

### Operative Display for REVO - CD3000E Series

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## Avvertenze Importanti per la sicurezza



The unit are integral part of industrial equipments.

When it is supply, the unit is subject to dangerous tensions. Don't remove the plastic cover. Don't use this unit in aerospace and nuclear application.

### **Electric Shock Hazard (Rischi di scosse elettriche, Risque de choqué électrique)**

When thyristor unit has been connected to main supply voltage and is switched off, before to touch it be secure that the unit is isolated and wait at least one minute to allow discharging internal capacitors.

Thus be secure that:

- access to thyristor unit is only permitted to specialised personnel;
- the authorised personnel must read this manual before to have access to the unit;
- the access to the unit must be denied to unauthorised personnel.

### **Important warnings (Avvertenze importanti, attention)**

During the operations with units under tension, local regulations regarding electrical installation should be rigidly observed:

- Respect the internal safety rules.
- Don't bend components to maintain insulation distances.
- Protect the units from high temperature humidity and vibrations.
- Don't touch components to prevent electrostatic discharges on them.
- Verify that the size is in line with real needs.
- To measure voltage current etc. on unit, remove rings and other jewels from fingers and hands.
- Authorized personnel that work on thyristor unit under power supply voltage must be on insulated board

This listing does not represent a complete enumeration of all necessary safety cautions

### **Protection (Protezione, Protection)**

The unit have IP20 protection rating as defined by the specific international. Is necessary consider the place of installation.

### **Earth (Messa a terra, Terre)**

For safety, the Thyristor unit with isolated heat-sink must be connected to earth.

Earth impedance should be correspondent to local earth regulation. Periodically the earth efficiency should be inspected.

### **Electromagnetic compatibility (Compatibilità elettromagnetica, Compatibilité électromag.)**

Our thyristor units have an excellent immunity to electromagnetic interferences if all suggestions contained in this manual are respected. In respect to a good Engineering practice, all inductive loads like solenoids contactor coils should have a filter in parallel

### **Emissions (Emissioni, Emission)**

All solid-state power controllers emit a certain amount of radio-frequency energy because of the fast switching of the power devices. The Thyristor unit are in accord with the EMC norms, CE mark.

In most installations, near by electronic systems will experience no difficulty with interference. If very sensitive electronic measuring equipment or low-frequency radio receivers are to be used near the unit, some special precautions may be required. These may include the installation of a line supply filter and the use of screened (shielded) output cable to the load.



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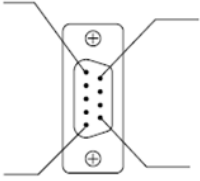
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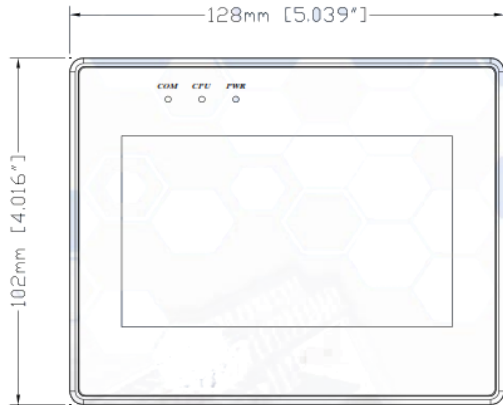
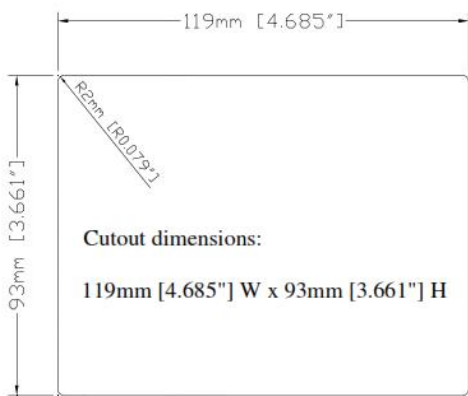
# 1 Wiring and dimensions

## 1.1 REVO-KP 4.3''

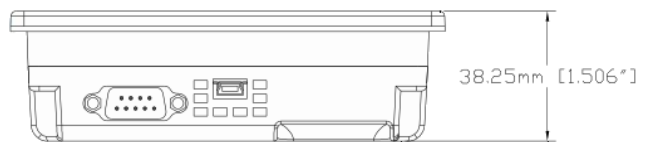
Pin Serial Port

CN1 ( D-sub 9pin, female)	Pin	Signal Name	Description
	1	Tx/Rx -	Data - (Blue)
	2	Tx/Rx +	Data + (Brown)

### 1.1.1 Fixing holes



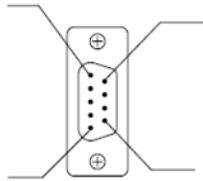
**Front View**



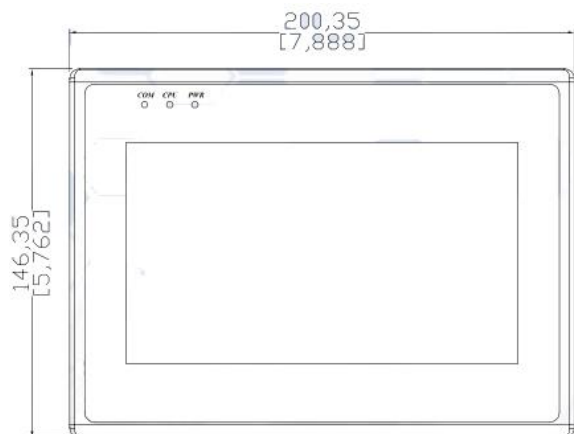
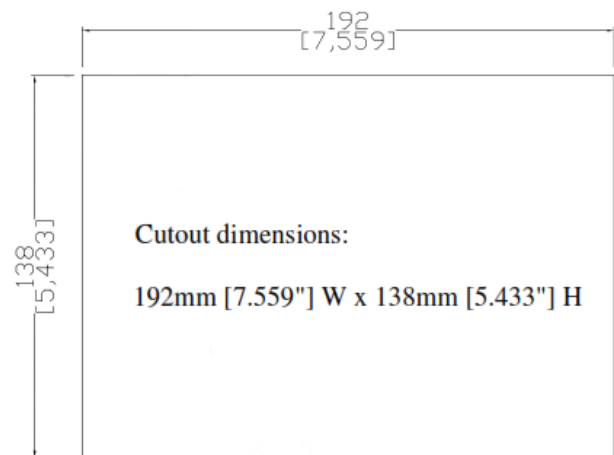
**Bottom View**

## 1.2 REVO-KP 7.0''

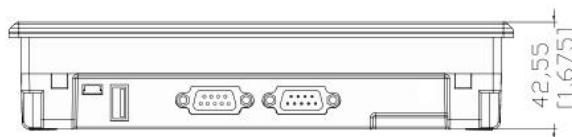
### Pin Serial Port

CN1 ( D-sub 9pin, male)	Pin	Signal Name	Description	
	1	Tx/Rx -	Data - (Blue)	
	2	Tx/Rx +	Data + (Brown)	

### 1.2.1 Fixing holes



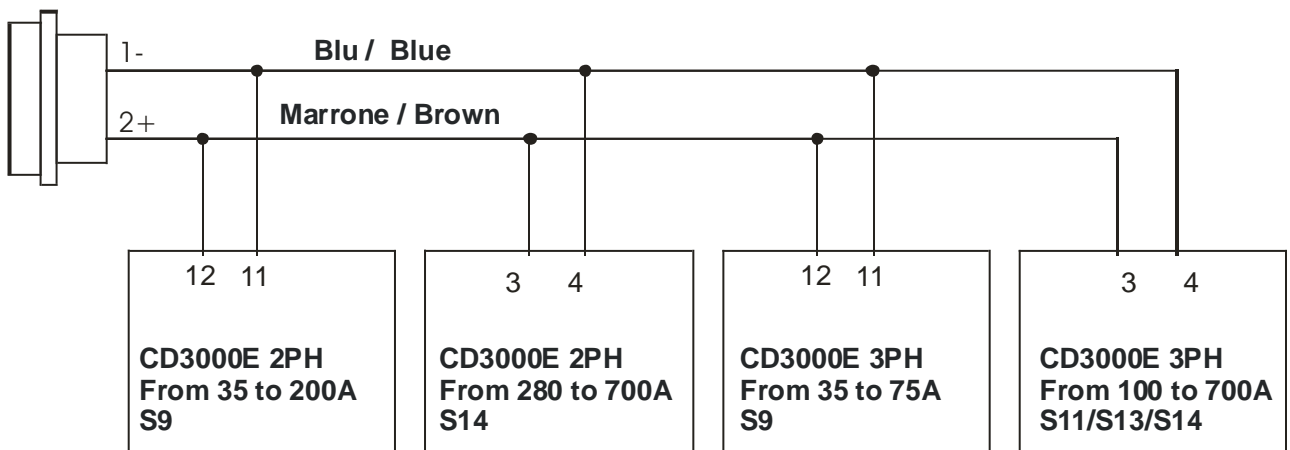
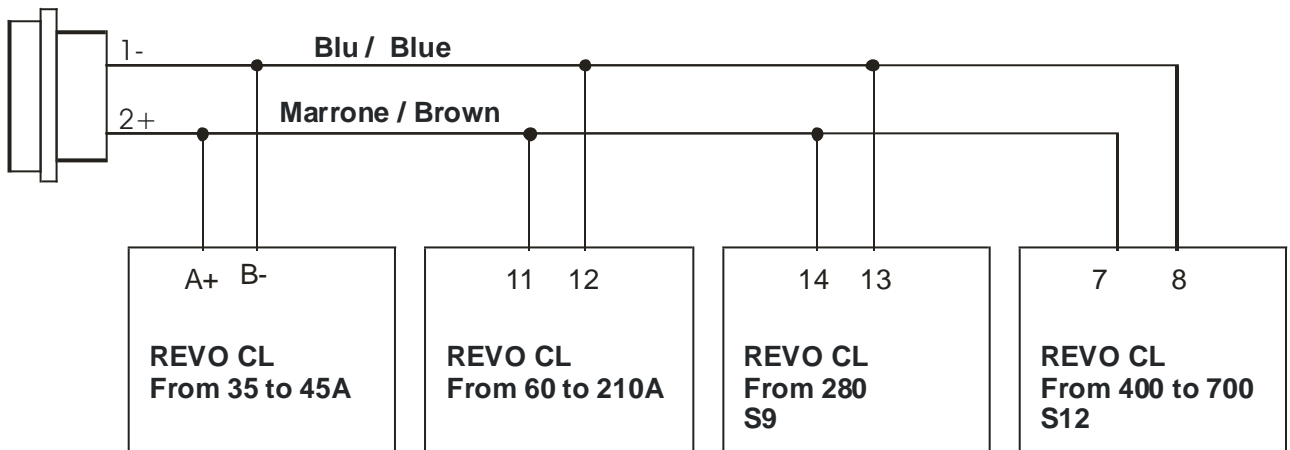
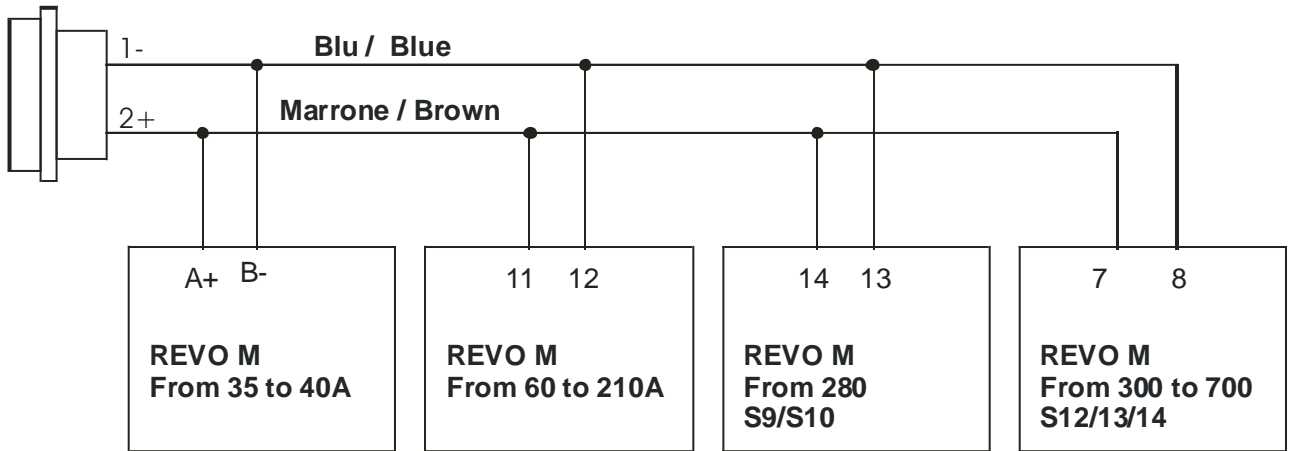
**Front View**



**Bottom View**

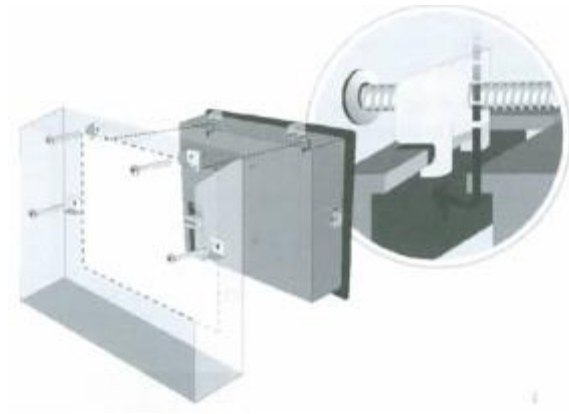
# 1.3 Wiring

D-sub 9pin



## 2 Installation

Before installation, make sure that the product has not been damaged during transport. In case of damage, notify the carrier immediately. Verify that the product is indeed the one ordered.



For mounting use the supplied brackets.



To connect the 24Vdc power supply using the supplied clamp



### 3 Operation

Il pannello è configurato per poter comunicare con i relè statici CD Automation serie REVO nei modelli REVO-M e REVO-CL e CD3000E.

The panel is configured to communicate with the static relays CD Automation series REVO in REVO-M ,REVO-CL and CD3000E.

#### 3.1 Functional Description

##### 3.1.1 Numeric fields

123

The BLUE values are read-only

123

The BLACK values, if enabled, are read/write

Ex: in "REMOTE" The reference parameter is read-only if it is set to "ANALOG" read / write access if set to "REMOTE"

##### 3.1.2 Virtual Keyboard

Numeric



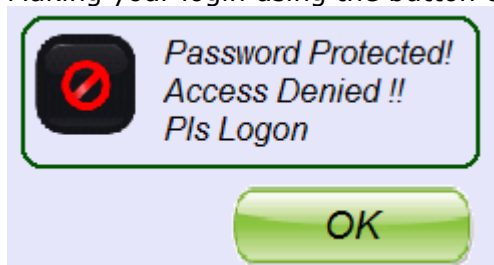
Alphanumeric



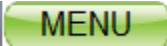
- BS = Back Sapce
- Clr = Delete all
- ESC = close the window without doing anything
- `~ = minus sign
- ENTER = Confirm and submit data
- MAX = Maximum possible value
- MIN = Minimum possible value

##### 3.1.3 Message

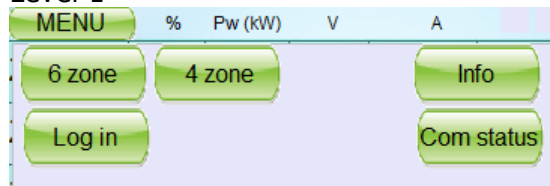
Making your login using the button on the menu



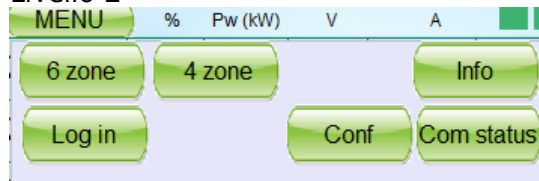
## 3.2 Menu

By pressing key  will appear on the navigation menu

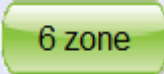
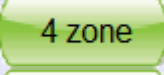
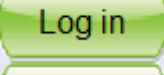
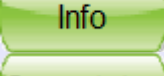
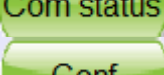
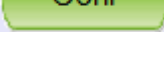
Level 1



Livello 2



### Function keys

	Showing 6 lines
	Showing 4 lines
	Calls page to log on to a different level
	Calls page of the version information
	Calls page of the state of the serial communication
	<b>REVO-KP2</b> configuration

### 3.3 Home page

The home page can be 4 or 6 lines

Each line can be configured depending on the configuration page of the connected device (REVO or CD3000E) or available service (diagnostic screens communication, or reading analog inputs)

Some sample

Set 4 zone

MENU	%	Pw (kW)	V	A	Status	Trend
ZONA1	72	60	253	24.0		
ZONA2	50	OFF	231	20.0		
ZONA3	54	46	0	20.0		
TEMP1	TEMP2	TEMP3	TEMP4			
12.4 °C	11.6 °C	12.0 °C	0.0 °C			

Set 6 zone

MENU	%	Pw (kW)	V	A	Status	Trend
ZONA1	51	46	232	20.0		
ZONA2	53	OFF	233	20.0		
ZONA3	70	60	233	24.0		
ZONA4	52	46	233	20.0		
ZONA5	73	60	254	24.0		
TEMP1	TEMP2	TEMP3	TEMP4			
12.4 °C	11.6 °C	12.0 °C	0.0 °C			

#### 3.3.1 Function description

The pages are divided into columns

The first column is the zone name

% = Value of the percentage of control, which can be in analog input or panel

Pw = Power to load

V = Voltage to load

A = Average Current Load, if CD3000E the 3 currents will be divided in the graph to the right with full scale = calibration current up 10%

#### REVO-M an REVO CL

D1 = State Digital Input 1

D2 = State Digital Input 2

SC = If in On mode, scr short circuit

HB = If in On mode, heater break alarm active

OFF = If in Off mode, scr NOT enabled to work background Pw Red

CL = Current limit alarm

#### CD3000E

ALL = Generic alarm active

PH = Phase loss

SC = If in On mode, scr short circuit

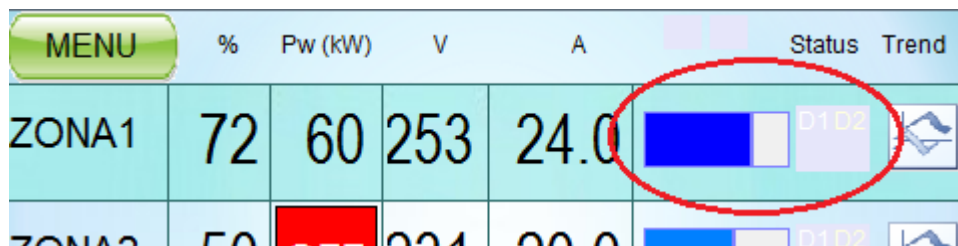
HB = If in On mode, heater break alarm active

OFF = If in Off mode, scr NOT enabled to work background Pw Red

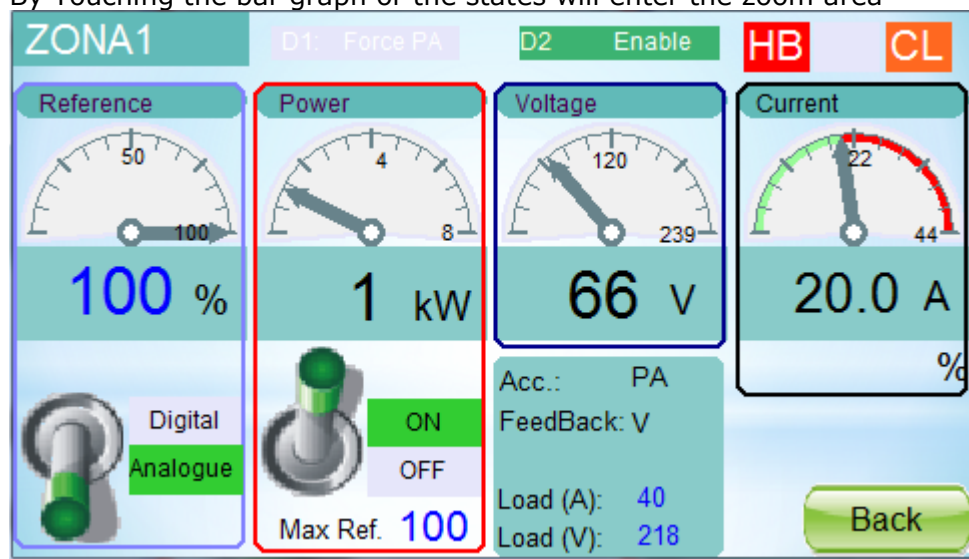
CL = Current limit alarm

### 3.3.2 ACTION on the main page

#### 3.3.2.1 ZOOM Zone REVO-M or REVO-CL



By Touching the bar graph or the states will enter the zoom area



Here is possible to  
Set input type (Level1)

- Digital : Controlled by **REVO-KP2**
- Analog : Controlled by analog Input

Set % Value when in Digital

Enable and disable REVO

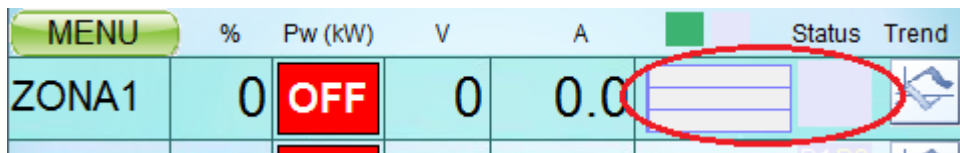
- ON : Enabled
- OFF : Disabled

The value

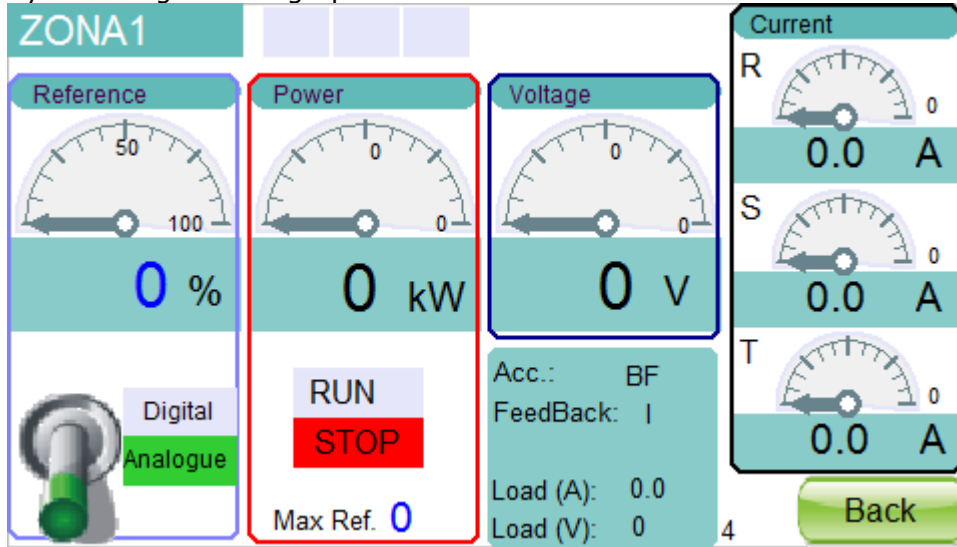
- Reference : Percentage request
  - Power : Average power
  - Voltage : Load Voltage
  - Current : Average current on load
  - Curr.limit : Current limit in % (appears only if abled)
- NOTE: The value is referred to the inner TA size

NOTE: The scale values are read directly from the unit and calculated with an abundance of 10%

**3.3.2.2 ZOOM Zone CD3000E**



By Touching the bar graph or the states will enter the zoom area



Here is possible to  
Set input type (Level1)

- Digital : Controlled by **REVO-KP2**
- Analog : Controlled by analog Input

Set % Value when in Digital

Enable and disable CD3000E

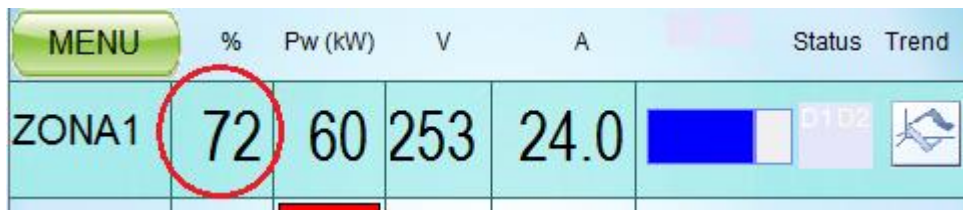
- RUN : Enabled
- STOP : Disabled

The value

- Reference : Percentage request
  - Power : Average power
  - Voltage : Load Voltage
  - Current R : Current on phase R
  - Current S : Current on phase S
  - Current T : Current on phase T
  - Lim. Cor. : Current limit in % (appears only if abled)
- NOTE: The value is referred to the inner TA size

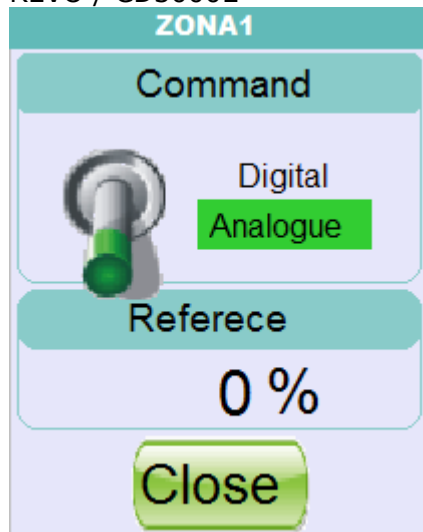
NOTE: The scale values are read directly from the unit and calculated with an abundance of 10%

### 3.3.2.3 Reference Set



By Touching the value % will appears the following windows

REVO / CD3000E



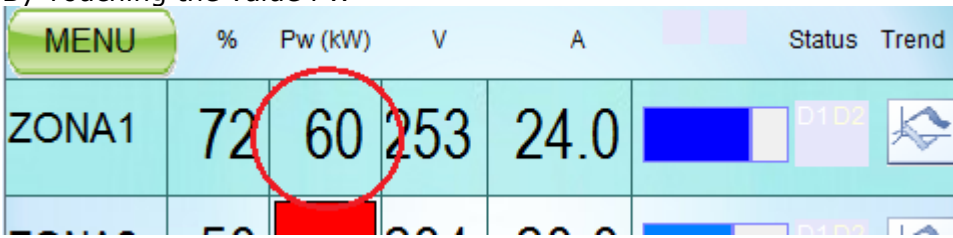
Here is possible to  
Set input type (Level1)

- Digital : Controlled by **REVO-KP2**
- Analog : Controlled by analog Input

Set the value % when in Digital mode

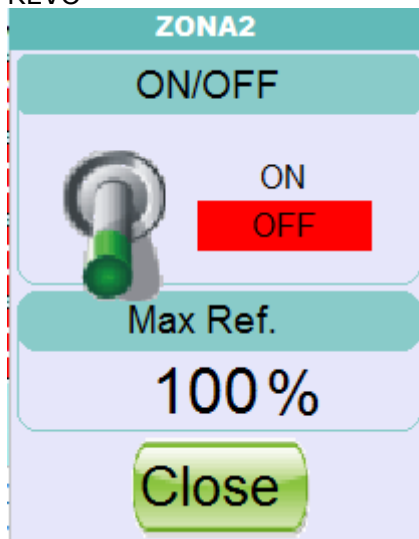
### 3.3.2.4 Enabling and disabling a zone

By Touching the value PW



Will be shown a windows with:

REVO

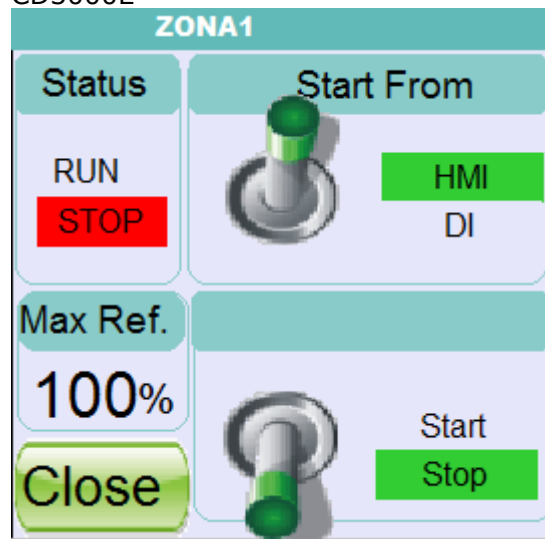


Enable and disable REVO

- ON : Enabled
- OFF : Disabled

Set Max % value

CD3000E



View the status

- RUN : Enabled
- STOP : Disabled



- Select if the command is from digital inputs or REVO-KPHMI : command from REVO-KP
- STOP : command from digital input

If controlled from REVO-KP

- Start : Enabled
- Staop : Disabled

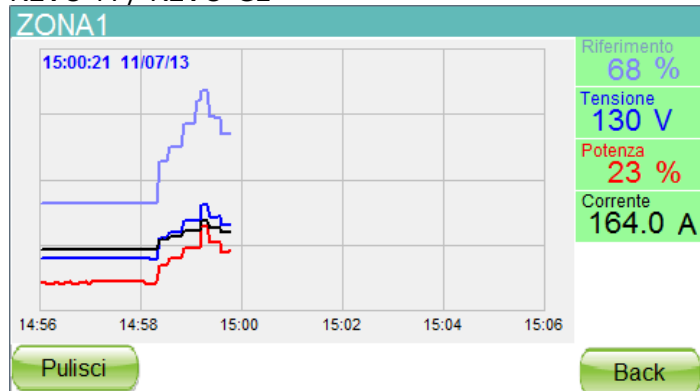
### 3.3.2.5 Trend

Toccano il Trend

MENU	%	Pw (kW)	V	A	Status	Trend
ZONA1	51	46	232	20.0	D1D2	
ZONA2	53	OFF	233	20.0	D1D2	

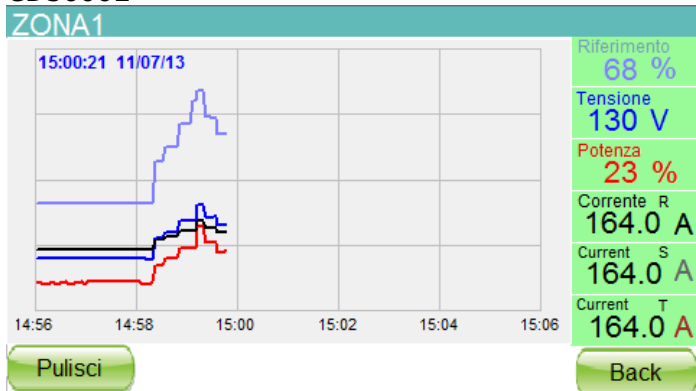
Will be shown a windows with:

REVO-M / REVO-CL



Reference : 0-100%  
 Voltage : 0-operative voltage + 10%  
 Power : 0-100%  
 Average current : 0-load current + 10%

CD3000E




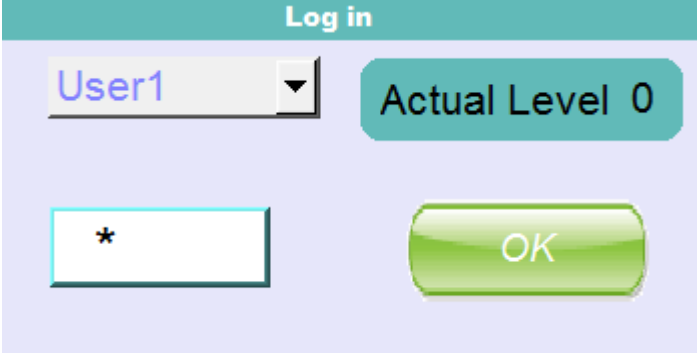
Reference : 0-100%  
 Voltage : 0- operative voltage + 10%  
 Power : 0-100%  
 Current R : 0- load current + 10%  
 Current S : 0- load current + 10%  
 Current T : 0- load current + 10%

The trend has a window of 10min, the datas out of the window can not longer be viewed



## 3.4 Log in

To access this page press 



Select the user and insert the password  
If the password is right the level will change to the selected ones otherwise it will go to 0 value.

Access levels

### 3.4.1 Level 0 ( generic user )

Is possible to (No password)

- Navigate on allowed pages
- Set the % reference
- Set zone On / Off
- See the trend

### 3.4.2 Level 1 ( advanced user )

Is possible to (Standard Password 1111)

- As level 0
- Switch the input type


### 3.4.3 Level 2 ( installer user )

Is possible to (Standard Password 2222)

- As level 1
- Set the **REVO-KP2**

### 3.5 Level Configuration / Reset

#### 3.5.1 Configuration of zones

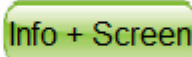
By pressing  Will be shown this page

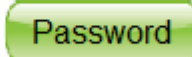
Tag	Type	
ZONA1	CD3000E	41
ZONA2	OFF	0
ZONA3	OFF	0
ZONA4	OFF	0
ZONA5	OFF	3
ZONA6	COM Stat	3


Start with

Language

DEMO







With 6 Zone

MENU	%	Pw (kW)	V	A	Status	Trend
ZONA1	51	46	232	20.0		
ZONA2	53	<b>OFF</b>	233	20.0		
ZONA3	70	60	233	24.0		
ZONA4	52	46	233	20.0		
ZONA5	73	60	254	24.0		
TEMP1	TEMP2		TEMP3		TEMP4	
12.4 °C	11.6 °C		12.0 °C		0.0 °C	

Tag	Tipo	
ZONA1	REVO	31
ZONA2	REVO	32
ZONA3	REVO	33
ZONA4	REVO	34
ZONA5	REVO	35
ZONA6	MISURE	35

With 4 Zone

MENU	%	Pw (kW)	V	A	Status	Trend
ZONA1	72	60	253	24.0		
ZONA2	50	<b>OFF</b>	231	20.0		
ZONA3	54	46	0	20.0		
TEMP1	TEMP2		TEMP3		TEMP4	
12.4 °C	11.6 °C		12.0 °C		0.0 °C	

Tag	Tipo	
ZONA1	REVO	31
ZONA2	REVO	32
ZONA3	REVO	33
ZONA4	MISURE	24
ZONA5	OFF	3
ZONA6	OFF	3

### 3.5.1.1 Zone Name

By pressing the Name is possible to customize the text of 6 characters with an alphanumeric keypad

Tag	Tipo	
ZONA1	REVO	31

### 3.5.1.2 Type

By pressing Type is possible to select the instrument type

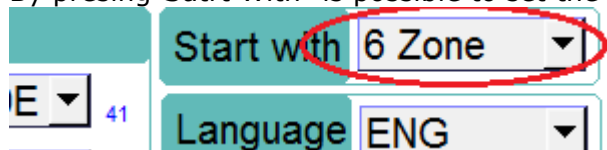
Tag	Tipo	
ZONA1	REVO	31
ZONA2	REVO	32
ZONA3	CD3000E	33
ZONA4	MISURE	24
ZONA5	OFF	3
ZONA6	OFF	3

For the 6th and 3d zone is possible to set them as measures from board analog inputs or the state of the serial

Tag	Tipo	
ZONA1	REVO	31
ZONA2	REVO	32
ZONA3	CD3000E	33
ZONA4	MISURE	24
ZONA5	COM Status	3
ZONA6	OFF	3

### 3.5.1.3 Starting Page

By pressing "Start With" is possible to set the starting page



Set on 4 zone

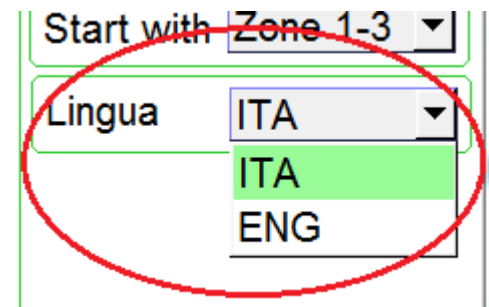
MENU	%	Pw (kW)	V	A	Status	Trend
ZONA1	72	60	253	24.0		
ZONA2	50	<b>OFF</b>	231	20.0		
ZONA3	54	46	0	20.0		
TEMP1	TEMP2		TEMP3		TEMP4	
12.4 °C	11.6 °C		12.0 °C		0.0 °C	

Set on 6 zone

MENU	%	Pw (kW)	V	A	Status	Trend
ZONA1	51	46	232	20.0		
ZONA2	53	<b>OFF</b>	233	20.0		
ZONA3	70	60	233	24.0		
ZONA4	52	46	233	20.0		
ZONA5	73	60	254	24.0		
TEMP1	TEMP2		TEMP3		TEMP4	
12.4 °C	11.6 °C		12.0 °C		0.0 °C	

### 3.5.1.4 Language

By pressing "Language" is possible to select Language



## 4 Features

- Costruzione : Housing plastic molding
- Display : 4.3", 7" TFT LCD 65.536 color
- CPU and Core Logic : 32Bit processor RISC - 400 MHz
- DRAM : 64 MB DDR2 on board
- Internal memory : 128 MB memory flash on board,  
Recipe memory stored in memory flash, RW 64Kword,RW\_A 64Kword.  
(Dimension of the user project: 16MB, Data and Event log size: 48 MB)
- Supply: 24 ± 20% V, 250 mA a 24 V cc

### 4.1 Environment feature

- Operating Temperature: 0 ° ~ 50 ° C (32 ° ~ 122 ° F)
- Storage Temperature: -20 ° ~ 60 ° C (-4 ° to 140 ° F)
- Relative humidity: 10% ~ 90% @ 40 ° C, no condensation
- Shock (on working): da 10 a 25Hz (X, Y, Z 2G 30 minutes)
- CE / FCC: : Complies with EN 55022:2006, Class A  
EN 61000-3-2:2006  
EN 61000-3-3:1995 + A1: 2001 + A2: 2005  
EN 55024:1998 + A1: 2001 + A2: 2003
- Front panel meets NEMA 4 / IP65

## 5 Order Code

<b>CODE</b>	<b>R</b>	<b>K</b>	<b>P</b>	<b>2</b>	-	-	-	-	-	-	-	-	-
<b>SCREEN DIMENSION</b>													
4.3"					-	0	4	-					
7.0"					-	0	7	-					
10.0"					-	1	0	-					
<b>COMMUNICATION</b>													
Modbus RTU and CE									-	M	-	CE	
Ethernet + MODBUS RTU and CE + UL										ETH	-	UL	
<b>VERSION</b>													
6 Mixed zone max													- 006

## 6 Warranty condition

Producer gives a 12 months warranty to its products.  
 The warranty is limited to repairing and parts substitution in our factory and does exclude products not properly used and fuses.  
 Warranty does not include products with serial numbers deleted. The faulty product should be shipped to Producer at customer's cost and our Service will evaluate if product is under warranty terms.  
 Substituted parts remain of Producer property.

