



ARTECO-Everywhere 3.0

USER MANUAL

Copyright © Arteco S.u.r.l. 2020

The information contained in this manual is property of Artec s.u.r.l.

Duplication and redistribution of this manual, in whole or in part, without the written permission of Artec s.u.r.l. is prohibited.

All specifications are subject to change without notice. This manual is updated and reviewed regularly. Although every effort has been made to make the information contained in this manual complete and correct Artec cannot be held responsible for any incorrect or missing information that may be contained in this manual.

Any suggestions should be directed to Artec s.u.r.l. concerning this manual and will be evaluated for future versions.

Limitation of Liability

This device cannot be used as emergency equipment or life support, or used in conjunction with equipment where a malfunction can cause damage to human life, without the prior written permission of Artec s.u.r.l. ..

Chapter 1 – General	5
Unpacking the Unit	5
Environmental Conditions	5
Links	5
Supply	5
Installation	5
Chapter 2 – Connections	6
Names and Functions of Connectors	6
Chapter 3 – Web Client.....	8
Web Client.....	8
Control	9
Functions.....	9
Email	10
I/O Tests and Timings.....	12
Custom Commands	14
Mirroring.....	15
Micro PLC	18
Section 3: Menus (Micro PLC Schedule Management)	21
Network	23
Network Settings	23
DDNS Settings.....	24
Network Monitor.....	25
Settings	26
Date&Time	27
User Account	27
System.....	27
System Restore	28
Firmware Update.....	29
Lock.....	29
Names	29
Calendar	30
Chapter 4 – Reset to factory settings	34
Chapter 5 – CGI Command Interface	35
“info” Command	35
“monitor” Command.....	36

"io" Command	37
"set" Command	38
"byte" Command	41
"var" Command	42
"input" Command	43
"seq" Command.....	44
"mirror" Command	44

Chapter 1 – General

Unpacking the Unit

Inspect the packaging that the Artec Everywhere comes in to ensure it is not damaged.
In the case it is, do not take the device out of the box and inform the courier.
Take all necessary precautions against the risk of damage to the unit due to electrostatic discharge.

Environmental Conditions

Storage	from -10° to +55°C (non-condensing)
Operation	from +5° to +50°C (non-condensing)
Humidity	from 30% to 90% (non-condensing)
Altitude	2000m max

Links

The device is provided with spring contacts for rapid insertion to accept section conductors between 0.4 and 0.8 mm in diameter (AWG 26 to AWG20).
To connect the wires to the device, lower the orange latch, insert the wire, then release the latch.
The device has a standard RJ45 connector for connectivity and PoE.

Supply

The device can be powered from a PoE source as it is a PD class 2. Alternatively, it can be supplied from a SELV source (optional) with a voltage of 12 or 24 VDC.
The max 12V consumption is about 300 mA, 24 V 150 mA. See **Chapter 2 - CONNECTIONS** for more details.

Installation

The device must be installed on a DIN rail in a closed container with no dust or moisture according to the limits stated above. (**See Environmental Conditions**).

IN ORDER TO PERFORM A SAFE AND PROPER INSTALLATION PLEASE READ THIS MANUAL VERY CAREFULLY

Chapter 2 – Connections

Names and Functions of Connectors

Refer to Figure 1 for connections to form Artec Everywhere:

Figure 1 – Connections

To the left of the P1 connector is a LED that flashes during normal operation at 1 second intervals.

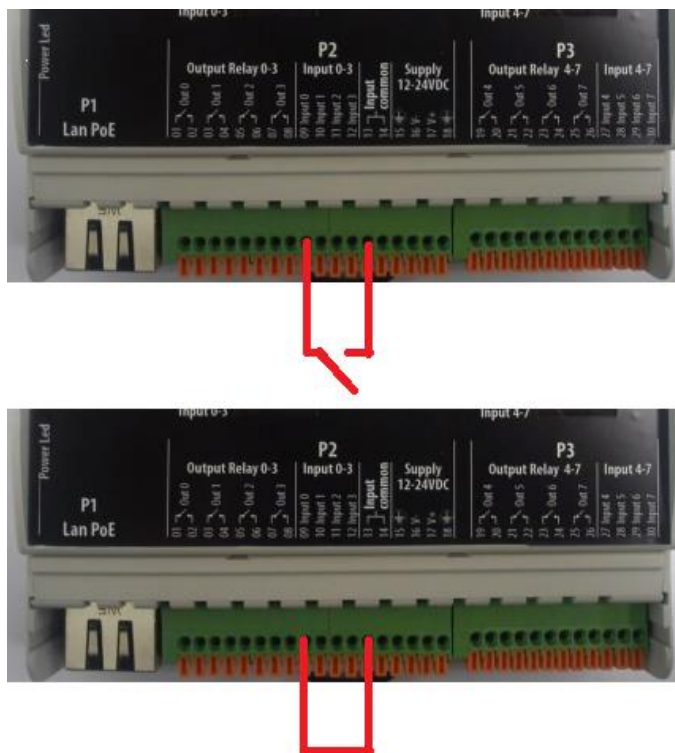
Starting in the lower left hand side you have:

- **P1**
 - **Output Relay 0-3 (pins 01,02,03,04,05,06,07,08):** The first four outputs of the module; connected here The first four loads to be controlled (for example Out 0 consists of the terminals 01 and 02).
Each output can bear a maximum current of 24V @ 1A with resistive load. At load or inductive loads exceeding the allowed limits it is recommended interfacing with the power relay.
Each output (Out "N") also has an internal green light visible through the transparent window on the front panel showing the status (Off = output non-energized, ON: output energized)
 - **Input 0-3 (pins 09,10,11,12):** These are the first four inputs of the module. These are configured as Dry contacts. A dry contact, also called a volt-free contact, is a set of switch contacts that have no other circuit or voltage wired to them.
In other words, a dry contact simply detects whether or not an input switch is open or closed.
 - LOW STATUS: input pin open
 - HIGH STATUS: input pin closed to common input pin.
 - **Input Common terminal (pins 13, 14):** Contacts that are referenced by all of the module's inputs. The common reference terminals are the contacts 13:14 "common input" (they are equivalent to each other).
 - **Supply 12-24VDC (pins 15,16,17,18):** This terminal consists of the pins 15,16,17 and 18 which serve to supply power the module. Pins 15 and 18 are related to the "grounding" of the module that is used to control any over-voltage present at the inputs. The pins 16 and 17 instead relate to the DC module. The pin 16 is connected to the "-" power supply while pin 17 is connected to the "+". The DC voltage supplied via must be, as stated, 12 or 24V.
- **P2**
 - **Output Relay 4-7 (pins 19,20,21,22,23,24,25,26):** These are the remaining four outputs of the module; The remaining four loads connect here to control. Each output can support a maximum current of 24V @ 1A with resistive load; In the case of loads exceeding the allowed limits, it is recommended to use an inductive interface with power relay. Each output (Out "N") also has an internal green light that is visible through the transparent window on the front panel showing the status (Off = output non-energized, ON: output energized).
 - **Input 4-7 (pins 27,28,29,30):** They are the remaining four module inputs; These are configured as Dry contacts. A dry contact, also called a volt-free contact, is a set of switch contacts that have no other circuit or voltage wired to them.
In other words, a dry contact simply detects whether or not an input switch is open or closed.
 - LOW STATUS: input pin open
 - HIGH STATUS: input pin closed to common input pin.

WIRING

Everywhere has dry contact inputs.

If you need to connect a device equipped with relay or "dry-contact" outputs, it can be connected directly to the module input. See image below.



If a device with a digital voltage output (12/24 Vdc) is to be connected, an external relay must be used

1. Connect the output of the device to the relay input coil
2. Connect the relay output between the input pin and the common input

Things to take into account when connecting the device:

- The conductor cross section must be adequate.
 - For the device's power supply to the P1 Connector, use cables with a minimum diameter of 0.5 mm²
 - Use the same wire type as conductors for the P3 and P4 connectors.
 - Depending on the type of installation, you may have to take into account other recommendations. The installer is required to comply with all provisions that apply in the country where the device is used.

Chapter 3 – Web Client

The device has an integrated web server that provides the user with complete control via its client in the browser. With it you can set the network parameters, assign each I / O a name, set the web client password protection itself, activate the Dynamic DNS, update the firmware of the device, etc.

You can obviously also read the status of the input channels and enable or disable the outputs.

The choice of a function whatever, in any case, requires the entry (for the first time only) of the user name and the password.

The default IP address of the module is **192.168.10.96**

The default user name is '**admin**' and the default password is '**arteco**'

Place them correctly in the appropriate fields and click OK to proceed.

Note: Access to the web interface of the Artec-Everywhere can be restricted in the event that an antivirus is installed. In case of access problems, check the antivirus settings and disable the web control, or alternatively add the IP address / URL Artec Everywhere into the antivirus exceptions.

Web Client

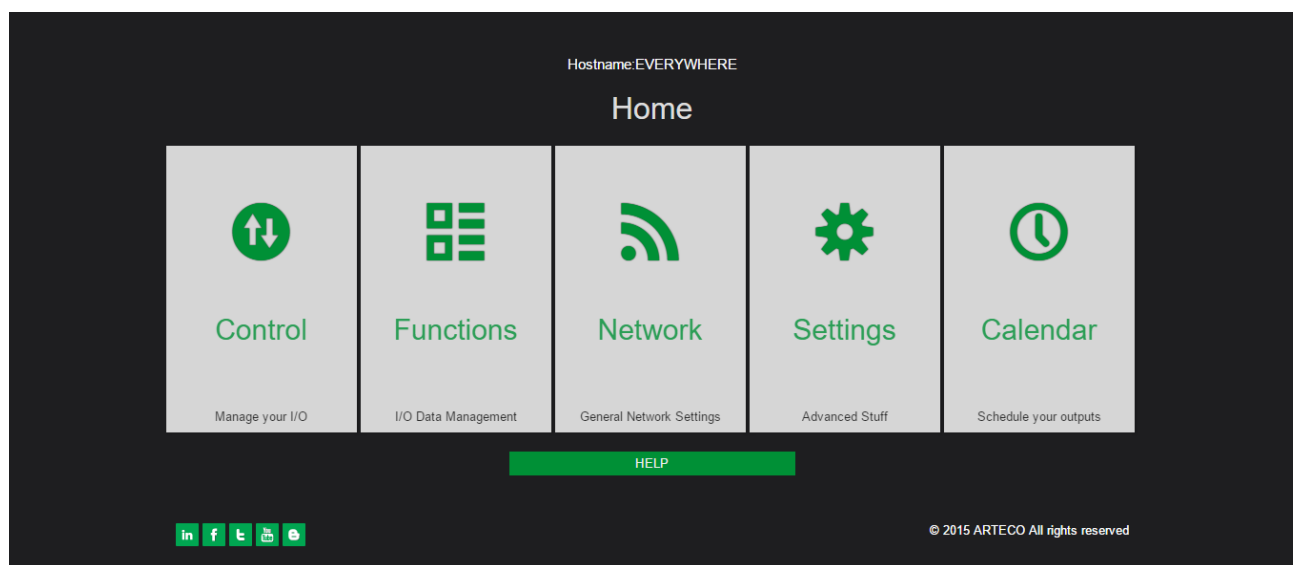


Figure 2 – Web Client Homepage

In Fig. 2 you can see the embedded web server's home page: see above the name "Home" with the module name (hostname). This is useful for identifying the module to which you are connected in the event there are multiple modules. This information is repeated on every page.

Note also the "HELP" button, which leads to convenient online help resources.

You can also operate on the I / O channels without using the Web interface, but if using CGI via http commands, refer to the chapter titled "**Command interface for CGI Everywhere**" for more information.

A useful feature of the firmware is the ability to use the "label", which are essentially a collection Boolean variables, and therefore can be in the state of TRUE or FALSE.

Many Everywhere functions can manipulate labels, status or undertake various actions depending on the state of the label. There is a mechanism to connect the functions available in the Everywhere, to create new functionality depending on the needs of the user.

Available variables are 26 characters in length and are represented by the letters of the alphabet from A to Z. Further information on usage are provided throughout the manual, where applicable.

Control

The first option available, starting from the left, is "**Control**".

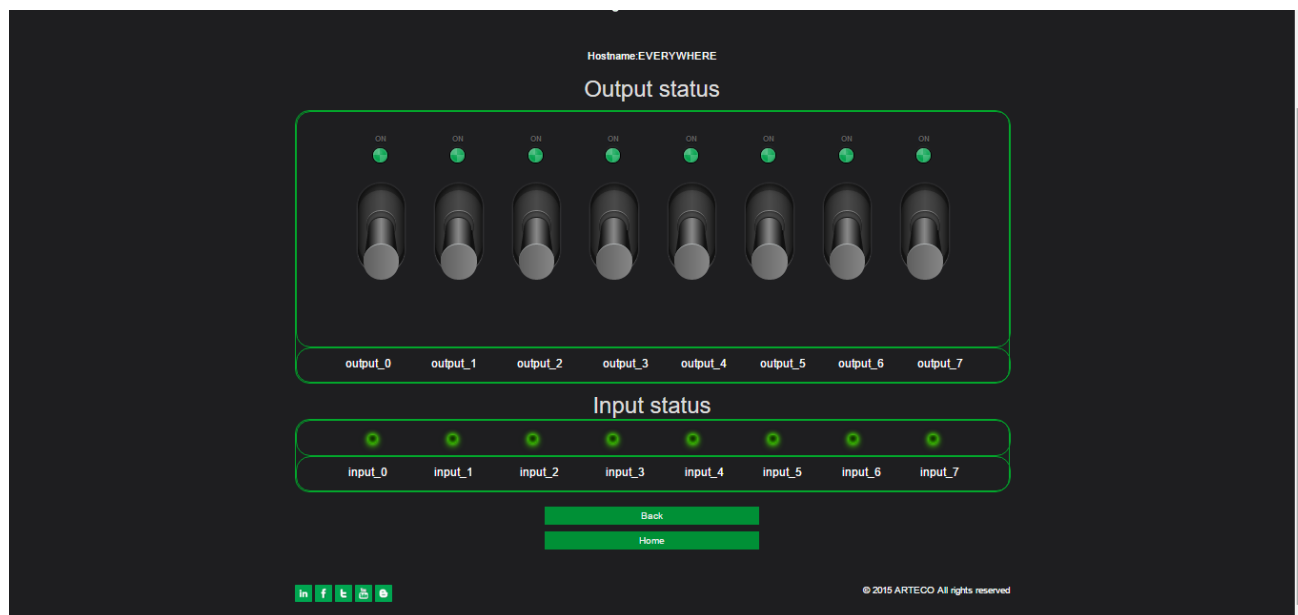


Figure 3 – Control

This page allows you to check the current status of the inputs and control the outputs. To control the outputs click on the relevant lever.

You can use this screen to recognize the state of the I / O according to the indicators LED type, which light up when the state is ON, and off when it is OFF.

If the names related to I / O channels have been changed, they will appear here instead of the default names shown in Figure 5.

This page automatically updates the status of input and output every 500 ms.

Functions

From this menu, you can configure the system so that it carries out certain functions, all the way from sending notifications of the configuration of the outputs to the programming of sequential actions, and more. In the next sections will now describe them one by one.

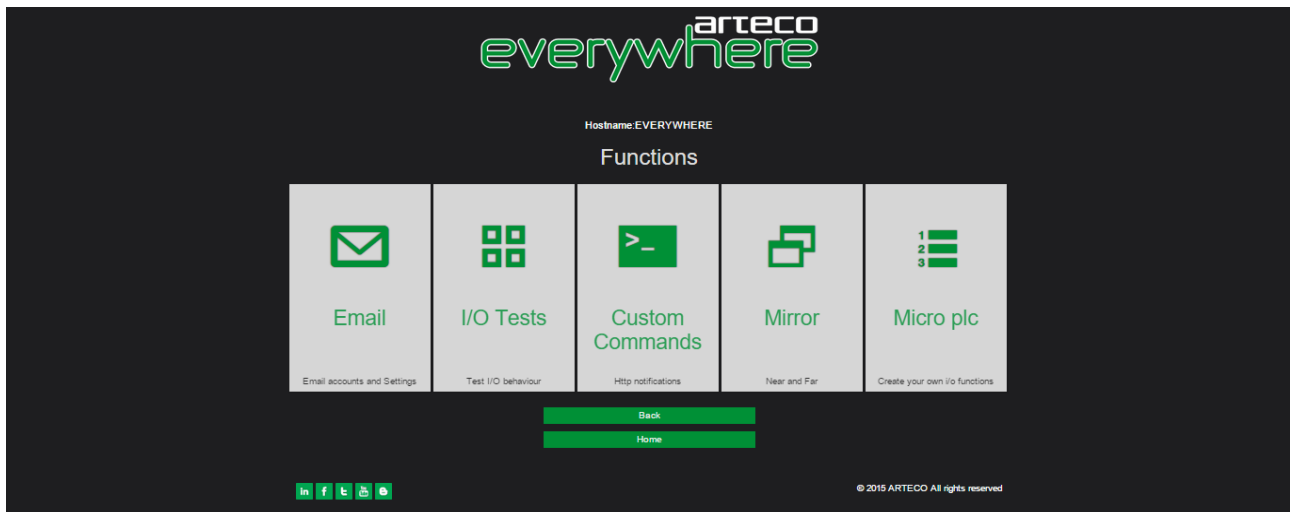


Figure 4 – Functions

Email

From this screen, you can configure the Everywhere module for sending email notifications to one or more email addresses.

In order to send email, it is necessary that the module is connected to the Internet. Then you must fill in the various fields properly, according to the data provided by the ISP or you System Administrator.

The screenshot shows the 'Email Settings' configuration screen. At the top, there is a dropdown menu for 'Email set n°:' with '0' selected. Below this is a large, rounded rectangular area containing several configuration options: 'Enable set:' with a checkbox, 'Use SSL:' with a checkbox, 'SMTP Server:' with a text input field, 'Port:' with a text input field containing '25', 'User Name:' with a text input field, 'Password:' with a text input field, 'From:' with a text input field, 'Recipients :' with a text input field, and 'Subject:' with a text input field containing 'Everywhere alert'. At the bottom of the form, there is a label 'Select email-triggering events :' followed by a large, empty text area for configuration.

Figure 5 – Email Settings

EMAIL notification settings

- Everywhere can send notification emails only using a third-party SMTP server (ie. Exchange, company email) properly configured
- Everywhere does not support TLS encrypted SMTP protocol to send notification emails.
Nowadays, the majority of online SMTP servers (such as GMAIL, HOTMAIL, YAHOO) require TLS encrypted SMTP protocol and do not allow to send email using NON-Encrypted SMTP protocol (port 25) or SSL only encrypted SMTP protocol (port 465).
- IMAP and POP protocol are not supported.

In addition to the configuration of the email, in the "**Recipients**" field you can insert more than one recipient address, separated by a semi-colon ";".

In the "**From**" field, you can indicate the mail or customize the sender's name.

In the "**Subject**" field, you can customize the subject of the email.

Under the table, however, you can define what are the conditions necessary for the system to send the email notification, selecting from:

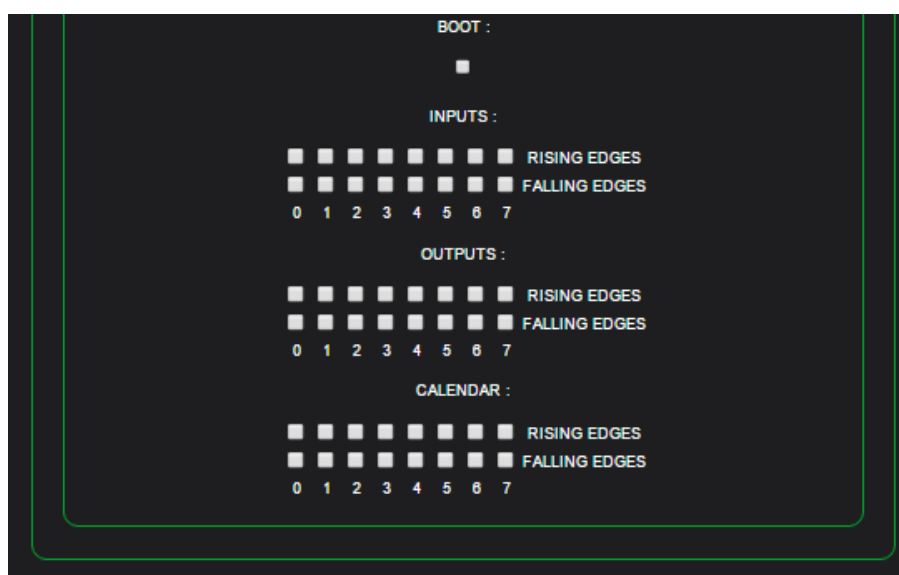


Figure 6 – Email Settings (cont.)

BOOT: send an email when the module reboots

INPUTS: send an email when there is a change of status for a selected input. You can also select whether the notification must be made when the input has a rising or falling edge.

OUTPUTS: send an email alerting the change of status of a selected output. You can also select whether the item must be made when the output is activated (rising edge) or off (falling edge).

CALENDAR: The calendar sends an email when one or more outputs, among those selected, change state due to the inserted programming. When the calendar is active, the LED to the left of the network connector blinking making three quick flashes followed by a pause.

At the end of the settings you can also make a submission test, by clicking the appropriate button, to check that the data is correct.

Once configured, click on the "**Save**" button.

I/O Tests and Timings

This feature allows you to change the output function depending on whether each of them is set to "switch" or "button" function.

ACTIONS							
CHANNEL	Set_Off	Set_On	Follow_In	Blink	Pulse	Link	In->Out
output_0	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>	Setup
output_1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	Setup
output_2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	Setup
output_3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	Setup
output_4	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	Setup
output_5	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	Setup
output_6	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	Setup
output_7	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	Setup

MODES		
CHANNEL	Switch	Button
output_0	<input type="radio"/>	<input type="radio"/>
output_1	<input type="radio"/>	<input type="radio"/>
output_2	<input type="radio"/>	<input type="radio"/>
output_3	<input type="radio"/>	<input type="radio"/>
output_4	<input type="radio"/>	<input type="radio"/>
output_5	<input type="radio"/>	<input type="radio"/>
output_6	<input type="radio"/>	<input type="radio"/>
output_7	<input type="radio"/>	<input type="radio"/>

Figure 7 – I/O Tests

When an output is in "switch" mode, its behavior follows the commands sent, whether they come from a CGI command or from a web interface.

However, when you change an output to "button" mode, a check on the output status is activated that prevents it from remaining "ON" (relay energized) for longer than the time set on the menu page **"Settings-> Timings"**.

Timings			
	ON Time	OFF Time	Pulse Time
output_0	10	10	10
output_1	10	10	10
output_2	10	10	10
output_3	10	10	10
output_4	10	10	10
output_5	10	10	10
output_6	10	10	10
output_7	10	10	10

Figure 8 – I/O Timings

In particular the setting that controls the output is related to "pulse time": for example, if the output is 0 in the "button" and the value set in the "Pulse" column for the exit 0 returns the value 10, the same output is not permitted to remain in the state of "ON" for more than 1 second. After this time, the output is reset to "OFF" and remains there until the arrival of a new command that switches it back to "ON".

This command affects the execution of all the commands that act on the outputs: for example, if you set for exit 0 to "blink" with a period of 5 seconds ON and 3 seconds OFF, and a PULSE time equal to 1 second (times are set from the menu "Output timing setup") and at the same time you activate "button" mode, you will have the output follow a cycle that will turn it ON for 1 second.

The function will then reset 4 seconds after remaining in the period "ON" and the output will turn "OFF". At this point you will run the "OFF" period lasting 3 seconds, as had been set. At the next cycle the output will again turn to "ON" but again only for 1 second, and so on.

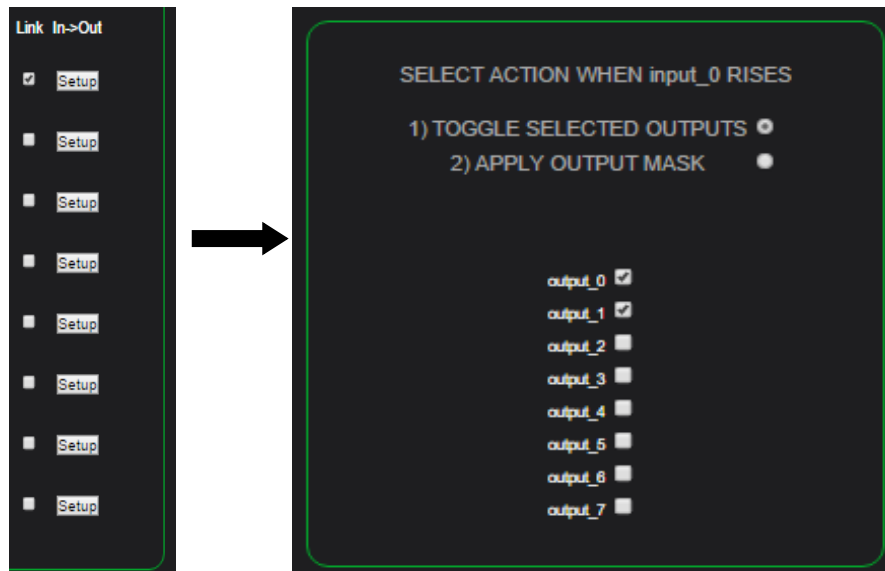


Figure 9 – Follow Input

The "follow" input is selected by clicking the "Setup" button, whose function is influenced by the setting of "switch" or "button" mode: If you set the "switch mode" function, "follow_input" works on the input signal level only if it conversely switches to the "button" function. "follow_input" then automatically changes its operation and acts on the input signal edges.

In addition to the ON, OFF, Blink, Pulse and Follow, there is an intuitive user input feature called LINK, which allows you to program two types of actions when an input is activated (i.e. the face of rising input). The first programmable action allows you to reverse (toggle) the status of the outputs that have been selected to each rising edge. This allows you to control equipment locally, while maintaining the ability to control them remotely. An application of this feature in a home automation system provides that the Everywhere inputs are connected to the lighting power buttons, and the relay outputs that activate the lighting itself. The Everywhere directly controls the lighting in this way, both locally and remotely sparing the user from buy leased units.

The second programmable action allows you to implement a pattern on Everywhere outputs when the selected input has the rising edge. In this mode, you have over eight combinations of outputs, each of which will be implemented when the corresponding input will see a rising edge. The use of this function is to set a single action of the scenarios, i.e. the predetermined configuration of the outputs. For instance, you can enable external lighting simultaneously by inserting an alarm system using a single button.

Custom Commands

This feature allows you to send to one or more remote devices over HTTP commands that are user-definable.

The screenshot shows a web-based configuration interface for 'Custom Commands'. The form is enclosed in a dark grey border with a green inner frame. At the top, the title 'Custom Commands' is displayed in a light blue font. Below the title, the 'Rule n°' is set to 0. The 'Trigger on:' dropdown is set to 'label', and the 'I/O:' dropdown is set to 'LABEL A TRUE'. The 'Remote host' is '192.168.10.106', the 'Port' is '80', and the 'Command' is '/set.cgi?set=0'. The 'Authentication' checkbox is checked. The 'User Name' is 'admin' and the 'Password' is 'arteco'. The 'Command description' field is empty. At the bottom, there are two green buttons: 'Save' and 'Test'.

Figure 10 – Custom Commands

The settings related to a certain command (IP address of the recipient, the command syntax, credentials, etc.) is set as a "rule", with a maximum of eight rules that can be defined.

Remote devices are all those devices that accept HTTP commands for the execution of some functions.

A remote device can also be another Arteco Everywhere.

This command is "triggered" by different types of events, as described in step 2.

For the activation of a "rule" the information must be entered as follows:

1. The number of the rule itself (from 0 to 7)
2. The type of change that triggers the rule: it is possible to transmit the command following a positive edge, negative or opposite of any output, or to TRUE by passing one of the first eight labels, selectable (from A to H). Leaving this field on the "disabled" value of course it will prevent from sending the associated command. If you decide to send a command after switching the label to TRUE in the system, possibly after run, it will reset the same variable to prevent multiple submissions of the command. To send a new command, the user must again carry the label selected in the TRUE state.
3. The input number or the label whose change (defined in the previous field) should cause the transmission of the command.

4. The address of the remote device that is to receive the command. Here you can enter an IP address (eg. 192.168.10.76) or a URL like "http: //IP_address.xxx" (the "http: //" should be omitted in this field, so just type "IP_adress.xxx"). In this case, check that the network gateway parameters and DNS settings are suitable in order for valid and proper host name resolution.
5. In this field, enter the port number on which the remote device is listening and on which port the command itself will be sent.
6. Enter into this field the command you want to execute from the remote device. It must always be preceded by the "/" character.
7. If the remote device requires authentication, check the appropriate box. It will send using "basic authentication".
8. If you were asked to authenticate a specific username, enter it here.
9. If you were asked to authenticate a specific password, enter it here..
10. You can enter an optional comment as a reminder for the position.

At this point press the "SAVE" button to store the rule.

It is then possible to force-send the command by pressing the "test" button.

If there are more rules you set, they are sent at least every 200 ms.

This is the minimum interval of time between sending and sending the next, but sampling of the inputs occurs every 100 ms. It is possible that events which control an input for a time less than this will not give rise to a transmission and will be lost.

Within these limits, all events that are caught are placed in a queue, and then are transmitted every 200 ms.

The event queue can hold about 1000, but it is possible that as the queue fills every 0.1 seconds and emptied every 0.2 seconds, an excessive number of events can fill the queue. In this case, subsequent events will not be stored (nor its command sent) until at least one place in the queue is released.

This type of operation is used to manage event queues which succeed more quickly than 200 ms, but for a limited time.

NOTE:

This adds the ability to trigger the sending of an HTTP command when a label (A to H) is TRUE. This allows you to connect this function to all other functions implemented by the Everywhere using the label.

Mirroring

This feature allows you to manage inputs and outputs of a module Artec Everywhere "slave" from another "master" module.

It is possible to make sure that the slave module reproduces on its outputs, the status of the master module inputs or outputs, depending on what you select in the configuration page.

With the mirroring function enabled, it establishes a continuous dialogue between master and slave even without changes to the inputs or outputs, namely the master module will send a "refresh" command to the slave every second.

Custom commands can also be inserted, in the case of the master module this is a numeric IP address or a URL.

If authentication is required and not switched off, then you need to enter into the fields the username and password of the master module similar to those set on the slave module, so that the same commands are accepted. Failure to enter the credentials, or the insertion of incorrect credentials, will cause failure in performing mirroring.

REMOTE SLAVE SETTINGS

Remote IP
192.168.10.106

Remote Port
80

Authentication:
☒

Username

Password

Save

Figure 11 – Mirroring

By entering the appropriate values, you can have the functions of master and slave simultaneously active, either between two modules that between three or more modules.

OPERATIONS

Enable master ☐ Mirror outputs ☐ Enable slave ☐

LOCAL SLAVE OPTIONS

Apply Mirror rx data to :
☐ IN ☐ OUT

0 1 2 3 4 5 6 7
☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Figure 12 – Mirroring (cont.)

Some of the possible configurations are:

- A master module and a slave: slave replicates on its outputs, the status of the inputs (or outputs) of the master.
- Two of each of the other slave modules: in this case an input that goes to 1 raises the corresponding area in the output.
- Three modules, namely a master, a slave and another slave module, of which the first and the third are masters: in this case, by configuring the master to mirror of the inputs on the second, the second as a

slave of the first and the third master (mirrored outputs), which would have inputs of the first module that switch to status 1 when you close the relay on both the second and the third module.

- The master has the possibility to send the status of its outputs instead of inputs. You can then replicate remotely what the local module (Master) is doing.
- The possibility for the slave to apply the data that comes from the master but not to its outputs or its inputs. In this way, it's as if the master module outputs were connected to the slave inputs, the LEDs of the slave module inputs will light up and the module will behave exactly as if its local input were controlled by the master remote module data.
- The possibility for the slave module to decide which of its channels of input or output should respond to the mirroring commands: in this way, if you did not need to have all the mirrored channels with the master, you can use the remaining channels for any other function.

Please be careful and do not create incompatibilities (eg. Two master with the same slave).

A feature can be used both as master and slave on the eight-channel modules in order to reserve output 7 to report connection errors or timeouts when sending and receiving states from device to mirror: the output can be used locally for activating an optical or acoustic signal. You can also take advantage of the alarm pulse mode and the possibility of reversing the logic, to reset and/or restart a possible network device that is not functioning.

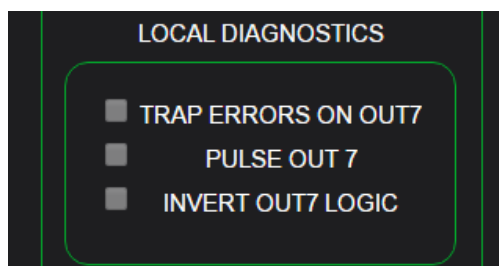


Figure 13 – Mirroring (cont.)

For example, as we mentioned, by inverting the output status 7 and enabling the use of it in case of error, if done correctly, relay 7 would be closed: it will be possible to contact a router or other network equipment. In the presence of a network fault that does not allow the exchange of packets between the two modules, one or both can turn the hardware connected to them off and on: simply program the ON and OFF times with output 7 to allow sufficient time for the defective hardware to restart: if an error occurs in the module will send from the network hardware, and then turn on again, giving it time to restore the connection, at which point the output will remain in the state 7 ON, keeping the broken hardware.

If the malfunction were to continue, the module will continue to reset and restart the hardware to re-establish the network connection.

This last feature is not present on the form 4 + 4 I / O.

The following configuration describes how to set up two Everywhere modules for mutual Mirroring mode.

The mutual mirroring requires that the inputs of an "A" enabled form the output of the "B" form and vice versa.

The image displays two side-by-side web interfaces for the Artec Everywhere system, labeled 'MASTER' and 'SLAVE'. Both interfaces feature a 'Mirroring' section with the following configuration options:

- OPERATIONS:**
 - Enable master: ☒
 - Mirror outputs: ☐
 - Enable slave: ☒
- LOCAL SLAVE OPTIONS:**
 - Apply Mirror rx data to: ☐ IN ☒ OUT
 - Checkboxes 0-7: All are checked.
- LOCAL DIAGNOSTICS:**
 - TRAP ERRORS ON OUT7: ☐
 - PULSE OUT 7: ☐
 - INVERT OUT7 LOGIC: ☐
- REMOTE SLAVE SETTINGS:**
 - Remote IP: 10.0.0.201 (Master) / 10.0.0.200 (Slave)
 - Remote Port: 80
 - Authentication: ☒
 - Username: *****
 - Password: *****

Micro PLC

This feature allows the user to write sequences of actions using the hardware resources of an Everywhere and then execute them in sequence.

The actions include the activation and deactivation of the outputs, the insertion of pauses while executing commands, as well as command execution conditional on the state of the inputs or outputs.

It also includes the ability to set a label to a state and affect command execution by the state of the label value. In this way, the micro-PLC can activate other features of the Everywhere (i.e. sending email), and in turn the Everywhere features may affect the implementation of the micro-plc action sequences.

It requires no particular skill in programming, and indeed there is no need to learn any programming language. The user simply has to select the actions they want to perform, one after the other.

The unique concept, very simply, is to "step." One step is a unit of execution that contains predefined basic actions, for example the excitation or de-excitation of the outputs, the control of the inputs, the execution of

breaks and so on. Each step may contain up to six different actions, and you can program the Everywhere for a maximum of 64 steps.

At any time, you can activate and deactivate the execution of the micro-plc, as well as download the configurations onto a PC in the form of a text file and reload them, for example, onto another Everywhere. From the first step, the actions are executed in order from first to sixth, then switch to the first action of the second step and so on; after the last action of the last step, the cycle begins again automatically and indefinitely.

All execution occurs in parallel to the normal conduct of other features with which, as previously written, the micro-PLC can interact.

Note: the sequential execution of the steps may suffer exceptions if you use the jump instruction, conditional or not, available at every step.

Micro PLC - Edit Mode

When you log on for the first time and navigate to the micro-PLC menu, nothing is set yet, and then shows the edit page, which is the programming interface.

MICRO PLC - EDIT MODE

THIS IS STEP 1
VIEW, EDIT OR ADD ANOTHER STEP : 1 ▼

☐ Enable this step for execution

SECTION 1 : STEP PROGRAMMING

#1: ☐ If label A ▼ is true then go to execute step 1 ▼

#2: ☐ wait here while input input_0 ▼ is ACTIVE ▼

#3: ☐ pause execution for 0 milliseconds

#4: ☐ TURN OFF ▼ output_0 ▼

#5: ☐ set label A ▼ to FALSE ▼

#6: ☐ if INPUT ▼ 0 ▼ is INACTIVE ▼ then go to execute step 1 ▼

SECTION 2: STEP OPTIONS

SAVE CURRENT

DEL CURRENT

DELETE ALL

LABELS

SECTION 3: MENUS

LIST

LOAD

SAVE

START

Figure 14 – Micro PLC

The page consists of two sections and two groups of buttons, referred to as "step options" or "menus". The following line enables us to position ourselves on any of the 64 steps to add, edit or delete it.

To gain access to these functions it is necessary that the checkbox "Enable this step for execution" is selected.

Section 1: Step Programming

This section contains all the operations that can be performed within a single step. Every action, to be carried out, it must first be enabled by checking the Enable checkbox at the beginning of each line.

We describe the individual actions that can be enabled in each step:

1 if label (a-> z) is true then goto execute step (1-> 64)

This action makes a check of the label value selected from the list. If the value is TRUE, the execution will jump to the first action of the programmed step, otherwise the execution will continue with the second action of the current step. It is basically a conditional jump from the value of the label.

2 wait here while input 0-> 7 is active / inactive

If enabled, this action ensures that the selected input is in the state chosen: If this is true then the execution is suspended until the continuation and implementation of subsequent action does not allow the selected input status in the current step .

3 pauses execution for x milliseconds

This action suspends the execution of the micro-plc for the duration included in "milliseconds" field.

NOTE: All Everywhere features continue to function, only the execution of the micro-plc is suspended for the specified time.

4 turn off / on output 0-> 7

This action switches the output selected in the ON or OFF states. ON means that the contacts of the selected output relays are closed.

5 set label a-> z to true / false.

This action sets the value of the label selected to the state indicated. In conjunction with the action # 1, it is useful to perform (or not perform) the actions planned in one step depending on the value of the label.

6 if input / output 0-> 7 is inactive / active / do not care then go to execute step 1-> 64

This action verifies that the currently selected input or output was indeed programmed. If this occurs, then the execution will be transferred to the selected step, instead of continuing to the next step. It's a conditional jump from the value of an input or an output.

If the drop-down menu you select "do not care" instead of "inactive" or "active" then the execution will be transferred unconditionally to the indicated step, whatever the input or output value selected.

Section 2: Step Options

SAVE CURRENT: This button stores the programmed step and switches the view in LIST MODE (see below) to have suffered from a global view of the statements entered so far.

THE CURRENT: This button deletes the current step and, as above, switches the view in LIST MODE.

DELETE ALL: This button erases ALL the connected steps and allows you to start from scratch with programming.

LABELS: This feature, while being accessible only by the Micro-plc function, also has effects outside of it and is active even if the execution of the programmed sequence in the Micro-PLC was stopped.

The function allows you to assign to the first eight labels (A to H and so on) the value resulting from the combination of the logic states of one or more input channels using the AND and OR operators.

For example, if you select in the row for the label "A" plus "in0" inputs and "in1" and you select the AND operator, the result is that the label "A" will be TRUE only if both inputs (in0 and in1) are TRUE (or in an excited state). If the selected operator is OR then it will be sufficient that only one of the two inputs be in the excited state to bring the value of the label to the TRUE state. This function is used to detect particular patterns present at the function block inputs and thus takes appropriate action. For example, an alarm input can be done only if simultaneously propagating another validation input is active, a twilight switch connected to an input may allow the action of a power button only in the evening hours, etc.

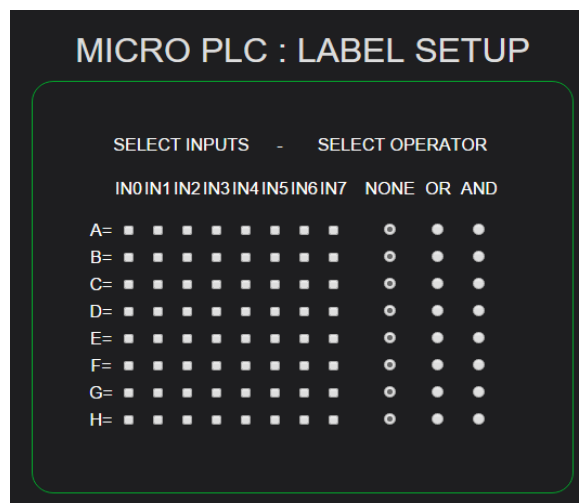


Figure 15 – Label Setup

Section 3: Menus (Micro PLC Schedule Management)

Through this menu you can view the list of outgoing schedules, load, save in .txt format or simply make them leave.

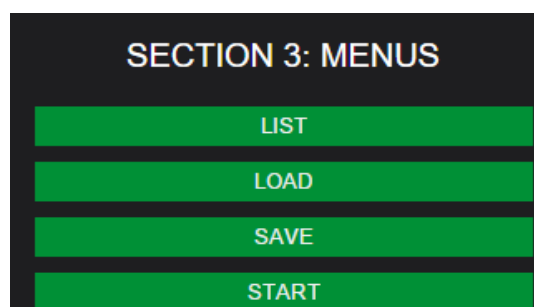


Figure 16 – PLC Management

The options are:

- 1) List: This option switches the display from the Edit mode to LIST MODE. Refer to the appropriate section of this manual for a detailed description of functionality.
- 2) Load: With this option you can load a function that was previously downloaded from an Everywhere to a PC. After loading, the display will automatically switch to LIST MODE.

- 3) Save: This option downloads the programmed function (i.e. the steps), with the name that has been assigned, in the download directory set for the browser you are using.
- 4) Start: starts the execution of the programmed function. When the micro-plc is running, the options in this section are no longer available.
- 5) Back: returns to the Functions menu.
- 6) Home: Return to the Home menu.

As previously mentioned, each configuration can be exported from a module and imported into a different Everywhere, in such a way as to simplify installation configurations for the user.

Micro PLC: List Mode

This mode displays a listing of all the steps included. The actions that have been planned are described using the native language, mostly using a single line of text. This makes it easy to check if the programmable actions match what you require to be executed.

Along with the description of the programmable functions, other information is displayed in this mode.

Starting at the beginning of the page, after the hostname of the form which we are connected, you see that we are now in LIST mode. Subsequently, a box is shown in the state where the micro-plc: Halted(stopped), or Running(running). It also displays the number of steps used, helpful in knowing how many instructions can still be entered.

The following box shows the name of the file that is viewing the page in which the function will eventually be downloaded to your PC as. The default name is "Micro-PLC". The file is a plain text file with a .txt extension. Following are descriptions of connected steps. Each line begins with a button that displays the number of the step where the same description applies: clicking on the button will return you to EDIT mode, the page that will show the step programming, ready for a possible modification.

The passage in EDIT mode (and possible modification of programming) is possible only when the micro-PLC is not running: also when the micro-plc is running the buttons turn red to make clear which mode is micro-plc. If the introduced feature occupies more than 15 steps, the display uses a window with automatic scrolling for clarity.

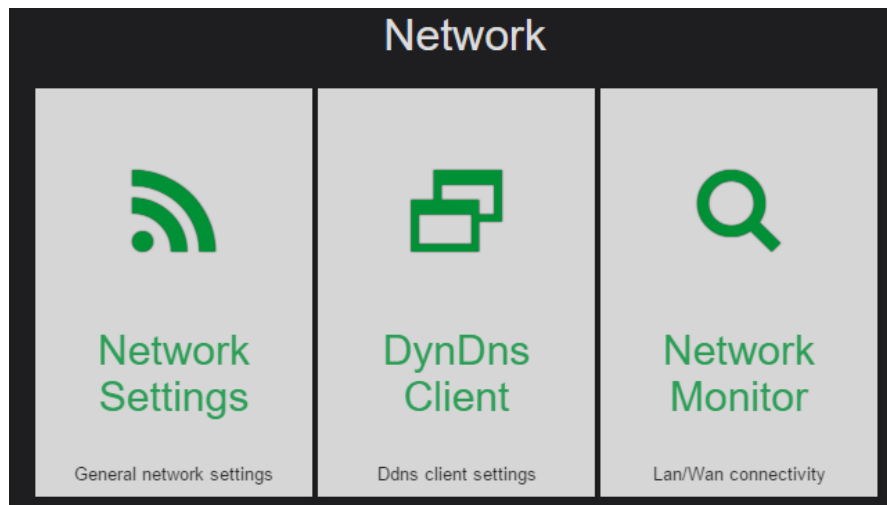
The steps used in configuring a function are then entered iteratively: the writing of the necessary actions, one step after the other; the passage, after saving each step, so LIST and a visual check of the logical correctness of entered shares; the execution of the function for operational verification, and eventual execution to be stopped, the change of incorrect actions, rescue and subsequent replay, until the operation is successful.

The options available in LIST mode are:

- 1) ADD STEP: switches the display in the Edit mode and presents the user with the next empty step that is usable.
- 2) START: starts the execution of the micro-plc.
- 3) SAVE AS: downloads the programmed function in the browser's download directory that you are using to access the Everywhere web pages.
- 4) DELETE ALL: Deletes all all configurations, allowing the user to start from scratch.
- 5) BACK: returns to the Functions menu.
- 6) HOME: Return to Home menu.

Network

In this menu you can set various parameters related to Artec Everywhere's network communication.



Network Settings

Through this menu you define the main parameters to allow Everywhere module to communicate with other devices on the network, or to be reached via a LAN network with a browser.

The screenshot shows a "Network Settings" configuration form with a dark background and white text. The form contains several input fields and a checkbox, all enclosed in a light gray rounded rectangle.

Field	Value
Host Name:	EVERYWHERE
<input type="checkbox"/> DHCP	
IP Address:	192.168.10.166
Port:	80
Gateway:	192.168.10.253
Subnet Mask:	255.255.255.0
Primary DNS:	192.168.10.251
Secondary DNS:	8.8.8.8
Mac Address	00:04:A3:C9:C0:1F

Figure 17 – Network Configuration

Host Name: This is a name chosen by the user that will be displayed on each page, and also in the feedback window (for more details refer to the "CGI command interface for the Ethernet module" manual). It can be useful if you are working on multiple modules at the same time to always have the security of knowing on which module you are working.

DHCP: When this box you can no longer add additional network parameters manually because they will be automatically obtained from the DHCP server that will be available online. If in doubt, consult your network administrator.

Caution: *The dynamic IP address assignment process can take up to 1 minute, in addition to the time required to restart the module.*

IP Address: In the absence of a DHCP server available on the network you will be required to enter a free IP address of your network into this field.

The default IP address of the module is 192.168.10.96

Pay attention to your entry if you do not want to create a network address conflict that will make it impossible to use the devices with the same IP address.

Port: You can specify the port of the web interface communication module, to work around firewall restrictions. By default, the Artec Everywhere communicates over **port 80**.

Gateway: Enter in these fields the values suitable to the network you are connected. If in doubt, refer to your network administrator.

Subnet Mask: Enter in these fields the values suitable to the network you are connected. If in doubt, refer to your network administrator.

Primary DNS: Enter in these fields the values suitable to the network you are connected. If in doubt, refer to your network administrator.

Secondary DNS: Enter in these fields the values suitable to the network you are connected. If in doubt, refer to your network administrator.

Note: If following operations on these parameters no longer able to connect to the module it is possible to perform a procedure to restore parameters to their default values.

MAC Address: *This is the hardware address of the module. Do not change this value if you are unsure of what you are doing. The value shown is unique to each device and normally there is no need to change it. Its modification can cause connectivity problems to the device. The reset of the default values tab also restore this parameter to its original value.*

DDNS Settings

The module can use a Dynamic DNS (DDNS) to be controlled through the Internet when you do not have a static IP address provided by your ISP.

To use this feature it requested that dynamic IP provided by your ISP is available audience.

The module uses the DDNS service manager "Dyndns", which is therefore required to register in **dyndns.com**. The credentials used during the registration process must be inserted in the appropriate fields of the page, as well as the host chosen, so are saved with a click on "Save and set" button.

Figure 18 – Dynamic DNS

As soon as the data is saved, the module will attempt an update network parameters on the dyn.com site manager. The procedure will be repeated if the module detects a change in the public IP address assigned by your ISP.

Network Monitor

This feature allows you to schedule the periodic sending of a ping to a maximum of eight network devices. The destination host can be entered as an IP address (eg. 192.168.10.98) or as a URL (eg. Www.google.it). You can choose how many seconds to send the request, with individually programmable times for each remote host.

Ena	Check this link (WAN address or LAN ip)	Every (seconds)	Fail after (seconds)	If failed do this:	Output or Label	Resume	Link if linked status
<input type="checkbox"/>	www.google.it	20	100	SET Output	output_0	<input type="checkbox"/>	●
<input type="checkbox"/>	192.168.10.186	20	100	SET Output	output_0	<input type="checkbox"/>	●
<input type="checkbox"/>	192.168.10.187	20	100	SET Output	output_0	<input type="checkbox"/>	●
<input type="checkbox"/>	192.168.10.188	20	100	SET Output	output_0	<input type="checkbox"/>	●
<input type="checkbox"/>	192.168.10.189	20	100	SET Output	output_0	<input type="checkbox"/>	●
<input type="checkbox"/>	192.168.10.190	20	100	SET Output	output_0	<input type="checkbox"/>	●
<input type="checkbox"/>	192.168.10.191	20	100	SET Output	output_0	<input type="checkbox"/>	●
<input type="checkbox"/>	192.168.10.192	20	100	SET Output	output_0	<input type="checkbox"/>	●

Figure 19 – Network Monitor

Until the remote device responds to the ping, nothing happens. If the remote device is not responding, even after the time set for timeout, the Everywhere will implement the action that was programmed, which can be the activation or deactivation of any one output, generating a pulse on an any output, the reverse (toggle) status of an output, sending an email, the SET or RESET of any "label".

When the device starts up again (i.e. starts to respond to ping requests), you can program the reverse execution of the action to what is already programmed, or set the status of an output, a new impulse, another output inversion, a new email, or reset the label.

An additional option appears if you choose the same action for all enabled hosts: you can decide which action is performed only when all hosts time out, or perform the action as soon as any of the hosts times out . You can also program the opposite action when the scheduled host responds again to the ping request. Just in case you program the same action for all hosts, you can decide that the action/recovery should be performed as soon as any of the host times out, or to run only when all scheduled hosts time out.

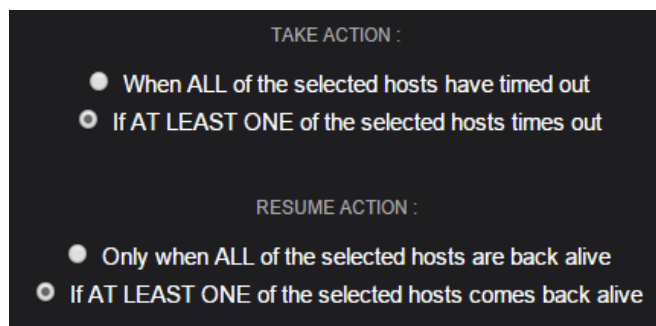


Figure 20 – Network Monitor (cont.)

This feature can be useful when you want to monitor multiple network devices operation and activate an alarm if one or more hosts go offline. The actions can be carried out to restart network equipment, power backup systems, and more.

Another use is to check if the local network has Internet connectivity: simply ping a host like Google or others (that respond to the ping) to make sure. Also in this case, the Everywhere allows you can take the necessary corrective actions.

Settings

Via the Settings menu you can configure and customize an Artec Everywhere at the system level.

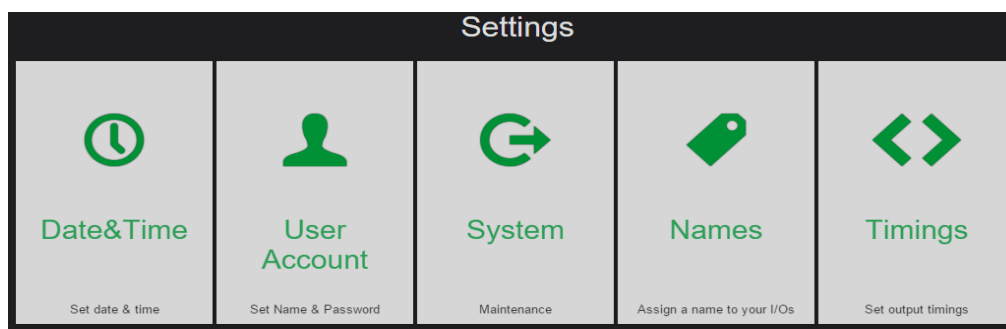


Figure 21 – Settings

Date&Time

In this menu, the user can configure various parameters related to the date, time, enable the automatic time update via NTP server and enable or disable the use of summer time.

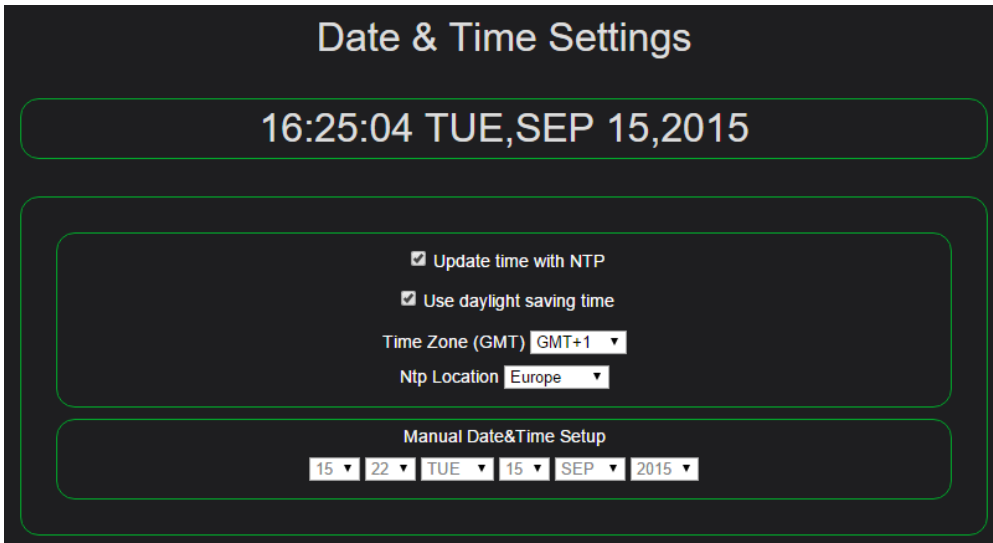


Figure 22 – Date&Time Settings

Date and time must be retained in the Everywhere, so the loss of date and time will cause the module to shutdown. The next reboot, if the update is not enabled via the NTP module, will reset the date and time to 00:00, January 1, 2014.

User Account

Through this menu the user can change the user name and password to access the Artec Everywhere form.

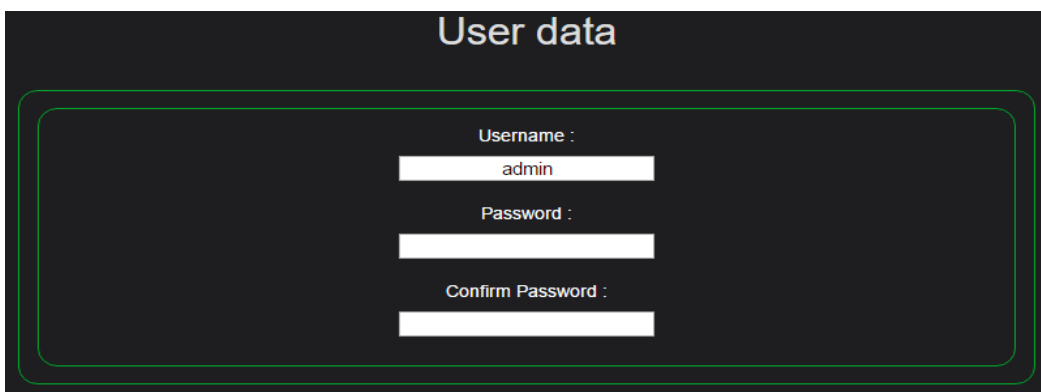


Figure 23 – User Account

System

This menu allows you to make repairs, upgrade, reboot and block Artec Everywhere. You should read carefully the following sections of the manual before proceeding.

System Restore

You can reset the module in two ways, one full and one partial.

Master Reset

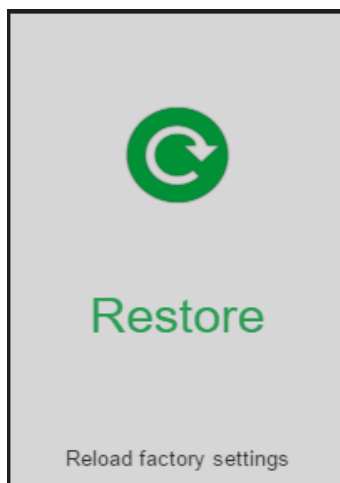


Figure 24 – Reload Factory Settings

By clicking on the "Restore button - Reload factory settings", Arteco Everywhere will be restored to the factory settings, going to lose ALL made configurations.

If the IP address has been changed, your browser will automatically redirect to the default IP address.

If for some reason it loses connectivity with the module, it is possible to reset the operating parameters with a hardware reset procedure.

CAUTION: If you are working on a module through a router, and if NAT is active for the module, restoring to factory parameters can lose connectivity with the module itself.

Partial Recovery

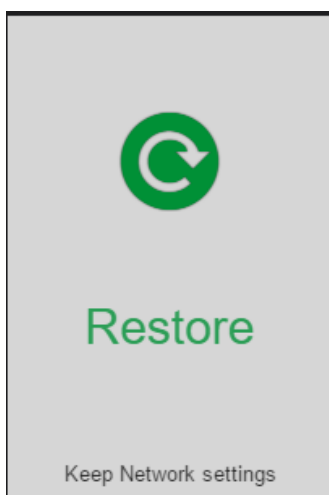


Figure 25 – Reload and Keep Factory Settings

By clicking on the "Restore - Keep Network settings" button, Arteco Everywhere will reset to its factory settings, losing all carried configurations, except the network settings. This ensures you do not lose connection with the module if the network parameters are correct and should not be changed.

Firmware Update

This option allows you to update the firmware of the module if you already have the update program and the new firmware, which will be made available if necessary from Arteco.

The operation must be performed from a Windows PC connected to the same subnet in which the module is.

IF YOU DO NOT HAVE THE NEW FIRMWARE FILES, DO NOT NOT PROCEED

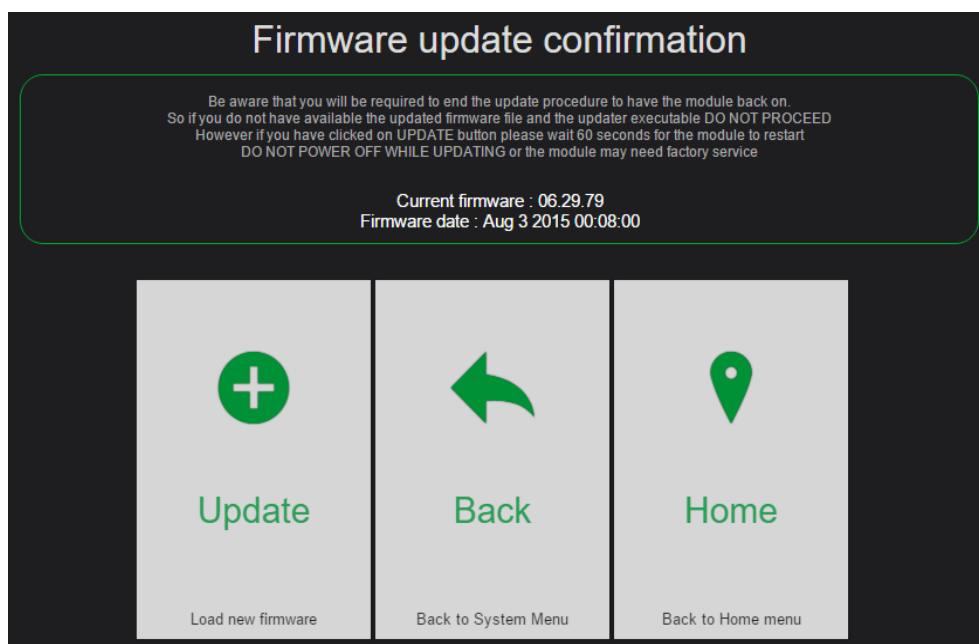


Figure 26 – Update

After clicking the "Update" button, you can load the update file **provided by Arteco**.

Lock

This feature allows you to disable all actions, including CGI commands, which change the outputs. It may be useful to avoid involuntary actions while the Everywhere is operating.

Names

This page allows the user to associate a name to each of the input channels or output, in order to better document what you are activating or which sensors have been activated. Simply replace the default names with a specific name of your choosing. The names will be saved after giving the Save command, saving to the flash memory of the device and displayed when necessary.

The screenshot displays a configuration window titled "Input & output labels". It contains two columns of seven input fields each. The left column is for inputs, labeled "Input 0 Name:" through "Input 7 Name:", with corresponding text boxes containing "input_0" through "input_7". The right column is for outputs, labeled "Output 0 Name:" through "Output 7 Name:", with corresponding text boxes containing "output_0" through "output_7". All fields are outlined in green.

Figure 27 – Names

Calendar

The calendar feature allows the user to program the switch module outputs on certain days and times. The programming may extend for an entire week. Each output can be independently controlled up to four times an hour, every action is programmable with the granularity of a minute. The action can be set, reset, or pulse the toggle output.

Even the labels are controlled while running the calendar. In this way, it is possible to use the calendar and the micro-plc together at the desired time to obtain not only the direct control of one or more outputs but rather the execution of more or less complex sequences, performed by the micro-plc and timed by the Calendar.

Calendar User Interface

The interface consists of several boxes.

Starting from the first has two buttons: Enable and Copy Data.

Enable

This button enables and disables the execution of the Calendar. When the calendar is disabled it is automatically in Edit, allowing you to change the programming. When the Calendar is enabled is running, programming changes are not possible.

When running the Calendar, its' user interface can be used to monitor the operation and check the status of the outputs. While running, the Calendar controls programming and performs the planned actions. While it is running, the current hour is highlighted in red above the boxes for time adjustment.

Copy Data

This button is available only if the calendar is in Edit mode. Its' purpose is to streamline programming by copying configurations from one day to another. By clicking this button the same will turn red, and the message will change to "Paste date." This means that we copied configurations from the current day. To transfer it to another day, just click on the button for that day, which will take the programming of the source. The function is disabled by itself and back to green button with the word "copy data". If you pressed this button by mistake and do not want to transfer the program, simply click on the button again to cancel the action.

Date and Time

The box displays the date and time set for the Everywhere.
Refer to "Date and Time" for further information.

Monday, Tuesday...

These buttons switch the display of the programming for a possible modification is permitted only if the calendar is not running. When it is, the current day is displayed in red.

AM-PM

These two panes contain programming for one day relative to all eight outputs. The first contains programming from 00:00 to 11:59, the second from 12:00 to 23:59.

The programming is set by clicking on the box to program in the timetable. Each box contains 192 boxes. Every day has 48 boxes for each output, and each box represents an hour of programming. Each box is labeled a "time slot".

The relative time starting at each time slot is provided in a row above the first row of boxes.

Enabling Outputs

The box labeled "AM" also features a column of eight checkbox arranged on the left, between the output name and the first time programming box (the one from 00:00 to 00:29).

Each checkbox must be selected if you want the corresponding output to be activated by the Calendar.

Every day has the column Enable checkbox, so each output can be enabled or disabled on a daily basis, without having to modify the inserted programming.

If no checkbox is selected, the Calendar, although running, will not change any output.

Because of the actions available for micro-plc is checking the status of any label, you can write the complex I/O functions to be executed only when the Calendar, through the label, will authorize execution.

NOTE: operations on the Label are always enabled during operation of the Calendar, and are not if disabled.

Time Slot Programming

As previously mentioned, time slots are the base unit within which you can program the behavior of the outputs as a function of time. Each time slot defines a 30-minute time interval. Within this period, the user can select the execution of a maximum of two actions that control the output for any given time slot.

The programming starts by simply clicking on the desired time slot box. The box will be selected and a pop-up window will appear that shows the time and the output associated. It also suggests a default programming that consists of the established output during the 30-minute time slot selected. By clicking on "save" you agree this programming, the window closes and the box remains selected and gray background, indicating that the programming included in the time slot is now standard.

The user still has the option to change the standard programming in a few different ways:

- Changing the minute at which you apply the first selected action.
- By changing the type of action that could be, in addition to "set" by default, "Reset", "Pulse", "toggle" or even "none".
- Enabling the second permissible operation in the time slot, again selecting one between "set", "reset", "pulse" or "toggle".
- If the second action is enabled, change the minute at which the second action for that time slot will be applied.

Any change to the standard programming, saved the configuration, will display the selected box with green background, indicating the presence of non-standard programming.

Cancelling a Time Slot

A time slot is canceled by simply clicking again on the box that identifies it.

By clicking on a gray box (i.e. with a standard programming) will have the effect of deleting the inserted programming, the cell will then present white and unchecked. A popup window will appear for a few seconds that says "time slot deleted".

If you click a program that is not standard instead of a green box, the pop-up window will give the opportunity to keep or delete the inserted programming: if you decide to delete the program does not return the standard white box, or in other words, removing the "check mark", the box will remain with the green background to indicate the presence of a non-standard programming, even if disabled.

The options available in the calendar are:

SAVE: Saves the data of all inserted programming

RESTORE: Returns the state program in which it was before the last SAVE command

BACK: Returns to the menu Settings

Home: Returns to the Home menu

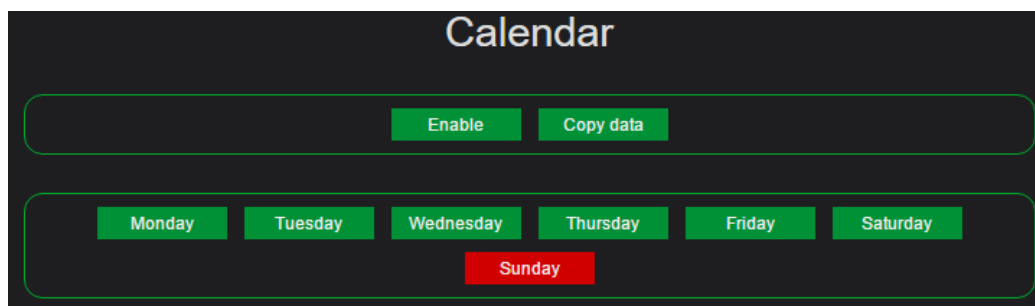
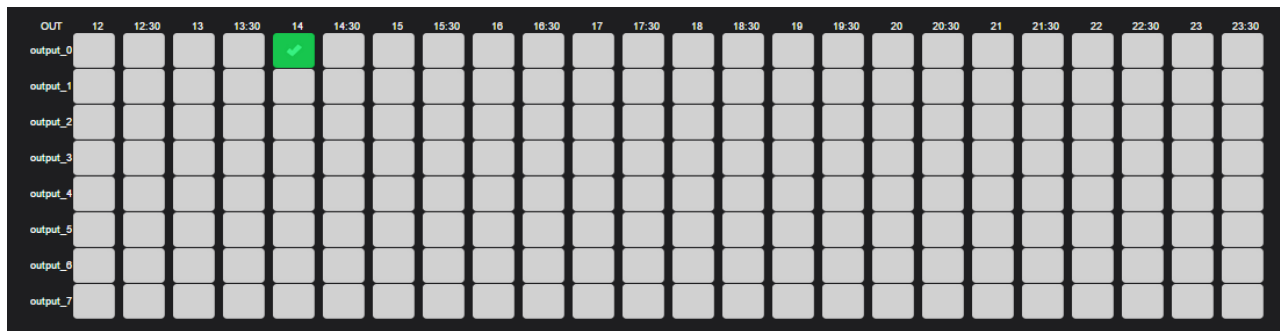


Figure 28 – Calendar: Enable Functions and Copy Data

**Figure 29 – Calendar: Time Slots**

The figure shows a dialog box titled 'OUTPUT 0 HOUR 5' for configuring time slot options. It contains two sections, each with a text input field and a dropdown menu.

Section 1:

- first action at minute:
- select first action :

Section 2:

- second action at minute:
- select second action :

Figure 30 – Calendar: Time Slot Options

Chapter 4 – Reset to factory settings

Remove the rear cover to access the reset button as shown in figure below:



1. Power on the module (be sure that the LED next to the Ethernet connector flashes at 1Hz).
2. Press and keep hold the reset button. The LEDs input 0, input 1, input 2, input 3 will light up in sequence. Once all the 4 input leds will be on, they will start flashing at the same time.
3. Release the button when the input leds flashing at the same time (*) (**). The module will be rebooted with default factory settings::

IP: 192.168.10.96
Username: admin
Password: arteco

(*) if you release the button before the input 2 light goes on, the reset procedure will be stopped.

(**) if you release the button when only the input 0, input 1, input 2 are on but input 3 is still off the module will be rebooted without any modification.

Chapter 5 – CGI Command Interface

The Artec Everywhere module can be controlled only by the integrated web server, even by CGI commands that can be easily sent to any device that has access to the Web.

These commands allow the module to obtain the relevant information, monitor the status of input / output and control the output or other functions available on the module.

The controls can be integrated into a third-party application to interact with the device or can be sent directly from the address bar of any browser (not all browsers fully support these features or displayed correctly the answers provided by the module).

The CGI commands available are:

- 1) Command "info"
- 2) Command "monitor"
- 3) Command "I"
- 4) Command "set"
- 5) Command "action"
- 6) Command "bytes"
- 7) Command "var"
- 8) Command "input"
- 9) Command "seq"
- 10) Command "mirror"

The form requires the http authentication for the execution of commands, so you must authenticate with the correct username and password when the web page requires it and keep an open http session as long as you need to run the commands (basic authentication).

Alternatively you can send the authentication parameters directly in the command string:

<protocol://<username:password@><IPaddress>/<command>.cgi?<parameter>=<value>>

Note: instead of IP address can use the hostname of the form if the service is available on the network.

Example:

If the form at 192.168.10.143 is set to require authentication with the following credentials:

username = admin

password = arteco

to perform the INFO command will need to use the following string:

<http://admin:arteco@192.168.10.143/info.cgi>

“info” Command

The "info" command allows you to get in response a page in XML format showing all the module information. This command can be used to obtain such information in an easily interpretable by another application.

Example:

If the module has the correct syntax of the address 192.168.10.143 info command will be:

<http://192.168.10.143/info.cgi>

This command is never prompted to authenticate.

The reply from “info” command:

```
<?xml version="1.0" encoding="UTF-8" ?>
<root>
  <params>
    <param key="name" value="EVERYWHERE" />
    <param key="external_ip_address" value="0.0.0.0" />
    <param key="ip_address" value="192.168.10.143" />
    <param key="gateway" value="192.168.10.253" />
    <param key="subnet_mask" value="255.255.255.0" />
    <param key="dns1" value="192.168.10.253" />
    <param key="dns2" value="192.168.10.251" />
    <param key="mac_address" value="00:04:A3:56:2F:C4" />
    <param key="input_qty" value="8" />
    <param key="output_qty" value="8" />
    <param key="ddns_username" value="" />
    <param key="ddns_host" value="" />
    <param key="ddns_status" value="The DDNS Service is disabled" />
    <param key="firmware_date" value="Oct 8 2013 00:08:00" />
    <param key="firmware_version" value="06.27.13" />
    <param key="tcp_stack" value="5.42" />
  </params>
  <pins>
    <inputs>
      <input id="0" label="input0" />
      <input id="1" label="input_1" />
      <input id="2" label="input_2" />
      <input id="3" label="input_3" />
      <input id="4" label="input_4" />
      <input id="5" label="input_5" />
      <input id="6" label="input_6" />
      <input id="7" label="input_7" />
    </inputs>
    <outputs>
      <output id="0" label="output_0" />
      <output id="1" label="output_1" />
      <output id="2" label="output_2" />
      <output id="3" label="output_3" />
      <output id="4" label="output_4" />
      <output id="5" label="output_5" />
      <output id="6" label="output_6" />
      <output id="7" label="output_7" />
    </outputs>
  </pins>
</root>
```

“monitor” Command

The "monitor" command allows you to get in response a page format TEXT/PLAIN showing the status of the input / output module.

This type of page is designed to be automatically analyzed by software and can serve to integrate the management of the Ethernet module within user-defined software. The fixed formatting of the page is useful to simplify the analysis and extraction of data by the software.

The status page always starts with the start delimiter page:

--Arteco

Following the declaration of type of data that follow:

Content-Type: text / plain.

Finally it shows the state of each input / output format "NNX" where "NN" indicates the input / output matching and "X" the current value.

NN assume values for the outputs O0, O1, O2, ..., O7 while for input I0 I1, I2, ..., I7.
X will be "L" when the input / output is in the OFF state and "H" if the input / output is in the ON state.
O0L

...
I0H

...
I4L

After the delimiter '--Arteco' follows a 'CRLF' and after the string 'Content-Type: text / plain' followed by two 'CRLF'. At the end of the page, after the state of the last input channel, it is This one last 'CRLF' to indicate the end of the page.

Example:

If the module has the correct address 192.168.10.143 monitor command syntax is:
<http://192.168.10.143/monitor.cgi?check=1> (if already authenticated previously)
[http: // admin: arteco@192.168.10.143/monitor.cgi? check = 1](http://admin:arteco@192.168.10.143/monitor.cgi?check=1) (if authentication is required)

The reply from the “monitor” command:

--Arteco
Content-Type: text/plain

O0L
O1L
O2L
O3L
O4L
O5L
O6L
O7L
I0L
I1L
I2L
I3L
I4L
I5L
I6L
I7L

“io” Command

The “io” command allows you to get in response in PLAIN/TEXT format as for the MONITOR command. The difference is that while the MONITOR command sends the page once for each command sent to CGI, the IO command closes the connection and sends the status page every 15 seconds allowing you to periodically reload the state of the inputs and outputs. Since the continuous connection also allows you to verify that the form and the connection is active.

With the “io” command, if an input or an output change, the status page is sent immediately to report the change to itself. In this case, the subsequent sending of the status will be after 15 seconds from the page change, which always takes place not in the meantime another change of state, which will cause a new transmission.
(To see the syntax of the command, see “monitor” command reply)

The reply from the “io” command:

O4L	...
O5L	...
O6L	...
O7L	...
I0L	...
I1L	...
I2L	
I3L	--Arteco
I4L	Content-Type: text/plain
I5L	
I6L	O0L
I7L	O1L
	O2L
--Arteco	O3L
Content-Type: text/plain	O4L
	O5L
O0L	O6L
O1L	O7L
O2L	I0L
O3L	I1L
O4L	I2L
O5L	I3L
O6L	I4L
O7L	I5L
I0L	I6L
I1L	I7L
I2L	
I3L	
I4L	
I5L	
I6L	
I7L	

(Continued Right)

Note: Each data block that begins with --Arteco is sent each 15 seconds. In the event of a change in new block data, the state of an input/output it is sent immediately. If you send an asynchronous block before the end of the 15 seconds of sending timer resets and the next data block will be sent after 15 seconds from the last.

“set” Command

The "set" command is used to change the status or behavior of input / output module. It allows you to get a reply as an HTML page showing the status of the input / output of the module so you can verify the operation performed.

Because you can perform multiple tasks using the SET command you need to use additional parameters to specify the desired operation. The SET command without any parameter does not perform any operation and provides the response page with the current status of the input / output.

Additional parameters (which can also be used with I command, monitor and action) are:

- 1) set: an output switch in the ON state
- 2) reset: switching an output OFF state
- 3) resetall: resets the command set, toggle, pulse, blink possibly sent and switches all output in OFF

- 4) toggle: invert the current state of an output
- 5) pulse: a pulse output specified
- 6) time1: specifies the output "ON" time. Can only be used in conjunction with the SET parameter
- 7) blink: to switch indefinitely an output between ON and OFF values.
- 8) follow: Activates the tracking function of an output on the respective input

Examples:**Activate an output:**

<http://192.168.10.143/set.cgi?set=n>

Where n is the number of the output to be activated and can take values from 0 to 7.

Example:

<http://192.168.10.143/set.cgi?set=0>

The output 0 will be activated and will remain active until the module does not receive a new command.

<http://192.168.10.143/set.cgi?set=5>

The output 5 will be activated and will remain active until the module does not receive a new command.

Deactivating an output:

<http://192.168.10.143/set.cgi?reset=n>

Where n is the number of the output to deactivate and can take values from 0 to 7.

Example:

<http://192.168.10.143/set.cgi?set=0>

The output 0 will be activated and will remain inactive until the module does not receive a new command.

<http://192.168.10.143/set.cgi?set=3>

The output 3 will be activated and will remain active until the module does not receive a new command.

Invert the status of an output:

<http://192.168.10.143/set.cgi?toggle=n>

Where n is the number of the output to deactivate and can take values from 0 to 7.

With the "toggle" command if the output is in the ON state switches to OFF, conversely, if the company is being OFF switch to ON.

Example:

<http://192.168.10.143/set.cgi?toggle=1>

The output 1 change status

<http://192.168.10.143/set.cgi?toggle=7>

The output 1 change status

Generating pulse on an output (ON time defined by the values entered in the "Timings" page)

<http://192.168.10.143/set.cgi?pulse=n>

Where n is the output number to which you want the impulse, and may take the values from 0 to 7.

The command "pulse" brings the output selected in the ON state, waiting for the time set in the "pulse" and then returns the output in the state of "off".

Example:

Assuming the PULSE TIME value in the "Timings" is 10: (the value is expressed in tenths of a second)

<http://192.168.10.143/set.cgi?pulse=1>

The output 1 will be activated for 1 second, then will return to the OFF state. If the output was already active, the output will be shown in the PULSE TIME OFF after time.

Activate a temporarily output (ON time adjustable):

<http://192.168.10.143/set.cgi?set=n&time1=xxx>

Where n is the number of the output to be activated and can take values from 0 to 7.

Where xxx is the time for which the output will remain ON expressed in tenths of a second.

Example:

<http://192.168.10.143/set.cgi?set=0&time1=10>

The output will be active 0 1 s

<http://192.168.10.143/set.cgi?set=1&time1=100>

The output 1 will be activated 10 seconds

<http://192.168.10.143/set.cgi?set=4&time1=600>

The output will be active 4 1minute

Switch indefinitely output at a given frequency (ON and OFF times defined by the "Timings" menu settings):

<http://192.168.10.143/set.cgi?blink=n>

Where n is the number of the output to deactivate and can take values from 0 to 7.

The command "blink" sent to an output can be canceled by sending that output a "resetall" command.

Example:

Assuming that the values ON TIME and OFF TIME in the menu Timings are 10:20, respectively:

Output_3 ON TIME = 10 (1sec)

Output_3 OFF TIME = 20 (2sec)

<http://192.168.10.143/set.cgi?blink=3>

The output 3 will start a periodic switching remaining ON for 1 second and OFF for 2 seconds.

Activate the function FOLLOW INPUT of an output:

<http://192.168.10.143/set.cgi?follow=n>

Where n is the output number on which activating the follow input and can assume values from 0 to 7.

The command "follow" sent to an output can be canceled by sending that output a "resetall" command.

NOTE: The follow function can be activated only between input and output with the same index. For example, the output 0 can only follow the input 0.

Example:

<http://192.168.10.143/set.cgi?follow=0>

The output 0 will assume the same value present on input 0. If the input is in the ON state, even the output will go to the ON state. If the input switches to OFF, consequently the switch output will follow the input behavior.

Reply:

Hostname:EVERYWHERE
COMANDI
output_0: OFF
output_1: OFF
output_2: OFF
output_3: OFF
output_4: OFF
output_5: OFF
output_6: OFF
output_7: OFF
SENSORI
input0: OFF
input_1: OFF
input_2: OFF
input_3: OFF
input_4: OFF
input_5: OFF
input_6: OFF
input_7: OFF

NOTE: The CONTROLS page refers to the state of the output while in SENSORS that refers to inputs. All input/output settings are displayed by the name set by the user. This page can be useful for home automation applications and in particular, if you send these commands from a mobile device it can display the name and status of the device on which you are acting. This page is transmitted only once for each command sent.

“byte” Command

The "byte" command is used to change the status of the outputs of the commanding form all outputs together. The equivalent of this command would be to perform 8 set.cgi commands of the SET or RESET type, one for each output.

The command "byte" needs an additional parameter indicating the value to be assigned to the outputs. It must be a decimal value from 0 to 255 and the output will be activated for the corresponding binary value. The output 0 corresponds to the lowest weight bits while the output 7 to the highest one.

The response to the command "byte" is a HTML page where you read the value set in decimal. If you do not specify the output parameter, the response will contain the decimal value corresponding to the current state of the outputs.

NOTE: the "byte" command only works if the module is not active mirror function.

Output Parameter Value	Output Values 07-06-05-04-03-02-01-00
000	00000000
001	00000001
...	...
031	00011111
032	00100000
...	...
127	01111111
128	10000000
...	...
255	11111111

Example: If the module has the correct syntax of the address 192.168.10.143 info command will be:

<http://192.168.10.143/byte.cgi?output=255>

<http://admin:arteco@192.168.10.143/byte.cgi?output=255> (if you require authentication)

All outputs will be switched ON.

<http://192.168.10.143/byte.cgi?output=123>

<http://admin:arteco@192.168.10.143/byte.cgi?output=123> (if you require authentication)

Since 123 corresponds to the binary value 01111011 outputs assume the following values:

O0 -> ON
 O1 -> ON
 O2 -> OFF
 O3 -> ON
 O4 -> ON
 O5 -> ON
 O6 -> ON
 O7 -> OFF

Reply:

~~DONE 123

“var” Command

The "var" command is to set the value (true or false) of any label Everywhere in the form as it seeks the command. This allows, with a simple command to start and stop complex I/O sequences programmed into the module with micro-plc whose execution may not depend on the value assumed by one or more labels. It also allows you to interact with all of Everywhere functionality related to the use of the label.

The command syntax is:

Set the status of a label to TRUE:

<http://192.168.10.143/var.cgi?true=a>

<http://192.168.10.143/var.cgi?true=b>

<http://192.168.10.143/var.cgi?true=c>

.....

<http://192.168.10.143/var.cgi?true=z>

Set the status of a label to FALSE:

<http://192.168.10.143/var.cgi?false=a>

<http://192.168.10.143/var.cgi?false=b>

<http://192.168.10.143/var.cgi?false=c>

.....

<http://192.168.10.143/var.cgi?false=z>

The response to the command "DONE" is the string.

“input” Command

The "input" command allows you to excite an input for an Everywhere on which the command is directed. It allows you to obtain the same effect that would occur if the selected input were physically connected to + 12V; along with the corresponding LED lights. No voltage appears at the terminal of the effect for this command input, the use of which is possible even if the input terminal is connected with a physical connection simultaneously: in this case, the module "sees" the OR of the physical signal and the simulated one. This means that if you send the "input" command to energize an input module, it will see the same input always active until it will not send the command to put the same input to OFF, regardless of the input physical drive.

The command syntax is:

Set the status of a TRUE input:

<http://192.168.10.143/input.cgi?ch-set=0>

<http://192.168.10.143/input.cgi?ch-set=1>

<http://192.168.10.143/input.cgi?ch-set=2>

.....

<http://192.168.10.143/input.cgi?ch-set=7>

Set the status of a FALSE input:

<http://192.168.10.143/input.cgi?ch-reset=0>

<http://192.168.10.143/input.cgi?ch-reset=1>

<http://192.168.10.143/input.cgi?ch-reset=2>

.....

<http://192.168.10.143/input.cgi?ch-reset=7>

The response to the command is:

--Arteco Content-Type: text / plain O0H O1H O2H O3L O4L O5L O6L O7L I0H I1L I2L I3L I4L I5L I6L I7L

“seq” Command

The "seq" command allows you to enable and disable the execution of the micro-plc on the form which the command is directed.

The command syntax is:

Set the status of the micro-plc to "running":

<http://192.168.10.143/seq.cgi?start=1>

Set the micro-plc been "halted"

<http://192.168.10.143/seq.cgi?start=0>

Response to controls is the string respectively "START" and the string "STOP".

“mirror” Command

The "mirror" command is used to change the status of the outputs and / or the module input which the command is directed. The command is the same one used internally by the firmware for the implementation of the mirror function.

For this reason, the command will only work if the module Everywhere where the command has directed the "mirror slave" enabled in the "Mirroring" page. The effect of the command depends on the settings on this page, in particular if the module is set up to implement the value received by the command on the output, then these will implement the value received, but if the setting is to receive the value sent with the command, those will in turn be modified. This mask must also be configured in the mirroring configuration page and be programmed by enabling the inputs or outputs that you want to implement the command.

The command "mirror" needs an additional parameter indicating the value to be transmitted, in a similar manner of the previously explained "byte" command. It must be a decimal value from 0 to 255 and the output will be activated for the corresponding binary value. The output 0 corresponds to the lowest weight bits while the output 7 is to the highest one.

The response to the command "byte" is a HTML page where you read the value set in decimal. If you do not specify the output parameter, the response will contain the decimal value corresponding to the current state of the outputs.

NOTE: As mentioned the "mirror" command only works if the module is active mirror function.

Valore parametro output	Valore Uscite 07-06-05-04-03-02-01-00
000	00000000
001	00000001
...	...
031	00011111
032	00100000
...	...
127	01111111
128	10000000
...	...
255	11111111

Example:

If the module has the correct syntax of the address 192.168.10.143 info command will be:

<http://192.168.10.143/mirror.cgi?output=255>

[http:// admin: arteco@192.168.10.143/mirror.cgi? output = 255](http://admin:arteco@192.168.10.143/mirror.cgi?output=255) (if you require authentication)

All outputs will be switched ON.

<http://192.168.10.143/mirror.cgi?output=123>

[http:// admin: arteco@192.168.10.143/mirror.cgi? output = 123](http://admin:arteco@192.168.10.143/mirror.cgi?output=123) (if you require authentication)

Since 123 corresponds to the binary value 01111011 outputs assume the following values:

O0 -> ON

O1 -> ON

O2 -> OFF

O3 -> ON

O4 -> ON

O5 -> ON

O6 -> ON

O7 -> OFF

The above example assumes that in the 192.168.10.143 address form on the "Mirroring" page the slave mirror function is enabled, that the data are applied to the outputs, and that the mask provides all enabled channels.

The command response is a string like:

~~ DONE xxx

where xxx is the number actually reread the decimal value from the module output.

Via Gentili 22, 48018 Faenza (RA) Italia
Tel. +39 0546 645777 Fax +39 0546 645750
www.arteco-global.com

FOR ASSISTANCE
support@arteco-global.com

