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# Introduction

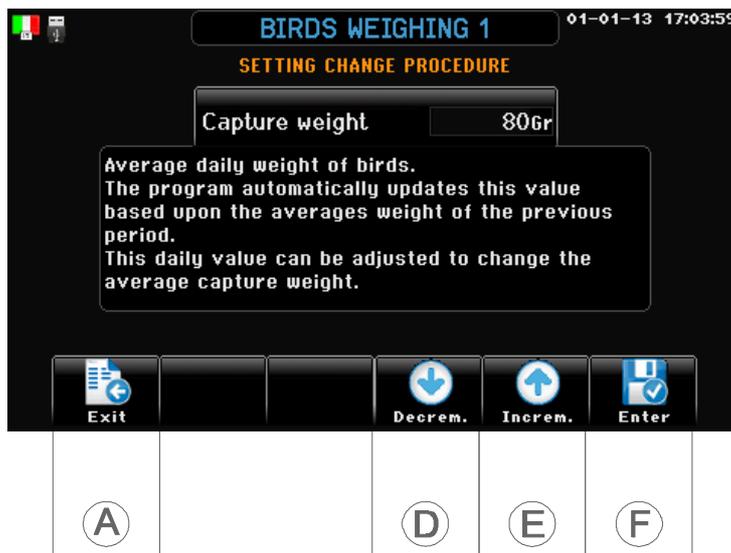
## Xscale

The main feature of the Xscale range is the color display screen (4.3") with WQVGA 480x272 dots resolution. The user interface is easy and friendly. The **easy touch** screen systems gives both the typical "easy to use" approach of a touch screen system and the strength and mechanical protection of a polycarbonate IP65 keyboard. The Xscale IP65 protection standards (protection against dust and water jets) make it ideal for damp and dusty environments.

At every screens the function keys display a different graphic making the program very user friendly. Each programming step has its own help screen so the program has a "built in" instruction manual.



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



Setting values on the keyboard. For each value to be inputted the display looks like the one above:

Input the value by using the keys   or pressing on the numeric keyboard ①..②.....⑩

confirm by pressing , to escape press .

# Home

It's the main reference screenshot of Xscale



It's the main reference screenshot of Xscale which display the main system parameters.

It pops up when you switch the unit on or when you press the key



# 1. Weighing 1 path: Home>①

BIRDS WEIGHING 1
01-01-13 17:03:59

65<sub>Gr</sub>  
Average weight

Cycle day	60	Number of weighing	1268
Target weight	60Gr	Daily increase	12Gr
Target deviation	5Gr	Uniformity	84%
% Target deviation	7.8%	Type of animal	Males

Exit

Home

Settings

Analysys

Archive

See paragraph →

D

E

F

1.D

1.F

ANALYSIS WEIGHINGS 1
01-01-13 17:03:59  
Cycle day: 0

Number of weighing	1268
Last capture	60Gr
Partial average	60Gr
Partial weighings	5
Capture time	1.2"
Minimum capture	4%
Maximum capture	12%
Weight on the plate	0Gr

Exit

Home

Weighing

E

## 1.D Settings 1 path: Home>① Weighing 1>④ Settings



### 1.D.1 Capture weight path: Home>① Weighing 1>④ Settings>① Capture weight



**Capture weight**  
 (Range: 0gr...42gr...50000gr)

Average daily weight of birds.  
 The program automatically updates this value based upon the averages weight of the previous period.  
 This daily value can be adjusted to change the average capture weight.

### 1.D.2 Target weight 1

path: Home > ① Weighing 1 > ② Settings > ③ Target weight



① *Age of birds*  
(Range: 0...999)

Day of life of bird at this point of the growth curve. Cannot be changed (=0) at point zero of curve.

② *Females target*  
(Range: 0gr...42gr...50000gr)

Females target weight at this point of the growth curve.

③ *Males target*  
(Range: 0gr...42gr...50000gr)

Males target weight at this point of the growth curve.

⑥ *Age of birds*  
(Range: 0...999)

Day of life of bird at this point of the growth curve.

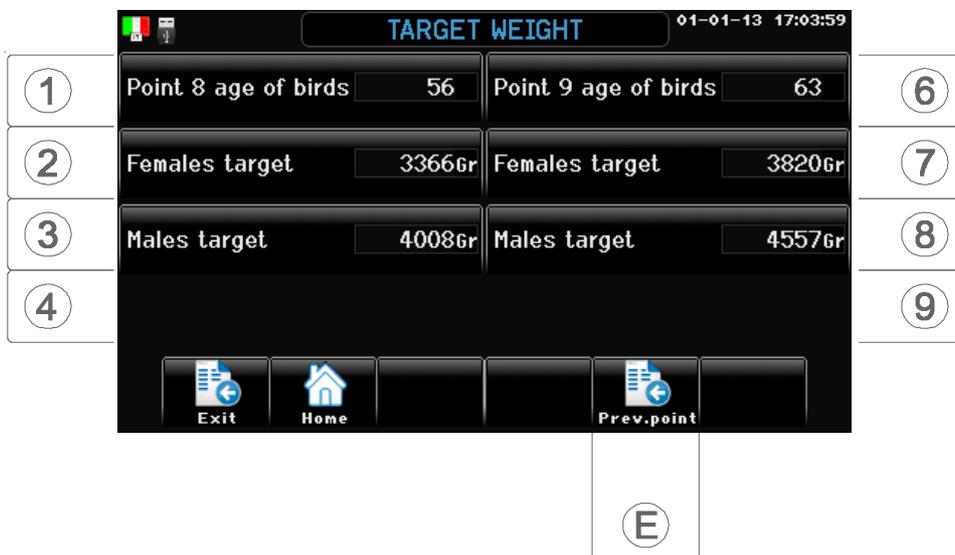
⑦ *Females target*  
(Range: 0gr...42gr...50000gr)

Females target weight at this point of the growth curve.

⑧ *Males target*  
(Range: 0gr...42gr...50000gr)

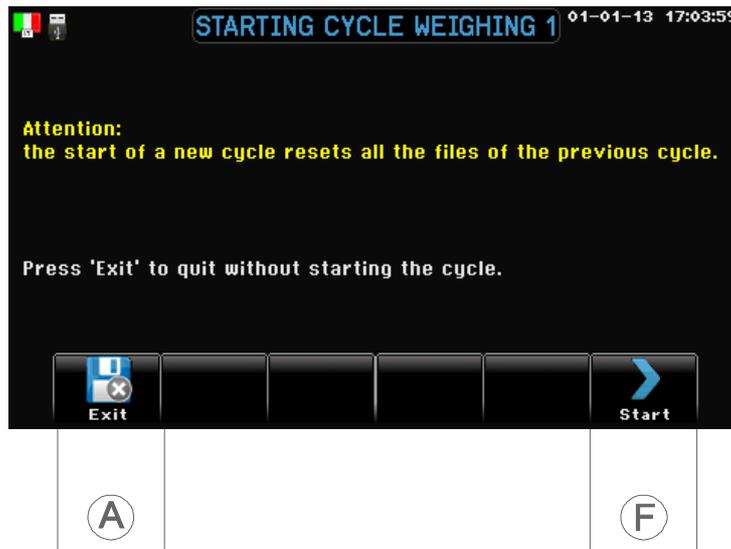
Males target weight at this point of the growth curve.

By pressing ④ you go to next step (continue to point 9).



## 1.D.4 Starting cycle 1

path: Home > ① Weighing 1 > ② Settings > ④ Starting cycle



① *Type of curve*  
(Range: **Males**...Females)

Type of target curve chosen (Males or Females).

② *Age of birds*  
(Range: 0...999)

Age of the birds, in days, introduced at the start of the cycle.

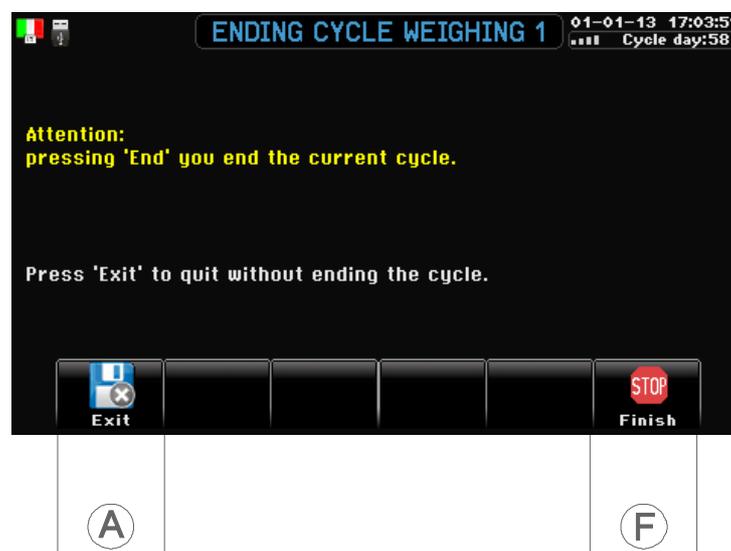
③ *Average weight*  
(Range: 0gr...42gr...50000gr)

Average weight, at the start of the cycle.

**ATTENTION:** the start of a new cycle resets all the files of the previous cycle.  
Cycle must be started up to weight birds!

## 1.D.9 Ending cycle 1

path: Home > ① Weighing 1 > ② Settings > ⑨ Ending cycle



## 1.F Archive 1

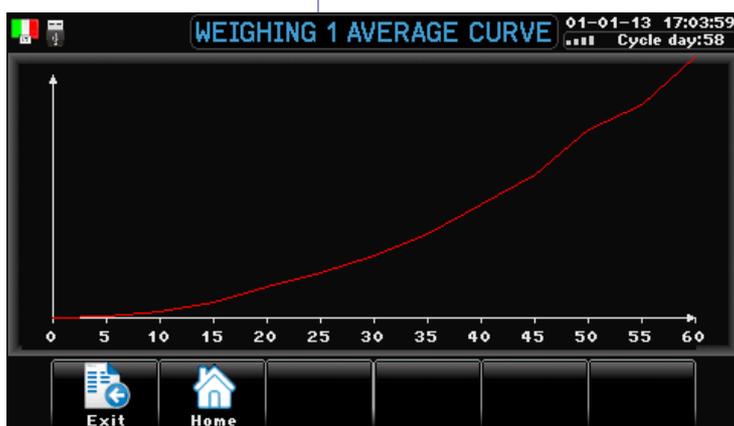
path: Home>① Weighing 1>② Archive



D

E

F

Previous  
dayNext  
day

## 6. Weighing 2 (if present)

path: Home>⑥

Same procedure as per Weighing 1.

## B. Alarm *Home>B*

The icon displayed on top of **C** key gives the situation of the alarm: that icon is also displayed on the high left corner in all others screenshots, with exception of icon .



No alarm is running now. Alarm is anyway enabled.



Delay in alarm intervention: one or more alarms are activated. After 1 min the current alarm will be activated.



Alarm is running now: one or more alarms are activated.



Internal battery voltage failure. Warning: in this case proper functioning of program is not sure.

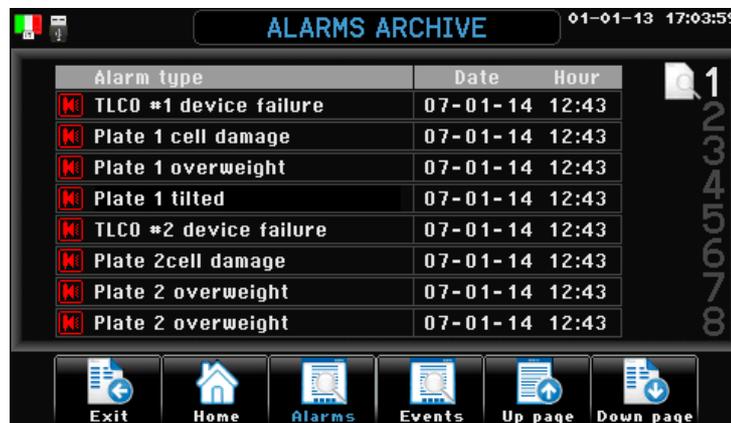


F

*Current alarms status:*

Max 10 alarms are simultaneously displayed (for the complete list see par. B.F).

## B.F Alarms archive *path: Home>B Alarms>F Alarms archive*



C

D

E

F

**B.F.D Events archive**

path: Home>**B** Alarms>**F** Alarms archive>**D** Events archive

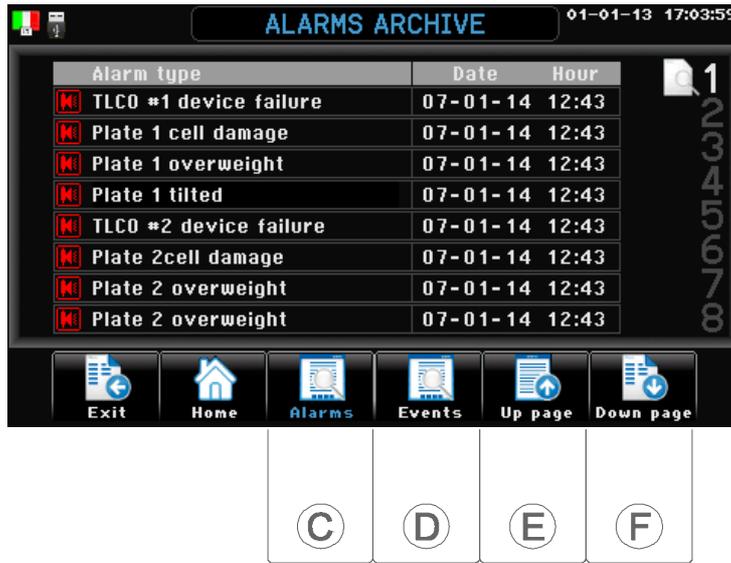


Plate 1 TLCO failure  
 Plate 1 cell damage  
 Plate 1 overweight  
 Plate 1 tilted

Plate 2 TLCO failure  
 Plate 2 cell damage  
 Plate 2 overweight  
 Plate 2 tilted

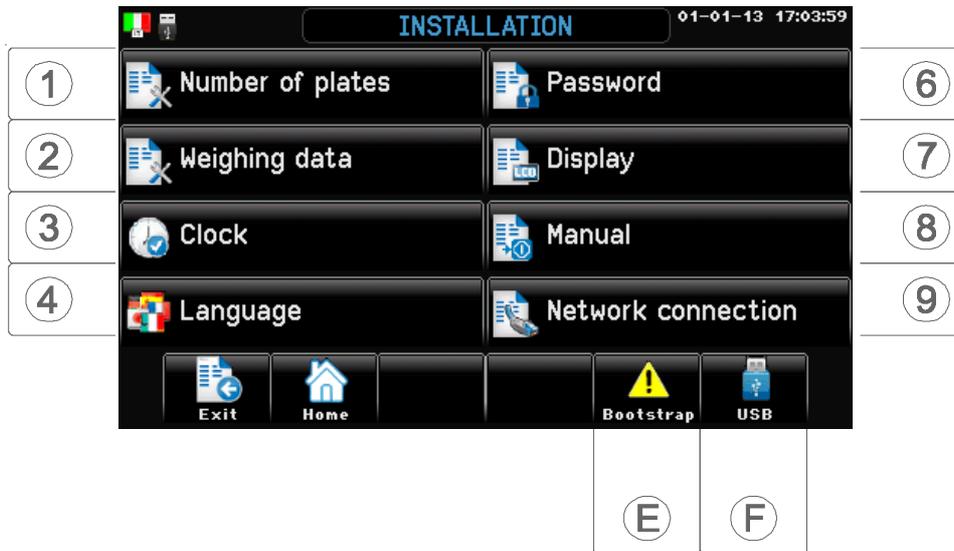
**Alarms**

Power restored  
 Power failure  
 Bootstrap  
 Watchdog (hardware)  
 Watchdog (rtos)  
 Filing Erased  
 Update procedure  
 Starting cycle 1  
 Starting cycle 2  
 Ending cycle 1  
 Ending cycle 2

**Events**

## D. Installation

Path: Home> **D** Installation



### D.1 Number of plates

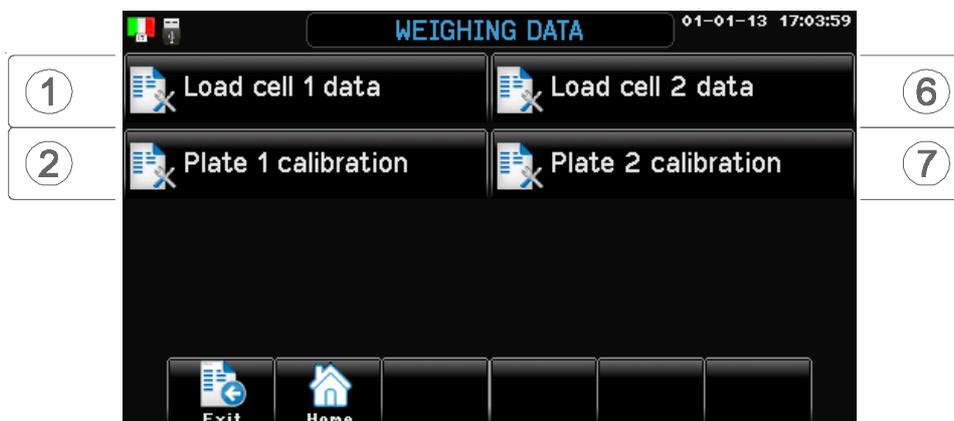
Path: Home> **D** Installation> **1** Number of plates

**1** Number of plates  
(Range: 1...2)

This parameter defines the number of weighing plates connected to **Xscale** (max 2).

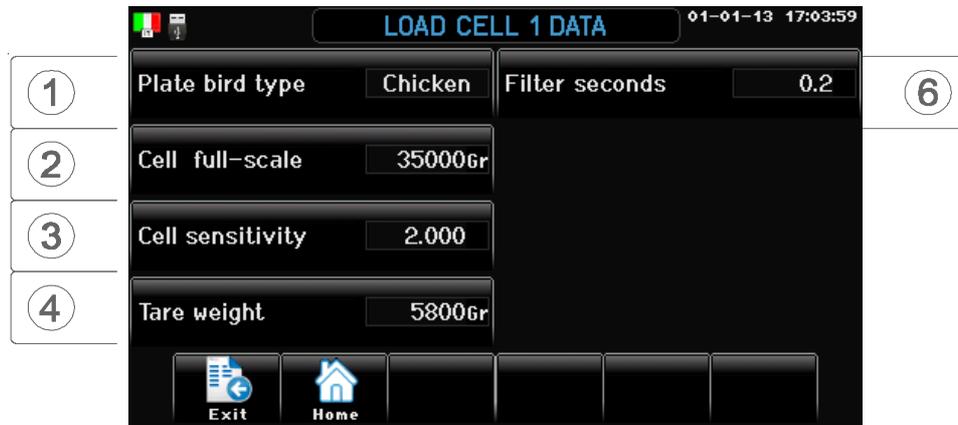
### D.2 Weighing data

Path: Home> **D** Installation> **2** Weighing data



## D.2.1 Plate 1 cell data

Path: Home>④ Installation>② Weighing data>① Plate 1 cell data



### ① Plate bird type

(Range: **Chicken**...Turkey)

Choose between *Chicken* or *Turkey*.

### ② Cell full-scale

(Range: 0g...**35000g**...100000g)

Full scale weight of the load cell  
(see technical specification of the load cell).

### ③ Cell sensitivity

(Range: 0.8...**2.000**...3.300)

Balance loading cell data (see technical features of the load cell).  
Perform a 'Calibration' to automatically record this value.

### ④ Tare weight

(Range: 0g...**5800g**...30000g)

Weight tare.  
Perform an 'Automatic tare' to automatically record this value.

### ⑥ Filter seconds

(Range: 0.0...**0.2**...10.0")

Filter time of the weighing system.

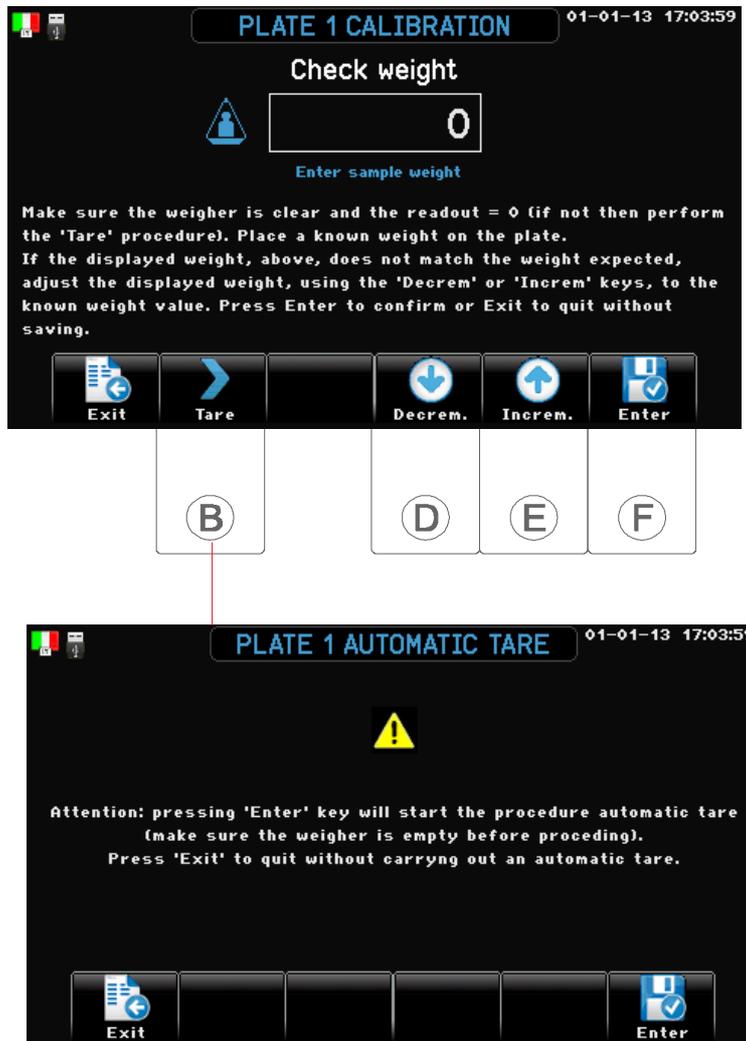
## D.2.6 Plate 2 cell data (if present)

Path: Home>④ Installation>② Weighing data>⑥ Plate 2 cell data

**Same procedure as per Plate 1.**

## D.2.2 Plate 1 calibration

Path: Home>① Installation>② Weighing data>③ Plate 1 calibration



By this procedure you can calibrate the weighing system.

### Plate calibration

Make sure the weigher is clear and the readout = **0** (if not then perform the 'Tare' procedure). Place a known weight on the plate. If the displayed weight, above, does not match the weight expected, adjust the displayed weight, using the **Decr** or **Incr** keys, to the known weight value. Press **Enter** to confirm or **Exit** to quit without saving.

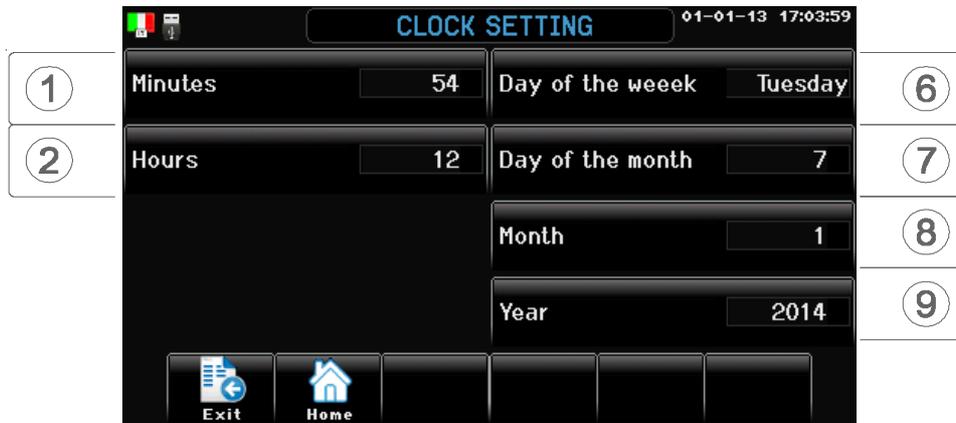
## D.2.7 Plate 2 calibration (if present)

Path: Home>① Installation>② Weighing data>⑦ Plate 2 calibration

**Same procedure as per Plate 1.**

## D.3 Clock

Path: Home>④ Installation>③ Clock



- |                    |                                   |
|--------------------|-----------------------------------|
| ① Minutes          | Minutes setting.                  |
| ② Hours            | Hour setting.                     |
| ③ Day of the week  | Day of the current week setting.  |
| ④ Day of the month | Day of the current month setting. |
| ⑤ Month            | Month setting.                    |
| ⑥ Year             | Year setting.                     |

## D.4 Language

Path: Home>④ Installation>④ Language



Select language

You can change the displayed language.

## D.6 Password

Path: Home> **D** Installation> **6** Password

Setting password of access to the program.

2 different password levels can be set according to the user mode (end-user, supervisor, etc).

**1** *Settings password*

(Range: **0000**...9999)

Setting password setting (4 digits).

**2** *Installation password*

(Range: **0000**...9999)

Installation password setting (4 digits).



(example of **Settings** password) enter the password required and press **F** to confirm.

The password is no longer required as long as moving inside the programming group.

Passwords at start-up is set by default as **0000** (password not used).

## D.7 Display

Path: Home>④ Installation>⑦ Display



- |   |   |   |
|---|---|---|
| ① | <b>Title bar</b><br>(Range: <b>Invisible</b> ...Short...Long)                                       | <i>Title bar</i>  |
| ② | <b>Display brightness</b><br>(Range: 0%...100%)   | <i>Display brightness</i>   |
| ③ | <b>Minimum brightness after waiting</b><br>(Range: 0%...20%...50%)                                  | Display brightness after <i>Waiting time</i> for <i>minimum brightness</i> (time is calculated from the last time one key was hit).                       |
| ④ | <b>Waiting time</b><br>(Range: 0 <sup>m</sup> .00 <sup>s</sup> ...1 <sup>m</sup> .00 <sup>s</sup> ) | After this time (from the last time one key was hit) the display fades brightness down to the % preset value in <i>Minimum brightness after waiting</i> . |

## D.8 Manual

Path: Home>④ Installation>⑧ Manual

Manual Testing procedure of alarm relay output.

### D.8.1 Relay outputs

Path: Home>④ Installation>⑧ Manual>① Relay outputs

- |   |                        |   |
|---|------------------------|---|
| ① | <b>---Xscale alarm</b> | Alarm relays on board of <b>Xscale</b> are set into hand mode<br>When quitting the procedure, the relay automatically goes back to OFF. |
|---|------------------------|---|

## D.9 Network connection

Path: Home> **D** Installation> **9** Network connection

### D.9.1 485 node number

Path: Home> **D** Installation> **9** Network connection> **1** 485 node number

Nodal number of this processor in the PC 485 network.

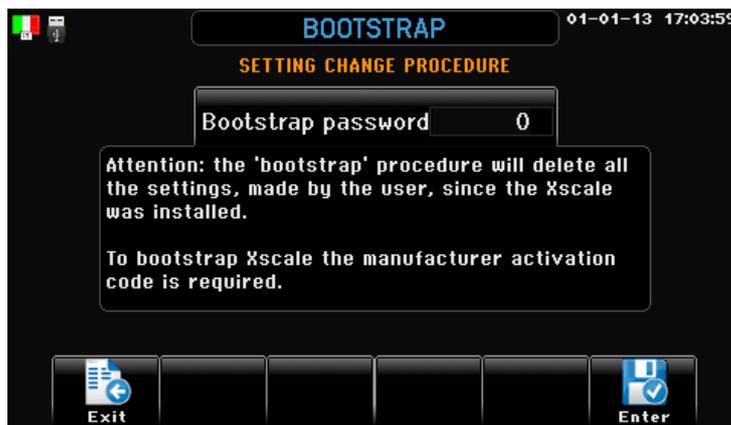
**Warning: do not use same number of two different processors!**

## D.E Bootstrap

Path: Home> **D** Installation> **E** Bootstrap

Procedure of Bootstrap.

The 'bootstrap' procedure resets all the setting in the **Xscale** back to those as originally set at the factory.



Enter bootstrap procedure Bootstrap password setting (4 digit).



**ATTENTION: the 'bootstrap' procedure will delete all the settings, made by the user, since the Xscale was installed. To bootstrap Xfarm the manufacturer activation code is required.**

## D.F USB management

Path: Home> **D** Installation> **F** USB management



- 6** Write archives on USB pen Archives can be read on PC by using the **Xscale Dialogue** support software.
- 7** Write SETS on USB pen All **Xscale** SETS (settings) are recorded (**make sure to do it after the system testing at start up so you have a complete configuration back-up**). You can then transfer all setting to another **Xscale** unit (or in case of unit replacement the original settings can be reloaded).
- 8** Upload SETS from USB pen If SETS were previously recorded (see previous point) the back SETS can be selectively uploaded as following:
- 6** The SETTING SET
  - 7** The INSTALLATION SET (except the ones at point **8**).
  - 8** The RECORDINGS of the load cells calibrations .

## Data transfer

Communication with external world is by USB pen drive.

The main programming parameters, the archive downloads and software updates can be made by PC connection via the USB pen drive.



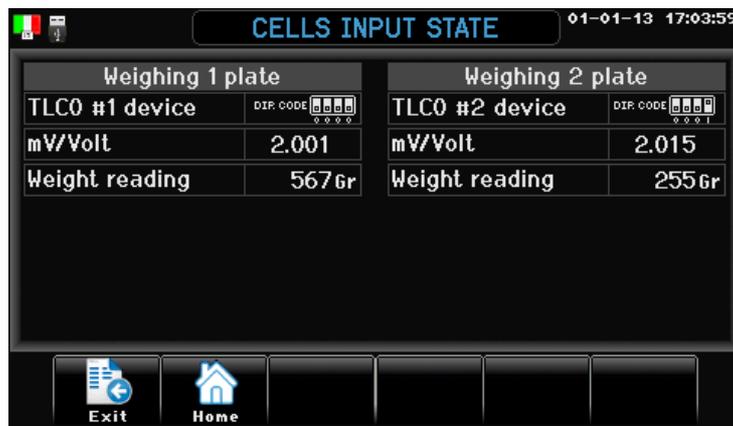
## F. Check control

Path: Home> **F** Check control> **1** Cells input state

### F.1 Cells input state

Path: Home> **F** Check Control> **1** Cells input state

This screen sums up the configuration of the load cells. This is very useful at system start-up to check if **TLCO** extensions and **Xscale** were properly connected.



Weighing 1 plate		Weighing 2 plate	
TLCO #1 device	DIP CODE 0000	TLCO #2 device	DIP CODE 0000
mV/Volt	2.001	mV/Volt	2.015
Weight reading	567Gr	Weight reading	255Gr

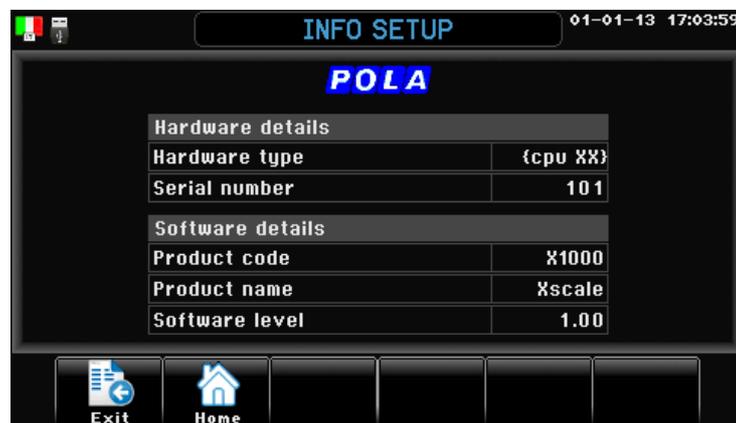
01-01-13 17:03:59

Exit Home

### F.F Info

Path: Home> **F** Check Control> **F** Info

This screens identifies the plant's characteristics to control



Hardware details	
Hardware type	{cpu XX}
Serial number	101
Software details	
Product code	X1000
Product name	Xscale
Software level	1.00

01-01-13 17:03:59

POLA

Exit Home

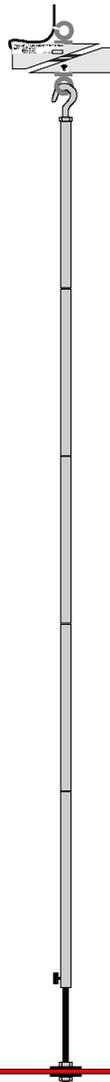
# Y. Connection



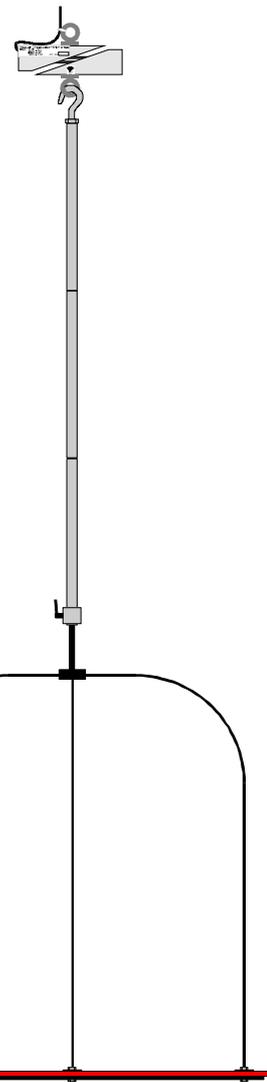
**TLC0 n.1**  
Weighing plate 1  
load-cells  
amplifier



**TLC0 n.2**  
Weighing plate 2  
load-cells  
amplifier



**PWS1**  
plate for chicks



**PWS2**  
plate for turkeys



**PWS0**  
plate for poultry-parents

## Y.1 Installation



-  The installation and the connection of the **Xscale** must be realized in strict compliance to the local laws and regulations in use in the country of installation and by well trained personnel only. Read carefully the installation manual before performing the use and installation of the **Xscale**.
-  Install the **Xscale** in a dry place, clean and easily accessible: the **TLC0** connection extensions must be installed inside the electric board which controls the system. Check wirings before giving power to the system.  
**Xscale** is delivered in a IP65 water and dust protected box. When water cleaning, don't splash the box with water and keep the electronic module always clean. Always use cable glands to connect the module (lower part of the box) so IP65 standard is guaranteed. When system is not working, keep **Xscale** always on to avoid internal condensation problems.
-  Keep voltage off before making any operation on the system. Always install a system main switch.



Put the **Xscale** on a wall lower level than the operator eyes. This is the best location.

**Always keep Xfarm in its waterproof box.**

Keep it in a dry and safe place.

**Xscale** can be also installed in a separate room, far from the switchboard.

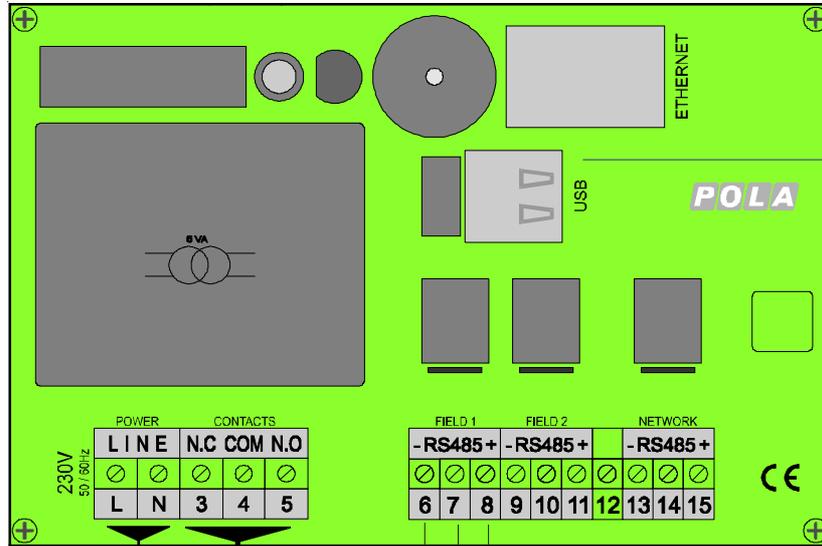
**When system is not working, keep Xfarm always on to avoid internal condensation problems.**

## Y.2 Xscale connection



### Xscale Unit

Set up the regulator in a dry and clean environment.  
Connect the different electric cables as shown in the diagram.



USB plug \*



Protect line supply with adequate fuse

230v Line  
6VA  
Alarm contact

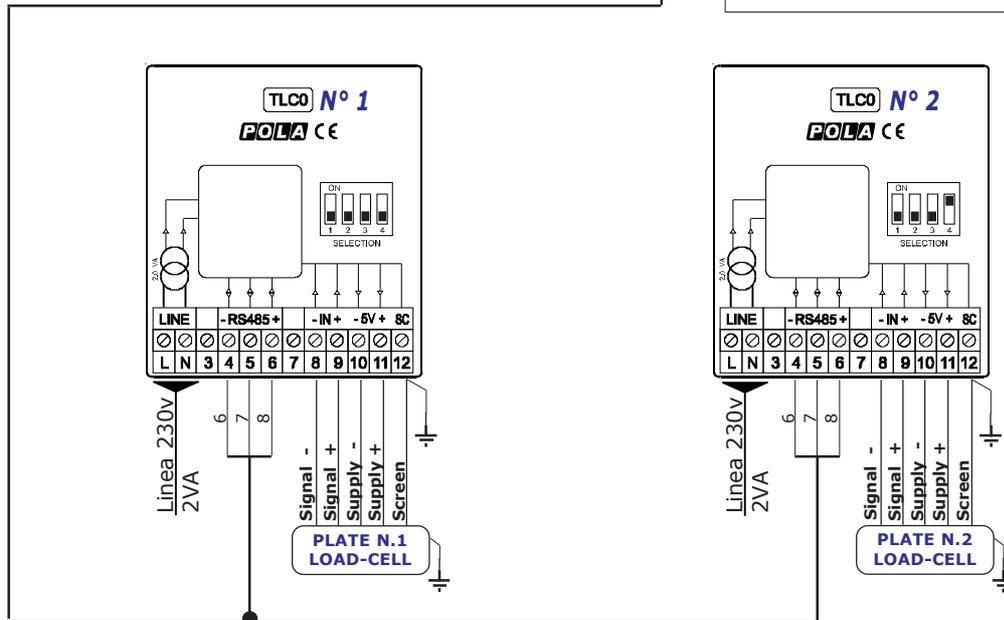
To 4-5-6  
TLCO



For the connection among the module **Xscale** and the extensions use **3-wires** cables (0,5-1,5mm<sup>2</sup> section).

If you use a cable with more than 3-wires, you must not let any free wire; if any, connect it to your central clamp (7).

**IMPORTANT: don't use a multiple cable through which pass the signal and the line 230V or other signals.**



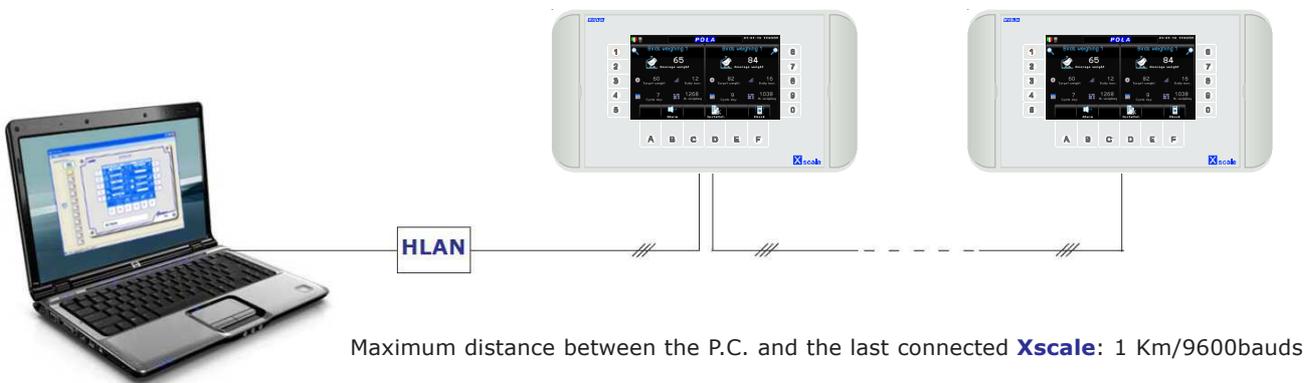
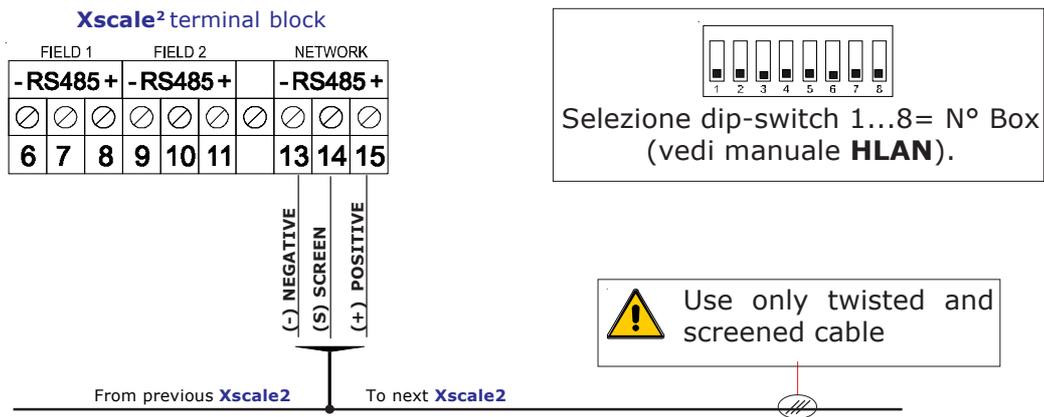
The correct connection among the module **Xscale** and the **TLCO** extensions it is confirmed by the lighting of the green led located on **TLCO**.

When the led is flashing it means the extension is not properly wired: check the connections and that the setting of the dip-switch on board of the **TLCO** is made according to the diagram (*Home>F>1*).

\* **Xscale** comes with a **USB** plug which is located inside its box.  
 As option we can also deliver (**USBP**) a professional IP65 waterproof USB plug to be installed on the box itself so USB port can be reached without opening the box.

### Y.3 Network connection

Connection of more **Xscale** (max 128) to the network module **HLAN**, which is connected to the Personal Computer.



#### Network potentiality



Line speed	9600 BAUD
Level	EIA RS-485 modified (low slew rate)
Nodes	128
Lenght	1Km/9600 baud
Optoinsulation <b>HLAN</b> and <b>HBOX/W</b>	5.000 VRMS
Supply	230v ac 50-60Hz
Operational temperature range	-10...+70°C
Dimensions <b>HLAN</b>	67x78x52mm

## Z. Technical specifics

<b>Xscale</b>	
<b>Power supply</b>	
Line voltage	230Vac
Frequency	50/60Hz
Power consumption	6VA
<b>Case</b>	
Case material	ABS
Dimensions	200x110x70mm
Weight	Kg 0,9
Protection degree	IP65
<b>Communication</b>	
USB 2.0 FULL SPEED	1
RS485 isolato	2
<b>Temperature range</b>	
Operationa	-10...+40°C
Storage	-40...+80°C
Relative humidity	<95%, uncondensed



**POLA**<sup>®</sup> declares that your **Xscale** model complies with the following European rules:

**EN 50081-1 (1992) (Emission)**  
**EN 50082-2 (1995) (Immunity)**

in base a quanto previsto dalla direttiva **CEE 89/336** successiva **92/31** e del decreto legislativo N. **476/92** sulla compatibilità elettromagnetica (**EMC**).

referred to directive **EE 89/336** and subsequent **92/31** about electro-magnetic compatibility (**EMC**)

and it complies with directive **EEC 73/23** and subsequent **EEC 93/68** about low voltage safety (**LVD**).

