

Aquatronica

Instruction Manual 

ETHERNET MODULE Cod. ACQ225



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The information in this manual could be changed at any time without notice at **AQUATRONICA's** discretion.

Any such changes will be made in subsequent editions of this manual.

Please read this manual carefully before using the "ETHERNET Module".


DISPOSAL OF ELECTRIC AND ELECTRONIC PARTS

Pursuant to Article 13 of Legislative Decree No. 151 of 25 July 2005, "Implementation of **Directives 2002/95/CE, 2002/96/CE and 2003/108/CE, regarding the reduction in use of dangerous substances in electrical and electronic equipment, as well as waste disposal**":

Products bearing the barred dustbin symbol must be disposed of separately from other waste. The user must therefore dispose of the product in question at suitable recycling centers for electronic and electro-technical waste, or he/she must turn over the used product to the retailer when buying a new equivalent product, on a one-to-one basis.

Separate waste collection allows used equipment to be recycled, treated and disposed of without negative consequences for the environment and health, and it allows the materials in the equipment to be recycled.

Illegal dumping of the product by the user entails the administrative sanctions stated in Legislative Decree No. 22/1997 (Article 50 et seq of Legislative Decree No. 22/1997).

Ethernet Module Technical Data	
Input Voltage	12VDC 
Current	150 mA
Dimensions	105 (Lu) x 80 (La) x 35 (H) mm





Use the control unit only for the purpose for which it was designed; any other use not provided for in this manual can cause irreparable damage to the control unit.



Do not attempt to disassemble the control unit, as it contains no parts that can be repaired by the user.

Repairs must only be done at authorized centers by qualified personnel. The company is not liable for any damage to things or harm to people if the control unit is tampered with.



Only original **AQUATRONICA** parts, or those it approves, should be connected to the control unit. The use of accessories that have not been approved can lead to damage, fire, electric shock and injury to people.

Position the control unit out of the reach of children to prevent the risk of electric shock. The warranty does not cover failures due to the use of unapproved material.



The control unit is **not waterproof**, so it must not be put in direct contact with liquids. Do not use outdoors.

Do not use flammable liquids to clean it, which could come into contact with the electrical parts and cause a fire.



Package Contents

You will find:

- 1) 1 ETHERNET Module
- 2) 1 100/240 12-Volt feeder complete with 4 universal adapters
- 3) 1 BUS cable
- 4) 1 Network cable
- 5) 1 Instruction Manual



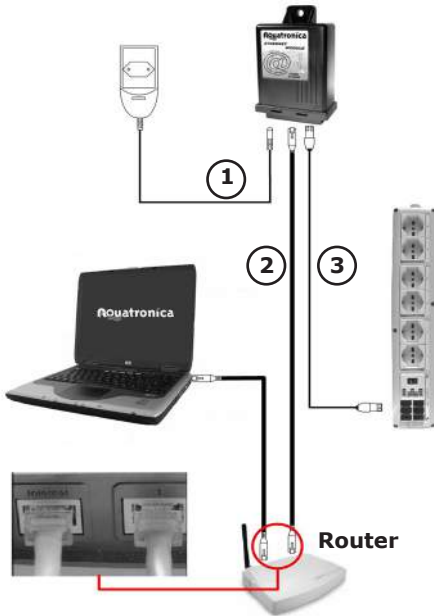
Minimum system requirements

- Basic Aquarium controller system, with controller updated to version 3.0
- PC Serial interface (code Acq220)
- Network switch/router with at least one free port for LAN connection, plus ADSL modem for Internet connection
- PC/LAPTOP with Aquatronica software version 3.0 installed (required for managing e-mail addresses and modifying the password)

Connecting the Ethernet module to a LAN

To connect the Ethernet module to a LAN:

- 1) Connect the Ethernet module to the power outlet (12 Volt).
- 2) Connect the Ethernet module to the router using the provided cable.
- 3) Connect the Ethernet module to the data bus.



RED LED:

- LED on continuously; connection successful
- Blinking LED; connecting...



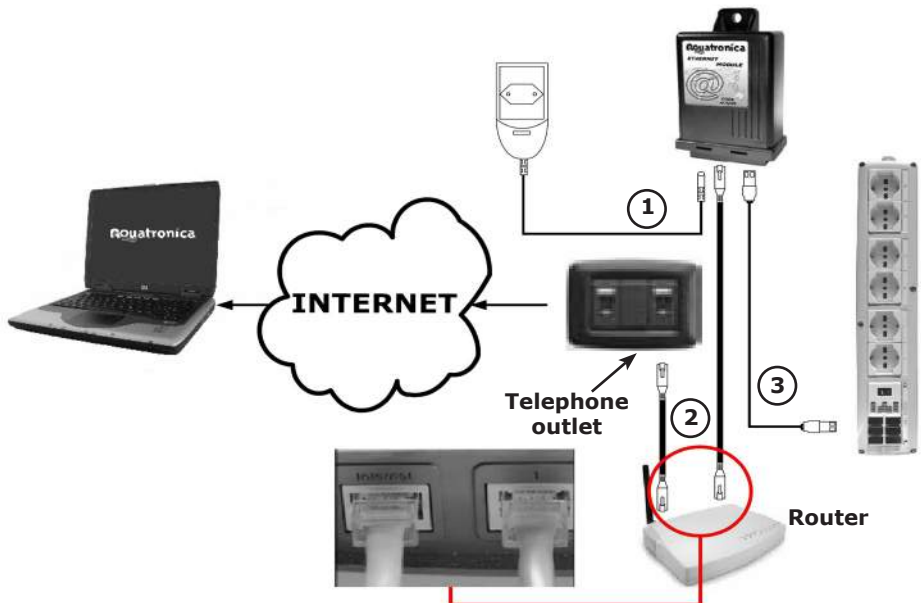
YELLOW LED:

- Blinks when data is being sent.

GREEN LED:

- LED on; Connection successful
- LED off; Connection failed

Connecting the Ethernet module through the INTERNET



Main Menu

New device connected
ETHERNET MODULE

(Fig. 1)

Main Menu

Settings ▲
Power Unit
Agenda
Ethernet Module ▼

(Fig. 2)

ETHERNET Module

Settings
Mail Off
Alarms
About

(Fig. 3)

Settings

Parameters
Addresses

(Fig. 4)

Parameters

DHCP	ON
Speed	100Mb/s
Duplex	Full

(Fig. 5)

After connecting the ETHERNET Module (see chapters, "LAN Settings" and "Internet Settings") to the controller, the message that a new device was connected will appear on the screen (Fig.1).

Unlike when other devices are connected to the controller, the preset name of the ETHERNET module cannot be modified. The Aquatronica Ethernet Module allows the user to connect his or her controller by means of a LAN connection.

The user can then monitor the data of his or her aquarium and program some of the main settings through a Web browser:

Firefox 1.5 (recommended, free download at www.mozilla.com/firefox), Internet Explorer 6.0/7.0, Netscape Navigator 7.0, Opera 9.00).

Alarm e-mails can also be sent to a chosen address in the case of anomalies (can only be set up using PC software and relative serial interface).

To access the "Ethernet Module" menu (Fig. 2):

Main screen ⇨ **Main Menu** ⇨ **Ethernet Module**

The following submenus can then be accessed:

Settings

- **Parameters**
- **Addresses**
- Mail Off/On**
- Alarms**
- About**

Parameters Menu

In this menu three programmable parameters will be displayed (Fig.5):

- **DHCP**: if enabled, allows automatic IP address configuration:

- ON (default): the device automatically obtains a network address.

- OFF: the network parameters can be manually set in the "Addresses" menu.

- **Speed**: the module's communication speed can be set at 10Mb/s or 100Mb/s (default)

- **Duplex**: two different data communication modes can be set:

- Full (default): two-way communication between the Ethernet device and the network

- Half: one-way communication between the Ethernet device and the network

Note: For proper operation of the device, leave the "Speed" and "Duplex" default settings unchanged.

```

IP Address
0. 0. 0. 0
Subnet Mask
0. 0. 0. 0
Default Gateway
0. 0. 0. 0
MAC Address
0 - 60 - 11 - 41 - 45 - 42

```

(Fig. 6)

Addresses Menu

This menu allows manual setting of all of the network parameters necessary for the Ethernet module and to display the data received with DHCP "ON".

- IP Address: IP address assigned to the Ethernet module
- Subnet Mask: subnet identification mask
- Default Gateway: the router's standard IP address used on the LAN; if not used, set all of the parameters at zero.
- MAC Address: identification address of the Ethernet device; modify only if several Aquatronica Ethernet modules are managed on the same Ethernet.

Note: If the MAC address is modified, disconnect the Ethernet module from the feeder for several seconds and then reconnect to reset.

Mail Off/On Menu

This menu allows an e-mail to be sent if certain dangerous conditions, previously set in the "Alarms" menu, occur (Fig.7).

The sending of e-mails is enabled/disabled using the ⇄ keys.

"Mail Off", the sending of e-mail messages is completely disabled.

"Mail On", the Ethernet module will send e-mail messages to the e-mail addresses stored in its memory, when and after an alarm condition occurs and is eliminated.

E-mail addresses may be saved, message text may be modified and a password can be set only through the PC software.

```

Alarms
-----
Temperature
Ph
✓ Redox
Conductivity
Level

```

(Fig. 7)

Alarms Menu

The alarms for e-mail notification can be selected on this menu according to the type of sensors connectable to the power unit.

The type of sensors to be enabled for sending alarm e-mails may be selected using the ⇄ keys.

Enable/disable using the ⇄ keys.

```

Aquatronica
FW Version: x.y

Press any key to continue

```

(Fig. 8)

About Menu (Fig. 8)

For information on the Ethernet module's firmware version.

Procedure for viewing the Home Page

To view the Home Page if the Ethernet module is connected to a LAN:

- 1) If the controller's DHCP is set to "On":
 - Access the module's settings menu as follows:

Main screen ⇨ **Main Menu** ⇨ **Ethernet Module** ⇨ **Settings** ⇨ **Addresses**.

- Note the IP address assigned to the module and enter it in the address field of one of the proposed Web browsers (see chapter, "Main Menu") using the following format: http://module IP address.

- 2) If the controller's DHCP is set to "Off":
 - Use the PC to display the LAN values, following this simple procedure:
 - Click on the "Start" key at the bottom left.
 - Click on "Run...", type "cmd" and click on "OK".
 - In the DOS window that has opened, type "ipconfig" next to C...

- 3) Enter the "Subnet Mask" and "Default Gateway" values in the relative fields of the Ethernet module (see "Addresses" paragraph in chapter, "Main Menu").

In the Ethernet Module's "IP Address" field, enter an IP address, which must be unique and different from the PC/s connected to the network. Normally, only the last 3 digits of the PC's address are changed. For example, if the IP address assigned to the PC is 192.168.1.100, the Ethernet module's IP address could be 192.168.1.95.

- 4) Access the Ethernet module by entering the assigned IP address in the browser's address field.

To view the Home Page if the Ethernet module is connected through the Internet:

- 1) Carry out points 1 through 3 for Ethernet module LAN configuration.
- 2) Configure the router so that requests from the Internet through the router's TCP port (default port 80) are forwarded through the same internal port to the Ethernet Module's IP address. If there are problems connecting to the Ethernet module, the TCP port number can be modified by the user using the PC software.

This is programmed under the router's "Port Forwarding" or "UPnP section" or "Virtual Server Configuration" menu (see example below). See the router's instruction manual for more details.

Virtual Server Configuration				
Public Port (From)	Public Port (To)	Port type	IP Address Ethernet Module	Private Port
80	80	<input checked="" type="radio"/> TCP <input type="radio"/> UDP	192.168.1.95	80

Virtual Server Configuration				
Public Port (From)	Public Port (To)	Port type	IP Address Ethernet Module	Private Port
1024	1024	<input checked="" type="radio"/> TCP <input type="radio"/> UDP	192.168.1.95	1024

- 3) Search for the WAN IP address (IP address assigned by the Internet provider), necessary for accessing the Ethernet module from the Internet, by going to "www.whatismyip.com" using a PC connected to the LAN where the Ethernet module is connected. Save the IP address shown on the PC's screen.

- 4) Access the Ethernet Module, for example from work, by entering the WAN IP address previously saved in the browser's address field.

CONT. →

ATTENTION: If access to the module is modified by changing the port number from 80 to, for example, 1024, the router and the module must be set for accessing the new port and the saved WAN IP address followed by ":" and the new communication port number must be entered in the Addresses field.

For example: http//87.190.1.35:1024

Note: If the IP address is dynamic, follow this procedure:

1) Register for free at "www.dyndns.org", following the instructions. The DYNDNS account provides access to the Ethernet Module with a fixed DNS name even if the IP address is dynamic.

2) After acquiring a DNS account, configure your router under "Dynamic DNS", inserting the "Host Name", "Password" and "User Name" in the appropriate fields.

Dynamic DNS	
Parameters	
Dynamic DNS	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
	www.dyndns.org (dynamic) <input checked="" type="checkbox"/>
Host	<input type="text"/>
User Name	<input type="text"/>
Password	<input type="text"/>
Period	<input type="text" value="99"/> <input type="text" value="Hour(s)"/> <input checked="" type="checkbox"/>

Home Page

Attention: Before connecting to the Ethernet module, check that the controller is displaying the main screen.

When connecting the with Ethernet module, the following screen will appear:



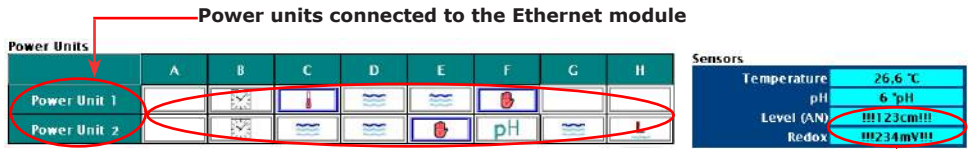
- In the LOGIN field, enter the password previously defined through the PC software: All of the operations described in the paragraph, "Settings Overview", can be carried out; if a password is not entered, the aquarium's operation parameters will be read-only and the status of the sockets cannot be modified.

Attention: The default password is "aquatronica".

- Click on "REAL TIME MONITOR (with icons)": a screen will appear containing:
 - All connected power units
 - The icons relevant to programs associated with the various sockets
 - All sensors connected to the power unit with relevant values (as well as those temporarily disconnected)Alternatively, to avoid problems with certain browsers (see paragraph, "Troubleshooting"):
- Click on "REAL TIME MONITOR": a similar screen will appear with text messages (and a legend) instead of program icons.

Note: The status of the sockets can be modified by only one user at a time; in the case of multiple authentications, an error code will appear. Furthermore, if communication is interrupted between the browser and the server for more than 2 minutes, the user will be disconnected from the Ethernet module and will therefore need to LOGIN again (see paragraph, "Troubleshooting").

Real Time Monitor



(Fig. 14)

This screen shows the readings of the various sensors connected to the controller and any alarms, as shown in Figure 14.

Start Real Time Monitor Stop Real Time Monitor

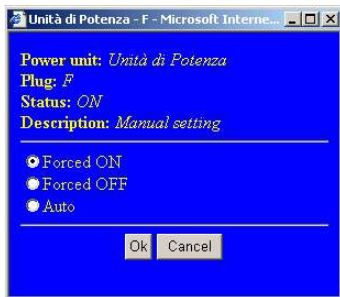
Enables refreshing of the displayed page

Disables refreshing of the displayed page

Real Time Monitor ON

No icons

This button is used to display the screen without icons.



(Fig. 13)

The status and programs associated with the various sockets.

Possible actions:

- The meaning of the icons can be displayed by positioning the cursor on top of them.

- Output programming can be changed using the following procedure:

1) Position the cursor in the middle of the box of the concerned socket and left-click with the mouse.

2) The screen in Figure 13 will appear, where the output's status can be set as follows:

- Forced ON: the corresponding output is set to manual mode ON.

- Forced OFF: the corresponding output is set to manual mode OFF.

- Auto: automatic operation of the program set via the controller for the selected socket is reset.

Real Time Monitor (Without Icons)

Power Units

	A	B	C	D	E	F	G	H
Unità di Potenza	«M»	«>»	«>»	«>»	«>»	«>»		

TP: Timer program | SF: Summer Function | MS: Manual setting | NP: Not Powered | PH: pH sensor program |
 RC: Redox sensor program | L: Level sensor program | T: Temperature sensor program | WE: Wave Effect | TE: Tide Effect |
 LK: Locked manually on | U: Not defined | PW: Power cut | CS: Conductivity sensor program | M: Manual setting

For a description of the various functions, see "Real Time Monitor".

Troubleshooting

Problems	Possible Causes	Solution
<p>Images blink or are not displayed (in particular, with Internet Explorer 6.0)</p>	<p>1) Ethernet is slow or jammed.</p> <p>2) The browser has restrictions regarding the downloading of images (security criteria)</p> <p>3) If the browser uses a proxy server to connect to the network (contact your network administrator), this could block some communication with the Ethernet module.</p>	<p>1) Display the Ethernet page without icons.</p> <p>2) Check that the browser is not using customized security criteria; if so, proceed as follows: Firefox: Tools-Options-Content-"Upload Images" Opera: Tools-Preferences-Web Pages-"Show all images" Internet Explorer: Tools-Internet Options-Security Custom Level Other Browsers: Open the program's Help.</p> <p>3) Set up a direct connection to the Ethernet module, without a proxy server, proceeding as follows: Firefox: Tools-Options-General-Connection Settings-No proxy server for "Ethernet module IP" (Note: separate addresses with commas) Opera: Tools-Preferences-Advanced-Network-Proxy Server-Do not use proxy for the following addresses: "Enter the Ethernet module's IP address" Internet Explorer: Tools-Internet Options-General-LAN Settings-Advanced-Do not use proxy server for [...]-"Insert the Ethernet module's IP address"</p>
<p>"ERROR: YOU MUST ENABLE JAVASCRIPT FOR THIS SITE!" appears on the Home Page</p>	<p>Javascript is not enabled for the browser.</p>	<p>Enable Javascript in various ways, depending on the browser: Firefox: Tools-Options-Content-"Enable Javascript" Opera: Tools-Preferences-Advanced-Content-"Enable Javascript" Internet Explorer: Tools-Internet Options-Security Custom Level-Select "Active" under "Active Scripting" Other Browsers: Open the program's Help</p>

Problems	Possible Causes	Solution
Cannot connect to the Ethernet Module with the Web browser	The assigned IP address is not a public address.	Contact the network administrator for an IP address.
LOGIN impossible and therefore cannot change socket state.	<ol style="list-style-type: none"> 1) Ethernet is slow or jammed. 2) Another user may have already logged in to access the Ethernet module 	<p>Make sure that the other user has logged out of the module. If the other user has simply closed the Ethernet Module page, his user name will expire after 2 minutes so that another user can log in. During this time it will be impossible to access the protected functions of the system.</p>
"INTERNAL ERROR NOT ALLOWED (3)" or "USER EXPIRED GO TO HOME PAGE" appear on the REAL TIME MONITOR screen.	<ol style="list-style-type: none"> 1) The REAL TIME MONITOR has been disabled for more than 2 minutes. 2) The REAL TIME MONITOR has been closed without completing the LOG OUT procedure. 	Try reinserting the password and repeat the LOG IN procedure.
NO CONNECTION flashes in the top left corner of the REAL TIME MONITOR screen.	<ol style="list-style-type: none"> 1) Ethernet is slow or jammed. 2) The network cable has been removed from the module. 	Verify that the Ethernet module is still connected to the network.
The background of the REAL TIME MONITOR page is red.	<ol style="list-style-type: none"> 1) There is a problem with the communication BUS. 2) The PC software has been connected to the Controller system (The PC software disconnects the Ethernet module). 	<ol style="list-style-type: none"> 1) Verify that the Ethernet module is still connected to the BUS line. 2) Disconnect the PC from the Controller; once the PC has been disconnected the Ethernet module will automatically resume operation.

DECLARATION OF CONFORMITY



Standard of reference ISO/IEC Guide 22 and EN 45014

Number of conformity: 001-2007/E

Name of the manufacturer: **Aquatronica division of A.E.B. srl**
 Address: via dell'Industria, 20
 Corte Tegge
 42025 Cavriago (RE) Italy

DECLARES THAT THE ELECTRONIC UNITS

Name of the product: **Ethernet Module**
 Code: **ACQ225**

ARE IN COMPLIANCE WITH THE FOLLOWING PRODUCT SPECIFICATIONS:

FIELD	Directive	Description	References	Test Result
EMC	89/336/EEC	EMC directive	Official Journal of the European Union L139 May 23 1989	applied

THEREFORE THEY ARE IN COMPLIANCE WITH THE REQUISITES OF THE CE MARK

The equipment was checked in a typical working configuration

Place of issue: **Cavriago (RE) Italy**

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The A.E.B. srl legal representative
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