Operative Display for REVO - CD3000E Series
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 choque 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.
1 WIRING AND DIMENSIONS

1.1 REVO-KP 4.3”
   1.1.1 Fixing holes

1.2 REVO-KP 7.0”
   1.2.1 Fixing holes

1.3 WIRING

2 INSTALLATION

3 OPERATION

3.1 Functional Description
   3.1.1 Numeric fields
   3.1.2 Virtual keyboard
   3.1.3 Message

3.2 Menu

3.3 Home page
   3.3.1 Function description
   3.3.2 Action on the main page

3.4 Log in
   3.4.1 Level 0 (generic user)
   3.4.2 Level 1 (advanced user)
   3.4.3 Level 2 (installer user)

3.5 Level Configuration / Reset
   3.5.1 Configuration of zones

4 Features

4.1 Environment feature

5 Order code

6 Warranty condition
1 Wiring and dimensions

1.1 REVO-KP 4.3”

Pin Serial Port

<table>
<thead>
<tr>
<th>CN1 (D-sub 9pin, female)</th>
<th>Pin</th>
<th>Signal Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tx/Rx -</td>
<td>Data -</td>
<td>(Blue)</td>
</tr>
<tr>
<td>2</td>
<td>Tx/Rx +</td>
<td>Data +</td>
<td>(Brown)</td>
</tr>
</tbody>
</table>

1.1.1 Fixing holes

Front View

Bottom View
1.2 REVO-KP 7.0”

Pin Serial Port

<table>
<thead>
<tr>
<th>CN1 (D-sub 9pin, male)</th>
<th>Pin</th>
<th>Signal Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>Tx/Rx -</td>
<td>Data -</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Tx/Rx +</td>
<td>Data +</td>
</tr>
</tbody>
</table>

1.2.1 Fixing holes

Cutout dimensions:
192mm [7.559”] W x 138mm [5.433”] H

Bottom View

Front View
1.3 Wiring

D-sub 9pin

1- Blu / Blue
2+ Marrone / Brown

A+ B-
REVO M
From 35 to 40A
Marrone / Brown
Blu / Blue
REVO M
From 60 to 210A
REVO M
From 280
S9/S10
REVO M
From 300 to 700
S12/13/14

1- Blu / Blue
2+ Marrone / Brown

A+ B-
REVO CL
From 35 to 45A
Marrone / Brown
Blu / Blue
REVO CL
From 60 to 210A
REVO CL
From 280
S9
REVO CL
From 400 to 700
S12

1- Blu / Blue
2+ Marrone / Brown

12 11
CD3000E 2PH
From 35 to 200A
S9
3 4
CD3000E 2PH
From 280 to 700A
S14
12 11
CD3000E 3PH
From 35 to 75A
S9
3 4
CD3000E 3PH
From 100 to 700A
S11/S13/S14
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

<table>
<thead>
<tr>
<th>Numeric</th>
<th>Alphanumeric</th>
</tr>
</thead>
<tbody>
<tr>
<td>BS</td>
<td>Back Sapce</td>
</tr>
<tr>
<td>Clr</td>
<td>Delete all</td>
</tr>
<tr>
<td>Esc</td>
<td>close the window without doing anything</td>
</tr>
<tr>
<td>-</td>
<td>minus sign</td>
</tr>
<tr>
<td>ENTER</td>
<td>Confirm and submit data</td>
</tr>
<tr>
<td>MAX</td>
<td>Maximum possible value</td>
</tr>
<tr>
<td>MIN</td>
<td>Minimum possible value</td>
</tr>
</tbody>
</table>

3.1.3 Message

Making your login using the button on the menu

Password Protected!
Access Denied !!
Pls Logon

OK
3.2 Menu

By pressing key [MENU] will appear on the navigation menu.

Level 1

<table>
<thead>
<tr>
<th>MENU</th>
<th>%</th>
<th>Pw (kW)</th>
<th>V</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 zone</td>
<td>4 zone</td>
<td>Info</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Log in</td>
<td>Com status</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Livello 2

<table>
<thead>
<tr>
<th>MENU</th>
<th>%</th>
<th>Pw (kW)</th>
<th>V</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 zone</td>
<td>4 zone</td>
<td>Info</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Log in</td>
<td>Conf</td>
<td>Com status</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Function keys

- 6 zone: Showing 6 lines
- 4 zone: Showing 4 lines
- Log in: Calls page to log on to a different level
- Info: Calls page of the version information
- Com status: Calls page of the state of the serial communication
- Conf: **REVO-KP2** 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

#### 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

![Table showing ZONA1 status]

Will be shown a windows with:

**REVO**

- ON : Enabled
- OFF : Disabled

**CD3000E**

- RUN : Enabled
- STOP : Disabled

Set Max % value

- 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
- Stop : Disabled
3.3.2.5 Trend

Toccano il Trend

Will be shown a windows with:

<table>
<thead>
<tr>
<th>REVO-M / REVO-CL</th>
<th>CD3000E</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZONA1</td>
<td>ZONA1</td>
</tr>
<tr>
<td>15:00:21 11/07/13</td>
<td>15:00:21 11/07/13</td>
</tr>
<tr>
<td>Reference</td>
<td>Reference</td>
</tr>
<tr>
<td>Voltage</td>
<td>Voltage</td>
</tr>
<tr>
<td>Power</td>
<td>Power</td>
</tr>
<tr>
<td>Average current</td>
<td>Average current</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Tag</th>
<th>Type</th>
<th>Start with</th>
<th>Language</th>
<th>Demo</th>
<th>Info + Screen</th>
<th>Password</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZONA1</td>
<td>CD3000E</td>
<td>6 Zone</td>
<td>ENG</td>
<td>OFF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ZONA2</td>
<td>OFF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ZONA3</td>
<td>OFF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ZONA4</td>
<td>OFF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ZONA5</td>
<td>OFF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ZONA6</td>
<td>COM Stat</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

With 6 Zone

<table>
<thead>
<tr>
<th>Tag</th>
<th>Tipo</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZONA1</td>
<td>REVO</td>
</tr>
<tr>
<td>ZONA2</td>
<td>REVO</td>
</tr>
<tr>
<td>ZONA3</td>
<td>REVO</td>
</tr>
<tr>
<td>ZONA4</td>
<td>REVO</td>
</tr>
<tr>
<td>ZONA5</td>
<td>REVO</td>
</tr>
<tr>
<td>ZONA6</td>
<td>MISURE</td>
</tr>
</tbody>
</table>

With 4 Zone

<table>
<thead>
<tr>
<th>Tag</th>
<th>Tipo</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZONA1</td>
<td>REVO</td>
</tr>
<tr>
<td>ZONA2</td>
<td>REVO</td>
</tr>
<tr>
<td>ZONA3</td>
<td>REVO</td>
</tr>
<tr>
<td>ZONA4</td>
<td>MISURE</td>
</tr>
<tr>
<td>ZONA5</td>
<td>OFF</td>
</tr>
<tr>
<td>ZONA6</td>
<td>OFF</td>
</tr>
</tbody>
</table>
### 3.5.1.1 Zone Name

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

<table>
<thead>
<tr>
<th>Tag</th>
<th>Tipo</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZONA1</td>
<td>REVO</td>
</tr>
</tbody>
</table>

### 3.5.1.2 Type

By pressing Type is possible to select the instrument type.

<table>
<thead>
<tr>
<th>Tag</th>
<th>Tipo</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZONA1</td>
<td>REVO</td>
</tr>
<tr>
<td>ZONA2</td>
<td>CD3000E</td>
</tr>
<tr>
<td>ZONA3</td>
<td>OFF</td>
</tr>
<tr>
<td>ZONA4</td>
<td>MISURE</td>
</tr>
<tr>
<td>ZONA5</td>
<td>OFF</td>
</tr>
<tr>
<td>ZONA6</td>
<td>OFF</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Tag</th>
<th>Tipo</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZONA1</td>
<td>REVO</td>
</tr>
<tr>
<td>ZONA2</td>
<td>REVO</td>
</tr>
<tr>
<td>ZONA3</td>
<td>CD3000E</td>
</tr>
<tr>
<td>ZONA4</td>
<td>MISURE</td>
</tr>
<tr>
<td>ZONA5</td>
<td>COM Status</td>
</tr>
<tr>
<td>ZONA6</td>
<td>OFF</td>
</tr>
</tbody>
</table>
3.5.1.3 Starting Page

By pressing “Start With” is possible to set the starting page:

- **Set on 4 zone**
- **Set on 6 zone**

3.5.1.4 Language

By pressing “Language” is possible to select Language:

- **Lingua**
  - ITA
  - ENG
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
- Front panel meets NEMA 4 / IP65

5 Order Code

<table>
<thead>
<tr>
<th>CODE</th>
<th>R</th>
<th>K</th>
<th>P</th>
<th>2</th>
<th>_</th>
<th>_</th>
<th>_</th>
<th>_</th>
<th>_</th>
<th>_</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCREEN DIMENSION</td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>4.3”</td>
<td>-</td>
<td>0</td>
<td>4</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.0”</td>
<td>-</td>
<td>0</td>
<td>7</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>10.0”</td>
<td>-</td>
<td>1</td>
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<td>-</td>
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<td></td>
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<tr>
<td>COMMUNICATION</td>
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</tr>
<tr>
<td>Modbus RTU and CE</td>
<td>-</td>
<td>M</td>
<td>-</td>
<td>CE</td>
<td></td>
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</tr>
<tr>
<td>Ethernet + MODBUS RTU and CE + UL</td>
<td></td>
<td></td>
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<td></td>
<td>ETH</td>
<td>-</td>
<td>UL</td>
<td></td>
<td></td>
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<tr>
<td>VERSION</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Mixed zone max</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>006</td>
</tr>
</tbody>
</table>

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.