W
Supplied with: **CXP** transparent cover that can be opened with a hinge.

Note:
XPFA does not come with any probes.
Read ‘ Sensors summary ’ about probes.

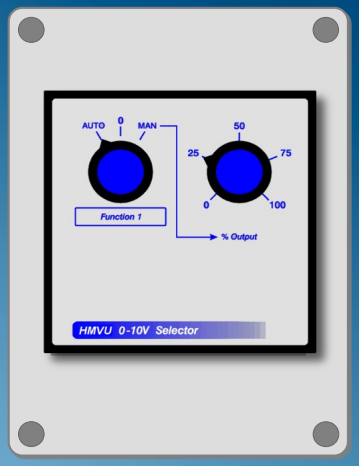
XPFA climate control

Options available

FX01



DP59/W



HMVU/W

W01

HP29 W01

SX

WT1s

RHR

CO2E

NH3D

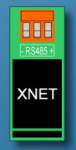
CWD

PT

HA20s

HAR5

ULAN



XNET

USBP

TR04

XPFA climate control

XPFA performance comparison with Our other models

Performance	*Models*				
	XP65	XP66	XPFA	Xfarm	Qfarm
Color graphic display specification	3.5" 320x240	3.5" 320x240	3.5" 320x240	4.3" 480x720	7" 800x480
N. ventilation steps	5	5	10	10	16
Ventilation 0-10V output	No	Yes	Yes	Yes	Yes
N. flaps	1	1	2	2	16
N. heatings	1	1	3	3	16
Fanjet-destratifiers	No	No	No	No	Yes
N. coolings	1	1	1	1	2
Humidification	No	No	No	Yes	Yes
M3/h ventilation	No	No	No	No	Yes
Heat index	No	No	No	No	Yes
Outdoor temperature probe (connection predisposition)	No	No	Yes	Yes	Yes
Humidity probe (connection predisposition)	Yes	Yes	Yes	Yes	Yes
CO2/NH3 probes (connection predisposition)	Yes	No	Yes	Yes	Yes
Growth curve calendar	No	No	Yes	Yes	Yes
Light (On/Off & 0-10V)	No	No	1	1	8
Water counter	No	No	1	1	2
Feed management	No	No	No	Yes	Yes
Birds-weighing	No	No	No	1	2
Silo-weighing	No	No	No	1	3
Total inputs available	4	3	16	24	112
Total outputs On/Off available	11	11	21	30	105
Total outputs 0-10V available	No	1	6	6	32
Data management	Yes	Yes	Yes	Yes	Yes
Data management with USB support	Yes	Yes	Yes	Yes	Yes
Configuring system parameters	on board	on board	on board	on board	by PC
Network connection to PC (supervisor)	Yes	Yes	Yes	Yes	Yes
Drive peripherals not inclouded in the price * N. of the peripherals depends from system's configuration.	N. 1 HDY6	N. 1 HDY6	none (all on board)	* HXNE-HXDA HDY6 TLC0-TLC2	* HXNE-HXDA HDY6 TLC0-TLC2

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40th

40 YEARS OF INNOVATION

XPFA 1.0 Brochure EN 010121