



REMOTE CONTROL VIA WEB FOR STEIEL INSTRUMENTS

RW14

TECHNICAL MANUAL



TABLE OF CONTENTS

<i>INTRODUCTION</i>	3
<i>TECHNICAL DATA</i>	5
<i>INSTALLATION AND ELECTRICAL CONNECTIONS</i>	5
<i>VIEW OF THE ELECTRONIC BOARD</i>	6
<i>LED</i>	7
<i>INTRODUCTION TO THE SYSTEM</i>	8
<i>HOME PAGE</i>	8
<i>HANDLING OF CUSTOMERS - USERS</i>	9
<i>HANDLING OF USERS - DEVICES</i>	10
<i>DEVICE LIST</i>	11
<i>DATA VISUALIZATION</i>	13
<i>Data Visualization - TABLE</i>	13
<i>Data Visualization - DIAGRAM</i>	14
<i>Data Visualization - ALARMS</i>	15
<i>CONFIGURATION OF CHANNELS</i>	16
<i>CONFIGURATION OF INTERFACES</i>	17

INTRODUCTION

RW14 is a device that interfaces with the STEIEL measurement instruments; designed both for the needs of control and management of pool water, and for industrial applications.

The configuration, setting and data visualization are performed through special web pages, allowing the user to interface remotely through a simple PC, Tablet or Smartphone equipped with network connection.

Once installed and started, the RW14 periodically polls the connected instruments, records the data, and checks the alarm thresholds.

In addition the user can choose a specific measurement configuration, display the graph of the acquired values or a table of data or generated alarms, change the system configuration parameters or network settings.

The internet connection is available through LAN port or WiFi module (to be specified upon order).

RW14 is equipped with DHCP system (Dynamic Host Configuration Protocol), that allows the automatic acquisition of network addresses and, therefore, a fast installation of the device.

If a specific configuration is required for the IP, gateway and subnet mask addresses, these data must be specified when ordering.

The remote access to the device is done by connecting to the site www.rw14.it and data visualization does not require the installation of special programs, but a common web-browser as for example Google Chrome (recommended) or Internet Explorer (v.11 and later).



TECHNICAL DATA

Case	shockproof ABS, for wall installation
Dimensions	instrument: 200 x 150 x h80 mm fixing template: 144 x 98 mm
Installation	wall-mounting, through 4 fixing holes
Protection Rate	IP56
Power Supply	100...240V~ ; 50/60Hz ; 6VA
Buffer Battery	for internal data logging, CR2032, at least 4-year life
Internet Connection	LAN port or WiFi module (specify upon order)
Serial Input	1 standard RS232 input, compatible with: <ul style="list-style-type: none">• Industrial instruments, series S507 / S508• Colorimetric units, series MCO07 / MCO14• Multi-parametric units, series EF207 / EF214 / MC14• Compact systems, series EF260 / EF270 / EF300• Dosing pumps, series EF160 and PROXIMA PSP• Dissolving units, series Pool-Chem Flex
Optional Inputs	<ul style="list-style-type: none">• up to 3 additional serial modules, with RS232 input• 1 analogic module with two 4-20 mA inputs• 1 digital module with 4 inputs
Cable Length	<u>Ethernet cable</u> : max. 100 m (Cat. 5 high quality) <u>Serial cable</u> : max 10 m unshielded, max 15 m with shield connected to GND at one side only (side RW14), max 25 m shielded and located far from power cable <u>Analogic cable</u> : max 100 m with shield connected to the negative at one side only (side RW14)

Note: RW14 is equipped with DHCP system (Dynamic Host Configuration Protocol), that allows the automatic acquisition of network addresses and, therefore, a fast installation of the device. If a specific configuration is required for the IP, gateway and subnet mask addresses, these data must be specified when ordering.

INSTALLATION AND ELECTRICAL CONNECTIONS

To install the device, choose a position as far as possible from humidity sources and chemical vapors. When opening the casing, please pay attention to the cable that connects the LED to the electronic board: carefully open the cover and then remove the LED connector. Note that the LED connector has a longer side for the polarization and therefore it is possible to reassemble it without exchanging the polarities. The power supply has to be provided to the proper 2-pole removable terminal block, using a bipolar cable with section between 0.5 and 1mm².

Note: Upon request is also available a model with external power supply.

For connections, please refer to the figure here at the right side and to the one on the next page.

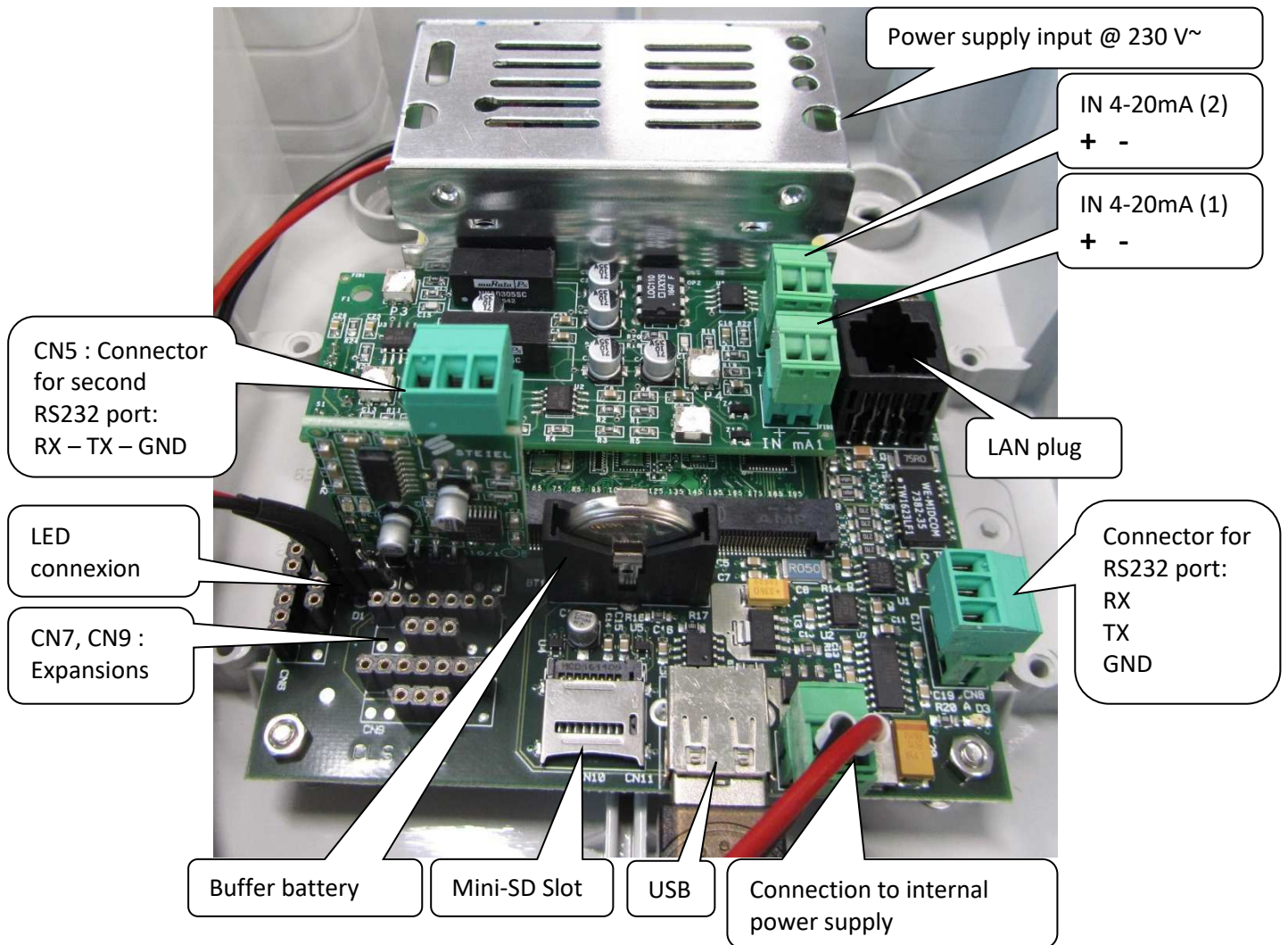
For easy wiring, the cable outlets from the casing are laid on precut bulkheads. This way you can insert the cables already assembled with connectors.

The instrument is supplied with 4 sheet-pass for additional wiring.

Note that the casing is milled only in correspondence of the standard bulkheads; to add more holes, imitate the original milling or specify the number of required connections upon order.

If the instrument is installed in a very humid place or in strong fumes, it is recommended to seal the outlet holes for example with silicone.

VIEW OF THE ELECTRONIC BOARD



Notes:

- 1) The picture may differ from your unit, for various supplies and / or accessories or expansions.
- 2) The Mini-SD slot is empty. A possible Mini-SD is used for:
 - Update the device firmware
 - Change the network settings for Internet connection (DHCP, manual or via WiFi key)
 - Storage hardware: in case of failure of Internet connection, the data of the unit connected will be automatically saved in the Mini-SD memory card
- 3) In the case of RW14 WiFi, the USB socket will be used for connecting the WiFi module.
- 4) **Pay attention to the connection of the serial port! If the RX and TX connections are reversed, the communication does not work but the device does not have any problem; instead, exchanging a signal with 0V (GND) can cause the burning of the serial port of the device or any RW14 connected.**
- 5) To connect an additional board for serial communication, you have to **switch off the instrument and respect the following insertion order of the expansion boards:**
CN5 → serial port 2, CN7 → serial port 3, CN9 → serial port 4.

LED

Once powered the device, after about 20 seconds the LED will light on the front panel indicating one of the following conditions:

- 1) Slow blinking light = the RW14 operates correctly.
- 2) Fast blinking light = the Ethernet connection is missing.
The Ethernet cable has been disconnected or the network does not work properly; check switch, hub, router, etc.
- 3) Two blinks and one pause = Internet connection error.
The connection to the network is correct, but the Internet access does not function; check the status of the DHCP server, the settings of the manual connection to the network (IP, gateway, etc.) or WiFi system (network SSID, password, etc.)
- 4) Three blinks and one pause = communication error with the RW14 server.
The device is correctly connected to Internet, but the connection is not confirmed by the RW14 server; if the LED remains in this status, probably there are some firewall restrictions in the network; contact the network operator so that appropriate changes are made (it must be able to access the host "steiel-sede.rw14.it").

INTRODUCTION TO THE SYSTEM

The RW14 remote control service can be accessed via web from a PC or portable device, by entering the address <http://www.rw14.it> in the search bar of your browser.

From here you can view and configure the installed RW14 devices.

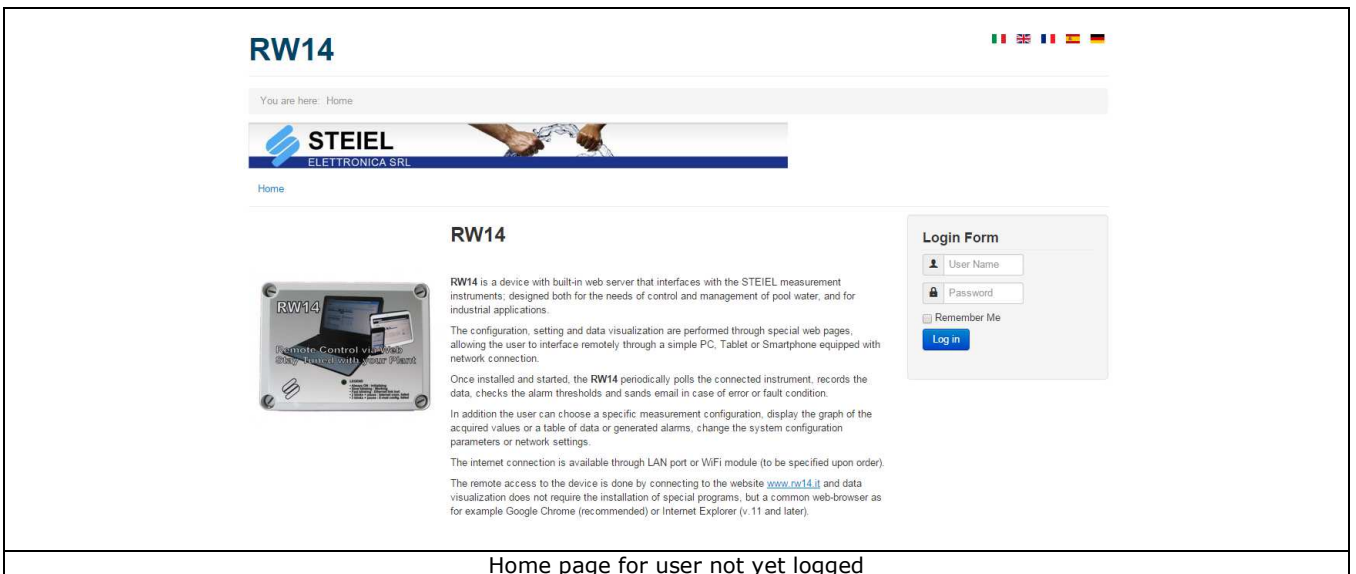
Below all the pages of the interface will be explained through screenshots and description of the functions and operations.

HOME PAGE

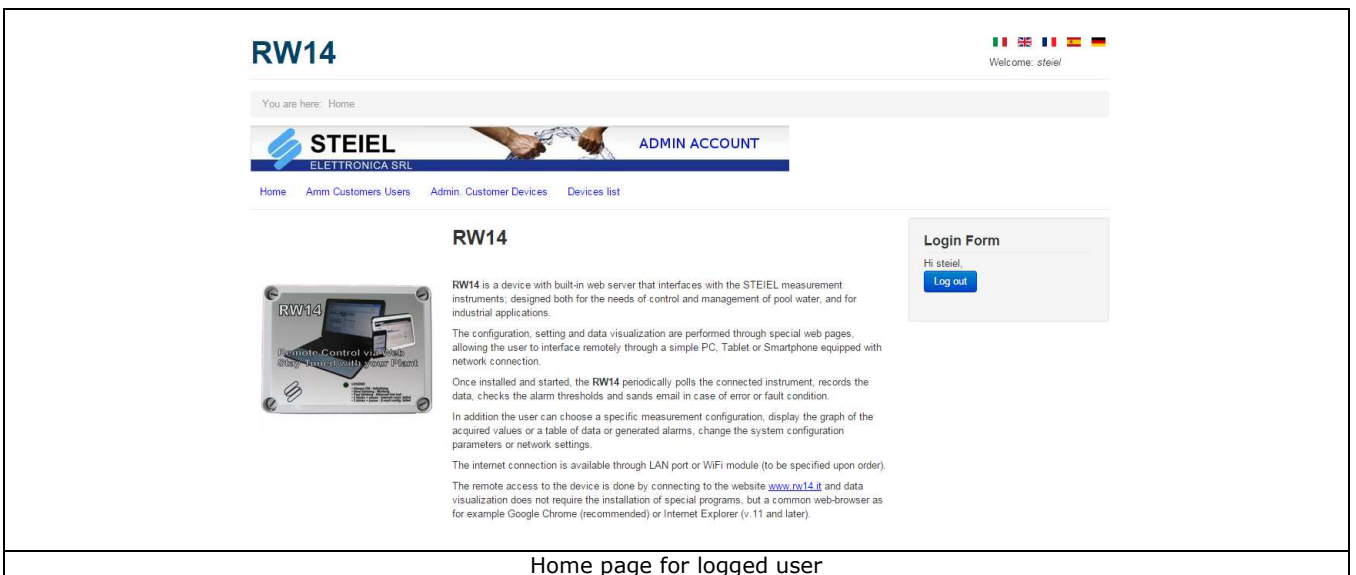
The Home Page shows a picture of the product with a brief description.

This page can be viewed by all users, both guests and logged ones. From the Home Page you can access the rest of the site only after entering the correct user name and password in the Login Form located on the right of the page.

Depending on the user name and password entered, you will have the access to the reading and / or configuration pages of your own RW14 devices.

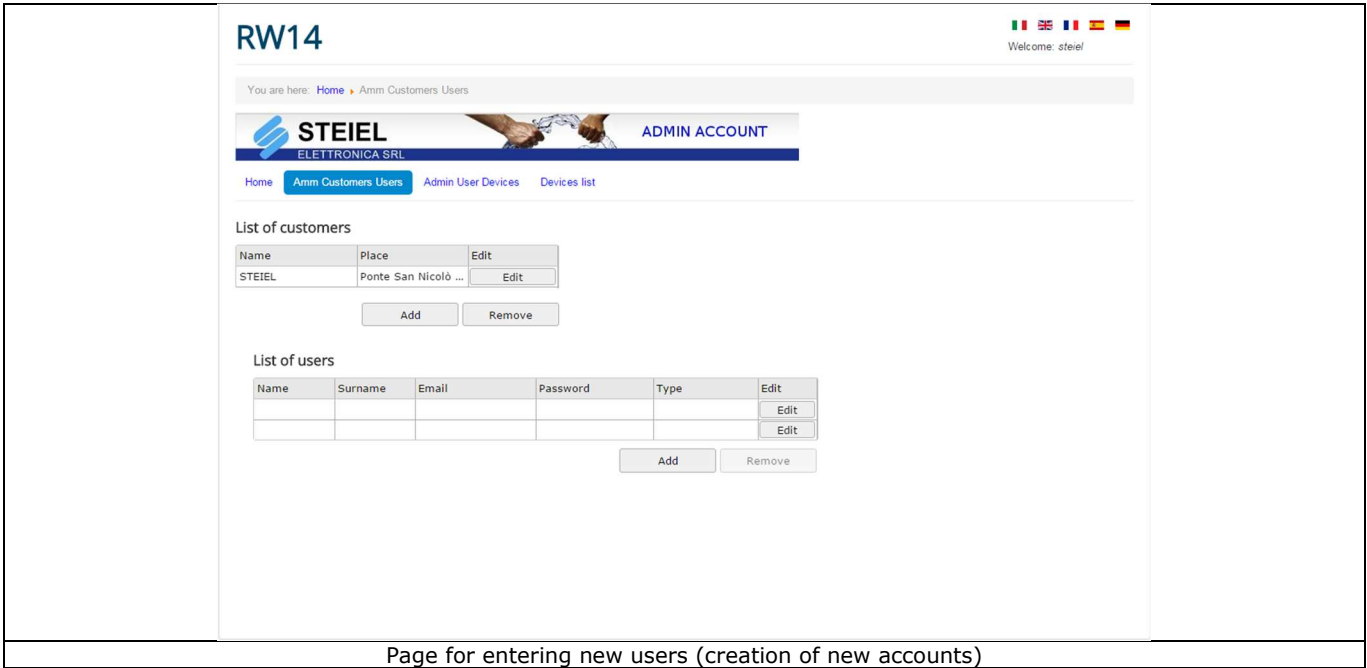


Home page for user not yet logged



Home page for logged user

HANDLING OF CUSTOMERS - USERS



Page for entering new users (creation of new accounts)

After entering his username and password (provided by STEIEL), the installer will access the personal area of the web site, and, therefore, the management of his customers and devices.

In this section, the technician can customize his web page, by entering for example a new logo, description and location of his company, or change the text color.

Just click on the “Edit” button related to the only item in the table “List of customers”.

Click “Save” to confirm the last changes, or “Cancel” to exit without saving.

Change customer ✕

Name:

Place:

Description:

Style: blue ▾

Upload: Nessun file selezionato

File:

Change user ✕

Name:

Surname:

Email:

Password:

Type: Viewer ▾

Select the only row in the table “List of customers” and the table “List of users” will appear, initially empty.

The installer can generate all the accounts related to his customers, simply clicking on the button “Add” and then “Edit”, filling the following fields:

- Name : enter the user’s name.
- Surname : enter the user’s surname.
- Email : enter a valid e-mail address.
- Password : enter the password chosen by the user for logging to the www.rw14.it web site.

- Type : “Viewer” (allow the real time reading of measurements, the uploading of the measurement and alarm history, and the data export to a spreadsheet) or “Technician” (can perform all operation of the “Viewer” user, and also directly interact with the controller for remotely changing its parameters, set additional inputs for additional units, customize the starting value and full scale value of measurements, change the alarm thresholds, activate and deactivate the controller data reading).

Once pressed the “Save” button, a new account is immediately created, that allows to access the www.rw14.it web site and show only the devices of that user.

HANDLING OF USERS - DEVICES

In this section, the technician can assign one or more RW14 devices, previously created. This allows to choose how many and which devices will be displayed for the “Technicians”/“Viewers” who log in to the site, in order to keep well separated the various installations.

Once selected the only customer in the table “List of customers”, automatically will be shown the table “Devices”, listing all the RW14 devices purchased by the installer.

Select one of these and automatically will open the table “List of users”, i.e. the list of all users created in the previous section (see paragraph “Handling customers - users”). Now you can decide which users should be enabled or disabled for the interaction with the selected RW14 device.

In other words, the installer can decide independently whether and how many devices assign to each single user.

Finally click on the “Submit” button to confirm the desired configuration.

Note: The users displayed on gray background are “assigned” to that device, while those on white background are not.

The screenshot shows the RW14 web interface. At the top, there is a header with the RW14 logo and a welcome message. Below the header, there is a navigation menu with options like Home, Admin Customers Users, Admin User Devices, and Devices list. The main content area is divided into three sections: 'List of customers', 'Devices', and 'List of users'. The 'List of customers' table has one row with 'STEIEL' and 'Ponte San Nicol...'. The 'Devices' table has five rows with device IDs: 's14_00b', 's15_002', 's15_071', 's15_081', and 's15_082'. The 'List of users' table has five rows with columns for Name, Surname, Email, Password, and Type. The first two rows are highlighted in gray, indicating they are assigned to the selected device. The last row is white, indicating it is not assigned. A 'Submit' button is located at the bottom of the 'List of users' table.

DEVICE LIST

This is the main page where a logged user can interact with the devices.

The screen is divided into three parts:

- **Table of the devices:** each device visible by the user is listed in the table that shows the device name and the date of the last relevant information sent to the server, and allows to understand the status of the device through the color dot in the first column.

The possible states are as follows:

- o Red dot: the device is not connected to the server
- o Green dot: the device is correctly connected to the server and is communicating
- o Red or green dot with yellow triangle: a command has been sent to the remote device but has not yet been confirmed by the server

Moreover, you can check how many and which customers have been associated to that device, by pointing the mouse arrow on the “i” symbol related to each device.

- **Table of alarms:** shows the latest alarms sent from the devices. If a line of the table is selected, then the alarms shown are those relating to the selected device.
- **Area of instantaneous data:** once the device has been selected, on the right part of the page you can see small tables corresponding to the active interfaces. Each table will show the interface channels with their values. As you can see from the next screenshots, if a not connected device is selected, the data will be partially disabled (displayed in light gray).

You are here: [Home](#) > [Devices list](#)



Home Amm Customers Users Admin User Devices **Devices list**

Devices

Name	Date time	Users
s14_00a	14:28:43 12.02.15	
s14_00b	15:41:44 06.07.15	
s14_00c	16:46:35 03.07.15	
s15_001	16:25:49 23.11.15	
s15_002	10:54:06 18.12.15	
s15_003	15:06:56 28.09.15	
s15_004	15:13:24 28.09.15	
s15_005	09:42:37 16.09.15	
s15_006	03:41:40 20.12.30	
s15_007	06:36:57 29.09.15	
s15_008	11:14:43 02.07.15	
s15_009	10:54:13 18.12.15	
s15_010	12:56:01 02.07.15	
s15_011	09:54:37 18.12.15	
s15_012	00:56:08 06.06.31	
s15_013	11:29:23 02.07.15	
s15_014	15:22:44 17.09.15	
s15_015	09:54:27 18.12.15	
s15_016	00:37:49 06.06.31	
s15_017	08:18:47 11.11.15	
s15_018	09:54:59 18.12.15	
s15_019	12:16:47 02.07.15	
s15_020	14:19:55 10.01.31	
s15_021	15:34:28 02.07.15	
s15_022	14:06:11 02.07.15	
s15_023	14:45:08 06.02.15	
s15_024	13:54:09 21.04.15	
s15_090	13:57:45 21.04.15	
s15_091	13:44:04 21.04.15	
s15_092	13:38:22 21.04.15	
s15_093	13:31:56 21.04.15	
s15_094	13:09:59 21.04.15	
s15_095	11:23:23 21.04.15	
s15_096	14:59:25 21.04.15	
s15_097	12:46:42 21.04.15	
s15_098	12:39:53 21.04.15	
s15_099	12:31:07 21.04.15	
s15_100	12:21:51 21.04.15	
s15_101	11:24:43 21.04.15	
s15_102	10:34:53 21.04.15	
s15_103	10:55:31 21.04.15	

Display Channels Interfaces Default

Recent alarms

Name	Date time	Description
s15_002	10:31:36 18.12.15	Digital Input (HI)
s15_002	10:31:36 18.12.15	Digital Input (LO)
s15_002	10:31:36 18.12.15	Digital Input (LO)
s15_002	10:31:36 18.12.15	Digital Input (HI)
s15_002	14:09:45 27.11.15	Upper alarm exceed
s15_002	14:09:45 27.11.15	Upper alarm exceed
s15_002	11:46:44 27.11.15	Upper alarm exceed
s15_002	11:46:44 27.11.15	Upper alarm exceed
s15_002	11:08:16 13.11.15	Lower alarm exceed
s15_002	11:08:16 13.11.15	Lower alarm exceed
s15_002	14:11:33 05.11.15	Upper alarm exceed
s15_002	14:11:33 05.11.15	Upper alarm exceed
s15_002	11:45:33 05.11.15	Upper alarm exceed
s15_002	11:45:33 05.11.15	Upper alarm exceed
s15_002	11:43:33 05.11.15	Upper alarm exceed

Interface: Vasca 01

Name	Value	M.U.
pH	Err	pH
RX	Err	mV
Temp	Err	°C
Cl lib	Err	ppm
Cl tot	Err	ppm
Cl comb	Err	ppm

Interface: Vasca 02

Name	Value	M.U.
In pH/RX/T/Cl/CO	Err	pH
Temp	Err	°C

Interface: Vasca 03

Name	Value	M.U.
In pH/RX	Err	pH
Vel	Err	imp/min

Interface: Vasca 04

Name	Value	M.U.
pH	Err	pH
RX	Err	mV
Cl CLE12	Err	ppm
Cl CP-CL	Err	ppm
Temp	Err	°C
Cl tot	Err	ppm
Cl comb	Err	ppm

Interface: DI_1

Name	Value	M.U.
Digital input	1	

Interface: DI_2

Name	Value	M.U.
Digital input	0	

Interface: DI_3

Name	Value	M.U.
Digital input	0	

Interface: DI_4

Name	Value	M.U.
Digital input	1	

DATA VISUALIZATION

After selecting a device from the list, the “Show” button is enabled, which allows to open a page to display the data collected by the device.

This action can be performed by any user logged in.

Data Visualization - TABLE

Through this page you can access the data acquired by a device, previously recorded by RW14 and sent to the server.

Through the left column you can set some criteria for the data search:

- “Interface”: data can be displayed only if an interface is indicated
- “From date”: this is the starting date for the data search
- “To date”: this is the ending date for the data search
- “Live mode”: if this criterion is selected, cyclically a data request is made to the server
- “Search”: sends the data request to the server; the table is filled when data are received

A maximum of 10000 rows at a time can be loaded in the table; when this limit is exceeded, a popup message will appear to alert the user that not all data of the requested period can be present. In this case, narrow the search to a shorter period of time or change the sampling time for the acquisition (see “Configuration of interfaces” section).

The values highlighted in red indicate readings that exceeded the higher alarm threshold, while those shown in blue indicate readings below the lower alarm threshold.

Using the “Export” button you can export the table content to a file.csv.

The screenshot shows the RW14 web interface. At the top, there are flags for Italy, UK, France, and Germany, and a welcome message for 'steriel'. The breadcrumb trail is 'Home > Tabella Dati'. The main header features the STEIEL logo (ELETRONICA SRL) and an 'ADMIN ACCOUNT' button. Below the header, there are navigation links: Home, Amm Customers Users, Admin. Customer Devices, and Devices list. The selected device is 's15_005'. On the left, there are search filters: 'Interface' set to 'Vasca Grande', 'From date' and 'To date' both set to '29/07/2015', and 'Live mode' unchecked. A 'Search' button is present. The main area displays a table with columns for 'Date and time (utc)', 'Date and time (local)', 'pH', 'RX', and 'Temp'. The table contains 20 rows of data. The 'pH' column has values of 7.00, and the 'Temp' column has values ranging from 27.1 to 27.6. The 'RX' column has values of 0. The table is titled 'Table' and has tabs for 'Diagram' and 'Alarms'. Below the table, there is a caption: 'Page for data visualization (table)'. The interface is clean and professional, with a white background and blue accents.

Data Visualization - DIAGRAM

As for the table, even the data shown in the diagram can be filtered by criteria available on the left side of the page.

As the table shows all the data sampled by the device (30 sec.), the diagram shows only the data sampled at the frequency set in the interface configuration page.

In this case the limit for the points that can be used in the graph is 600.

From the graph legend you can clear a track (which will be hidden) and using the bottom bar you can change the ends of the abscissas axis and get a zoom over the.

The graph scales are defined in the channel configuration page.



Data Visualization - ALARMS

Similarly to the other two types of data, the alarms are requested to the server by applying the filter criteria specified on the left side of the page.

Alarms are displayed in a table that specifies the channel name, interface, device date and time, and a short description.

The screenshot displays the RW14 web application interface. At the top left, the logo 'RW14' is visible. On the top right, there are language selection flags and a 'Welcome: steiel' message. Below the header, a breadcrumb trail shows 'Home > Tabella Dati'. The main navigation bar includes the 'STEIEL ELETTRONICA SRL' logo and the user's role 'ADMIN ACCOUNT'. A secondary navigation bar contains links for 'Home', 'Amm Customers Users', 'Admin Customer Devices', and 'Devices list'. The selected device name is 's15_003'. On the left side, there are filter controls for 'Interface' (set to 'Vasca 01'), 'From date' (01/04/2015), and 'To date' (29/07/2015), along with a 'Live mode' checkbox and a 'Search' button. The main content area features a tabbed interface with 'Table', 'Diagram', and 'Alarms' tabs. The 'Alarms' tab is active, showing a table with the following data:

Channel	Interface	Date time	Description
status	DJ4	10:41:04 07.04.15	Digital Input (HI)
status	DI3	10:41:04 07.04.15	Digital Input (LO)
status	DI2	10:41:04 07.04.15	Digital Input (LO)
status	DI1	10:41:04 07.04.15	Digital Input (HI)

Page for alarm visualization

CONFIGURATION OF CHANNELS

As for the interface configuration, this page is available only if a device has been selected from the list and if the user is not a simple viewer type.

This page allows the user to set some parameters for the acquired channels (note: each instrument must have at least one channel) and displays a table for each interface previously selected.

The channel values that can be modified are the following ones:

- Name: this is the name used to display the channel in the interface
- Enabled: indicates if the channel must be involved in the visualization or not
- M.U: is the measure unit
- Threshold (L): is the low threshold; if the sampled value is lower than this threshold, an alarm will be generated
- Threshold (H): is the high threshold; if the sampled value exceeds this threshold, an alarm will be generated
- Decimal: id the number of decimal places to be used for rounding the value
- SS: is the starting value for the graph scale
- FS: is the full scale value for the graph

Note: The SS and FS values determine the Y axis of the measure in the graph; therefore set them appropriately for the type of measure to which they refer.

RW14 Welcome: steiel

You are here: [Home](#) > Configurazione Canali

STEIEL ADMIN ACCOUNT
ELETTRONICA SRL

[Home](#) [Amm Customers Users](#) [Admin. Customer Devices](#) [Devices list](#)

Name of the selected device: s15_007

Interface: Vasca01 (S1)

Id	Name	Enabled	M.U.	Tresh.(L)	Tresh.(H)	Decimal	Ss	Fs
ph_01	pH	<input checked="" type="checkbox"/>	pH	6.8	7.8	2	0	14
rx	RX	<input checked="" type="checkbox"/>	mV	650	800	0	0	999
cl_01	Cl CLE12	<input checked="" type="checkbox"/>	ppm	0.5	2	2	0	5
cl_02	Cl CP-CL	<input checked="" type="checkbox"/>	ppm	0.5	2	2	0	2
temp	Temp	<input checked="" type="checkbox"/>	°C	25	35	1	0	100
cl_03	Cl tot	<input checked="" type="checkbox"/>	ppm	0.5	2.5	2	0	5
cl_04	Cl comb	<input checked="" type="checkbox"/>	ppm	0	0.5	2	0	5

Channel configuration page

CONFIGURATION OF INTERFACES

From the device list page, by pressing the “Interface” button you can access to an area dedicated to the configuration of the instruments connected to the device.

This area CANNOT be accessed by a “Viewer” type user.

RW14 is provided with an RS232 serial interface for the connection to the measurement instruments selected from the drop-down menu in the table.

Upon request, more inputs can be added to connect more instruments, up to a maximum of 4 serial ports, 2 analogic inputs, 4 digital inputs.

This page also allows to:

- Change the name of the reference interface (e.g. “Children pool”)
- Set the sampling time by which the data will be shown on the graph
- Check the firmware version installed on the device
- Select the time zone to use for the data sampling time

When the “Submit” button is pressed, the page will go back to the device list and the yellow triangle will appear on the device dot. This means that the new configuration has been sent to the device and the triangle will disappear as soon as the setting is confirmed.

Once correctly set the instrument associated to a certain interface (e.g. serial “S1” on “EF300” unit) and after confirming with “Submit”, you can access the “Parameters” section, in which a new window will open, that includes the list of parameters for the controller. Through the “GET” button, an automatic request will be sent for displaying the values set in the controller memory. To change the parameters (relay intervention thresholds, timers, hysteresis, etc.), just write the new values and click on the “Ok” button for sending them to the controller.

Note: For more details about the parameters meaning, click on the “Manual” button to open the PDF document corresponding to the selected controller. You can also edit the parameter description in the table, for a better understanding.

The screenshot shows the RW14 interface configuration page. At the top, there is a navigation bar with the STEIEL logo and 'ADMIN ACCOUNT'. Below this, there are navigation links: Home, Amm Customers Users, Admin. Customer Devices, and Devices list. The page title is 'RW14' and the user is logged in as 'steiel'. The breadcrumb trail is 'You are here: Home > Configurazione Interfacce'. The selected device name is 's15_005'. The configuration settings are: Sampling time (min) set to 2 m, FW Version: 0.1.0-B, and Time Zone set to Europe/Rome. The main table lists the following configurations:

ID	Type	Name	Instrument	Parameters
S1	serial	Vasca Grande	EF300	Parameters
S2	serial	Vasca 02	OFF	Parameters
S3	serial	Vasca 03	OFF	Parameters
S4	serial	Vasca 04	OFF	Parameters
DI1	digital_input	DI_1	OFF	Parameters
DI2	digital_input	DI_2	OFF	Parameters
DI3	digital_input	DI_3	OFF	Parameters
DI4	digital_input	DI_4	OFF	Parameters
AI1	analog_input	AI1	OFF	Parameters
AI2	analog_input	AI2	OFF	Parameters

A 'Submit' button is located at the bottom left of the table area.

Interface configuration page

VERSION WITH SIM CARD

For special versions provided with router and LAN cable, the user has to insert a **data SIM** (a type M2M – MachineToMachine – is recommended) in the appropriate router slot. Make sure your SIM card is not protected by a PIN code; if necessary, disable it.

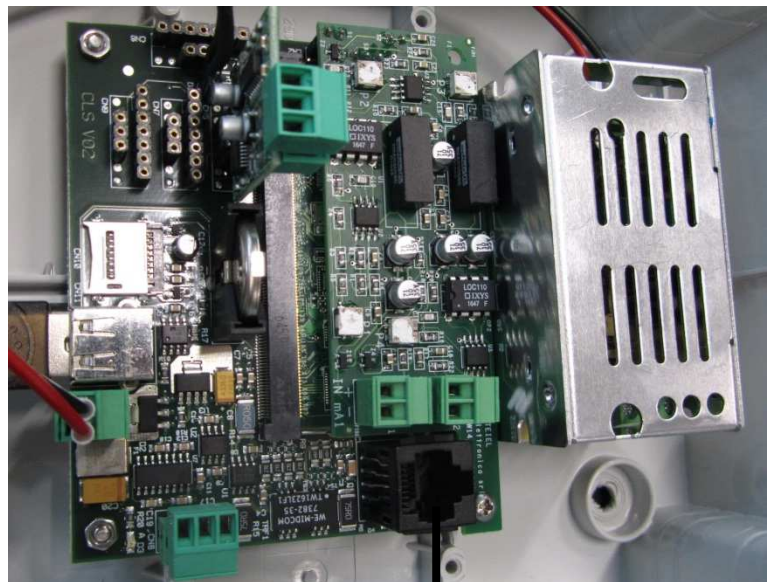
Connect the LAN1 port of the router to the LAN port of the RW14 using the supplied LAN cable.

For details, refer to the router manual.

View of the router connections



View of the RW14 board



The manufacturer can modify the instrument or the technical manual without advanced notice.

Warranty

All STEIEL products are warranted for a period of 12 months from the delivery date.

Warranty is not valid if all instructions of installation, maintenance and use, are not strictly followed by the user. Local regulations and applicable standards have also to be followed.