

## MATOS M-310 User Manual

The MATOS<sup>®</sup> M-310 is a standalone monitoring unit that is quick and easy to install and provides most of the premium MATOS<sup>®</sup> Monitoring features in a compact, robust enclosure.

### Step 1:

Install the temperature sensor into the fridge/freezer through an access port or via the door ensuring the access point/wire is sealed and there are no gaps to affect the fridge operations. Connect the end of the probe to the side panel of the M-310 into the socket indicated.

### Step 2:

If the unit has not been pre-programmed at the factory - plug a cross-over cable into the side panel of the M-310 as indicated and connect to your computer.

### Step 3:

Connect the power and plug the end into the side panel of the M-310. The power indicator should light up.

### Step 4:

MATOS M-310 Programming:

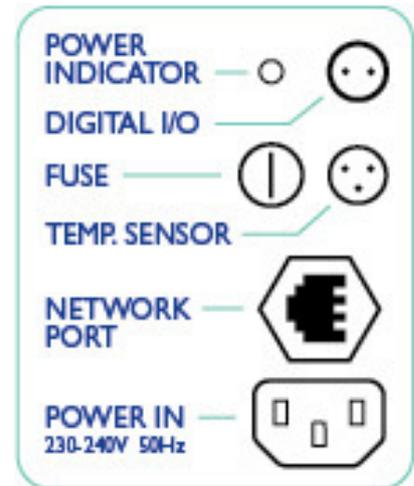
#### REFERENCE SETTINGS:

<b>MATOS IP Address:</b>	192.168.1.2	<b>Login:</b>	admin
<b>MATOS Control Page:</b>	192.168.1.2/index.html	<b>Password:</b>	rollex123
<b>MATOS Setup Address:</b>	192.168.1.2/setup.html		
<b>MATOS System Log:</b>	192.168.1.2/syslog.txt		
<b>MATOS Temperature Log:</b>	192.168.1.2/log.txt		

## 1. ESTABLISHING COMMUNICATIONS

The MATOS M-310 is programmed using a web browser. The first task is to establish communication between a computer and the MATOS unit so that the browser-based configuration can begin. To do this, the computer and the MATOS must be physically connected to the same network and both must have IP addresses on the same network.

There are two ways to set up the computer and MATOS so that they are on the same network. Option A covers changing the IP address of the computer to an address that is on the same network that MATOS is set to by default. Use Option A for Windows Vista. Option B covers changing the IP address of MATOS to an address that is on the same network as the computer.



### OPTION A: ASSIGN A TEMPORARY IP ADDRESS TO CONFIGURATION COMPUTER

MATOS has a default IP address of 192.168.1.2.  
Communications with the MATOS unit may be established by assigning an IP address to the configuration computer that is on the same network as the MATOS [for example, the configuration computer could be assigned to 192.168.1.50].

The following example is for those running Windows.

Enter Local Area Connection Properties for the required computer. Scroll down to and highlight the 'Internet Protocol [TCP/IP]', then click the button labelled 'Properties'.

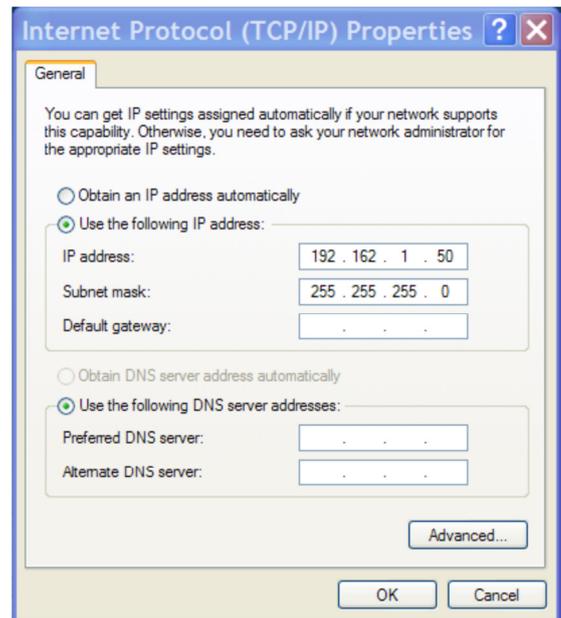
Before making any changes to the network settings write down the current settings so that they can be restored once the MATOS is configured.

Select the radio button labelled 'Use the following IP address' and enter:

IP Address - 192.168.1.50

Subnet Mask - 255.255.255.0

Leave the default gateway field blank. Click OK to apply the new settings.



## **OPTION B: ASSIGN A TEMPORARY IP ADDRESS TO THE MATOS**

If Option A did not work or is not possible, Option B is used to *temporarily* assign an IP address to MATOS without the need to change the IP address of the configuration computer. Note that MATOS will only use this IP address as long as power is maintained. Once power is lost and restored, MATOS will use the IP address assigned in the setup page and not the temporary address assigned here. This means that once communications are established, the desired IP address should be entered into the **NETWORK** setup tab using the browser.

Make sure the MATOS and the configuration computer are connected to the same physical network. This will not work through routers or gateways.

### **WINDOWS:**

Open a Command Prompt (select START, then RUN, then type "cmd").

Type... `arp -s {new IP address} {serial number of the MATOS}`

IP address format is: xxx.xxx.xxx.xxx

Serial number format is: ss-ss-ss-ss-ss-ss

For example, to set a MATOS (with serial number 00:0C:C8:01:00:01) to 10.10.10.40 the following command would be used. `arp -s 10.10.10.40 00:0C:C8:01:00:01`

### **LINUX/UNIX:**

Open a terminal, change to root user (su -, then enter root password).

`arp -s {new IP address} {serial number of the MATOS }`

IP address format is: xxx.xxx.xxx.xxx

Serial number format is: ss:ss:ss:ss:ss:ss

For example, to set an MATOS (with serial number 00:0C:C8:01:00:01) to 10.10.10.40 the following command would be used. `arp -s 10.10.10.40 00:0C:C8:01:00:01`

### **MAC OS X**

Open a terminal, the terminal is in the "Utilities" directory which is in the "Applications" directory.

`sudo arp -s {new IP address} {serial number the MATOS }`

Administrator password is required.

IP address format is: xxx.xxx.xxx.xxx

Serial number format is: ss:ss:ss:ss:ss:ss

For example, to set an MATOS (with serial number 00:0C:C8:01:00:01) to 10.10.10.40 the following command would be used. `sudo arp -s 10.10.10.40 00:0C:C8:01:00:01`

## 2. OPEN CONFIGURATION WEB PAGE

Once communication is established, continue to 'CONFIGURING THE MATOS PARAMATERS'.

If there is no access to MATOS:

- Verify that the MATOS is powered and that the power light is illuminated.
- Check all network connections and settings.
- Contact Rollex Medical for assistance

Make a note of the new IP address of the MATOS unit and record this for future use.

## 3. CONFIGURING THE MATOS PARAMETERS

Check that the MAC Address listed in the main screen matches the MAC Address on the sticker on the front of the device.

### LOGIN

To access the MATOS device your Computer/Laptop IP Address must be in the same domain as the device as per previous instructions. To configure the device enter 192.168.1.2/setup.html into your web browser OR the temporary IP Address assigned in Option B above plus "/setup.html" and press enter. When prompted enter the setup username and password...

- MATOS: admin | rollex123



The screen will then change when successfully logged in to the main screen.

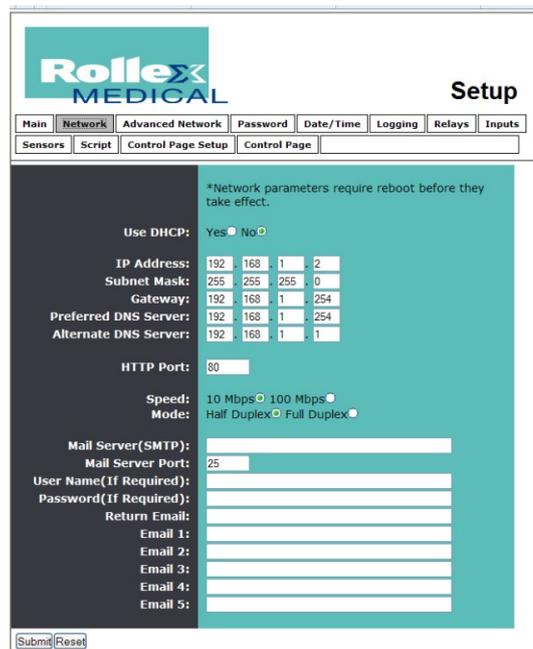
From here you may navigate through the tabs to check or alter settings.

**NOTE:** After changing any data on any page you must scroll to the bottom of the displayed webpage and click 'Submit' to save any changes, navigating away from the page without submitting will reset any changes. The unit must be power cycled for the changes to take effect. This can be done after all pages have been updated.

## NETWORK

The MATOS device is primarily designed to connect as a server so the use of DHCP is not recommended. Instead it should be assigned a static IP Address on the network allocated by your IT Department. The Default Gateway must be changed to suit the IP address of the network. The DNS servers must also be configured so that the device can access the NTP Time Server and be able to send data to the monitoring website. All settings should mirror settings used to configure and connect other devices on the existing IT network.

**NOTE:** Record the new IP Address. After power cycling the MATOS the IP Address will update from 192.168.1.2 to the newly created IP Address.



**Rollex MEDICAL Setup**

Main | Network | **Advanced Network** | Password | Date/Time | Logging | Relays | Inputs

Sensors | Script | Control Page Setup | Control Page

\*Network parameters require reboot before they take effect.

Use DHCP: Yes  No

IP Address: 192 . 168 . 1 . 2  
 Subnet Mask: 255 . 255 . 255 . 0  
 Gateway: 192 . 168 . 1 . 254  
 Preferred DNS Server: 192 . 168 . 1 . 254  
 Alternate DNS Server: 192 . 168 . 1 . 1

HTTP Port: 80

Speed: 10 Mbps  100 Mbps   
 Mode: Half Duplex  Full Duplex

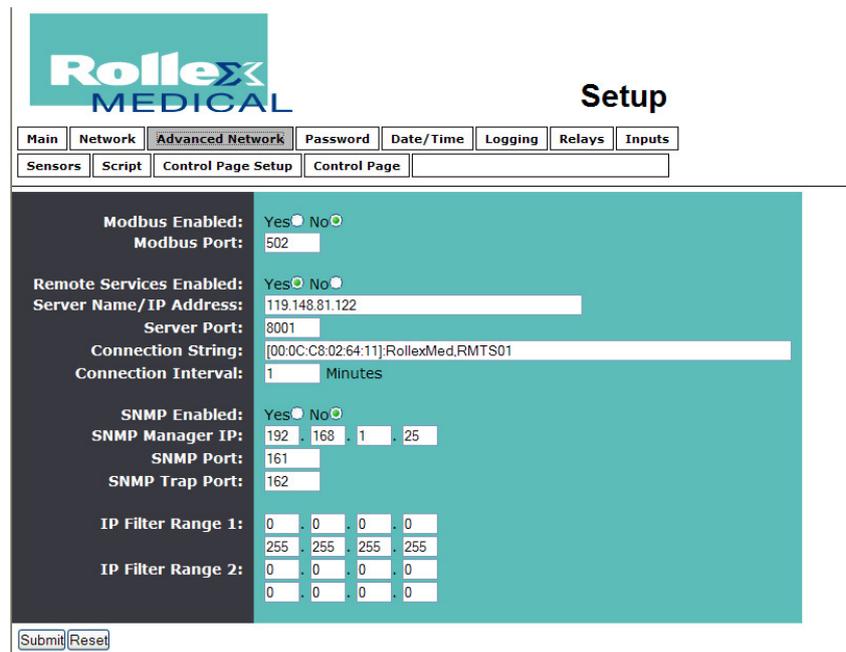
Mail Server(SMTP):  
 Mail Server Port: 25  
 User Name(If Required):  
 Password(If Required):  
 Return Email:  
 Email 1:  
 Email 2:  
 Email 3:  
 Email 4:  
 Email 5:

Submit | Reset

## ADVANCED NETWORK

The Advanced Network tab controls the communications from the MATOS device. Typically this is pre-set with Remote Services 'Enabled' and the Server name set to 'rm1.rollexmonitoring.com'.

The server port is 8001 and the connection string is how the website identifies the device via the unique MAC Address. The connection interval is typically 5 minutes between connections but other advanced settings will trigger further communications with the matosmonitoring.com website.



**Rollex MEDICAL Setup**

Main | Network | **Advanced Network** | Password | Date/Time | Logging | Relays | Inputs

Sensors | Script | Control Page Setup | Control Page

Modbus Enabled: Yes  No   
 Modbus Port: 502

Remote Services Enabled: Yes  No   
 Server Name/IP Address: 119.148.81.122  
 Server Port: 8001  
 Connection String: [00:0C:C8:02:64:11]:RollexMed.RMTS01  
 Connection Interval: 1 Minutes

SNMP Enabled: Yes  No   
 SNMP Manager IP: 192 . 168 . 1 . 25  
 SNMP Port: 161  
 SNMP Trap Port: 162

IP Filter Range 1: 0 . 0 . 0 . 0  
 255 . 255 . 255 . 255

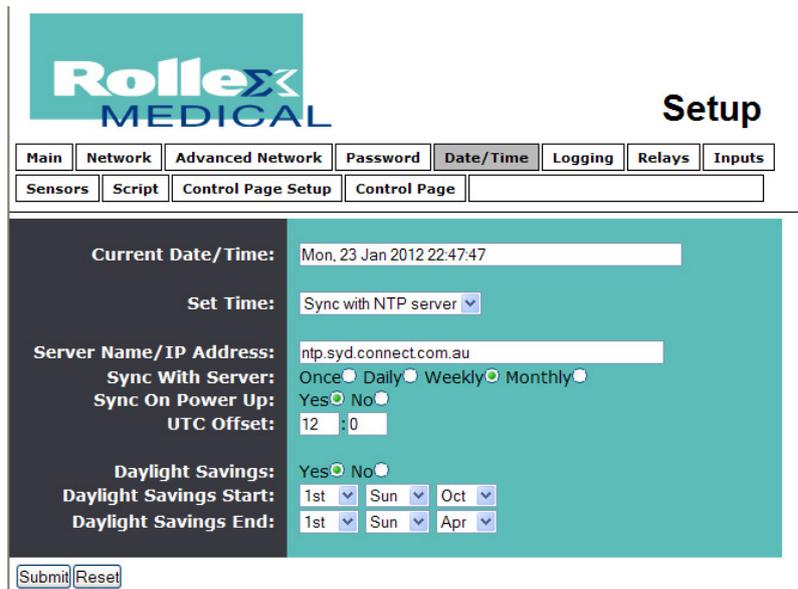
IP Filter Range 2: 0 . 0 . 0 . 0  
 0 . 0 . 0 . 0

Submit | Reset

### SETTING THE TIME ZONE

The time zone should initially be set manually on the MATOS device by navigating to the Date/Time page. By adjusting the set time to manual, a calendar will appear whereupon you can enter the current date and time in 24hr format. Also note whether daylight savings time is currently used in your locality, if so you must enter the correct start and end times for the change then press submit to update the device.

After submitting the correct date and time, change the device back to Sync with NTP server then enter details of a public NTP server (s2.ntp.net.nz for New Zealand) and the correct UTC offset for your locality.



**Rollex MEDICAL Setup**

Main | Network | Advanced Network | Password | **Date/Time** | Logging | Relays | Inputs

Sensors | Script | Control Page Setup | Control Page

Current Date/Time: Mon, 23 Jan 2012 22:47:47

Set Time: Sync with NTP server

Server Name/IP Address: ntp.syd.connect.com.au

Sync With Server: Once  Daily  Weekly  Monthly

Sync On Power Up: Yes  No

UTC Offset: 12 : 0

Daylight Savings: Yes  No

Daylight Savings Start: 1st Sun Oct

Daylight Savings End: 1st Sun Apr

Submit | Reset

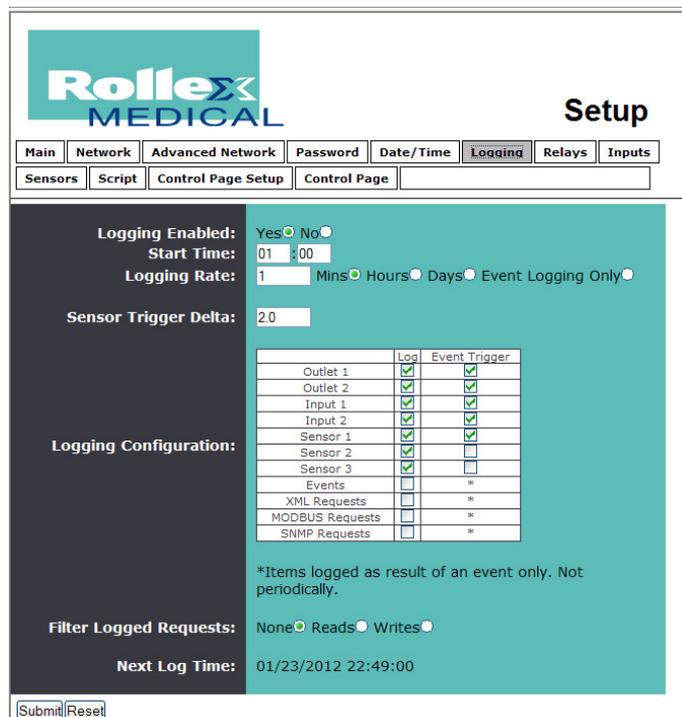
In Sync mode the device (with internet access and a correctly configured IP address, gateway and DNS address) will sync regularly with a NTP time server. This will always be in Greenwich Mean Time (GMT) and you must adjust the offset accordingly for your time zone. The default is to sync once a week and also on powering up the device.

### LOGGING

MATOS is set to log device data typically every 5 minutes with a temperature trigger delta of 2°C. Outlet 1 & 2, Input 1 & 2 and the sensors should be ticked as well as event triggers.

**If the device has been in use it is recommended that you copy the 'log' and 'syslog' files before submitting any changes as any current log will be wiped and will be irretrievable.**

To access these, enter the IP address/log.txt or IP address/syslog.txt into your web browser and save the resulting data. E.g. 192.168.1.2/log.txt or 192.168.1.2/syslog.txt



**Rollex MEDICAL Setup**

Main | Network | Advanced Network | Password | Date/Time | **Logging** | Relays | Inputs

Sensors | Script | Control Page Setup | Control Page

Logging Enabled: Yes  No

Start Time: 01 : 00

Logging Rate: 1 Mins  Hours  Days  Event Logging Only

Sensor Trigger Delta: 2.0

Logging Configuration:

	Log	Event Trigger
Outlet 1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Outlet 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Input 1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Input 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Sensor 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Sensor 2	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Sensor 3	<input type="checkbox"/>	<input type="checkbox"/>
Events	<input type="checkbox"/>	*
XML Requests	<input type="checkbox"/>	*
MODBUS Requests	<input type="checkbox"/>	*
SNMP Requests	<input type="checkbox"/>	*

\*Items logged as result of an event only. Not periodically.

Filter Logged Requests: None  Reads  Writes

Next Log Time: 01/23/2012 22:49:00

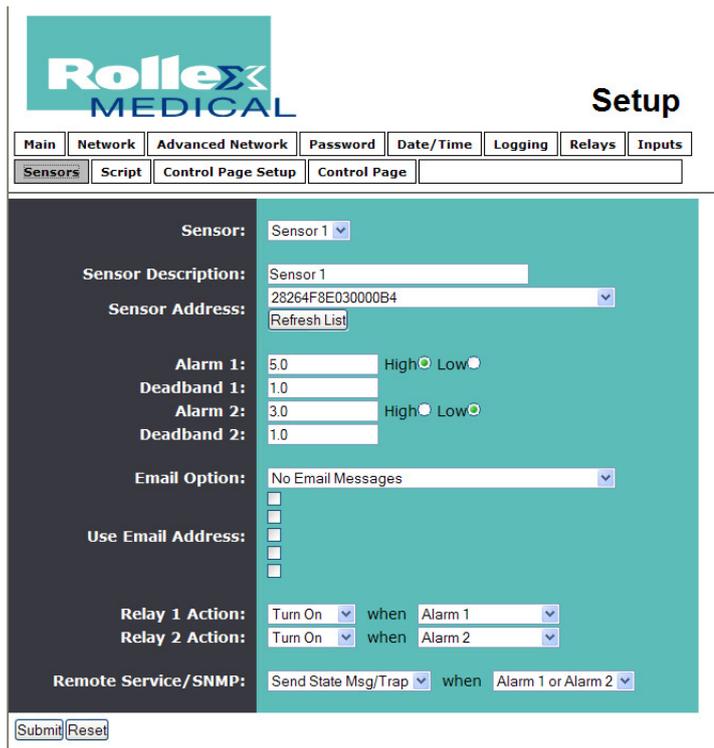
Submit | Reset

## SENSORS

Each digital temperature sensor has its own 16 digit ID and must be detected by the MATOS device then saved. Up to 4 Sensors can be fitted to a single MATOS M-310 and should be connected in parallel.

*Each sensor must be detected and saved individually. Remember to submit each page after making any addition or change. Sensor addresses cannot be entered manually.*

The High Temperature Alarm is set to 8°C; The Low Temperature Alarm is typically set to 2.0°C. If using multiple sensors, be aware of temperature differential within a cabinet and also adjust the alarm points for the 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> sensors accordingly. This may require trial and error.



**Rollex MEDICAL Setup**

Main | Network | Advanced Network | Password | Date/Time | Logging | Relays | Inputs

Sensors | Script | Control Page Setup | Control Page

Sensor: Sensor 1

Sensor Description: Sensor 1

Sensor Address: 28264F8E03000B4

Alarm 1: 5.0 High Low

Deadband 1: 1.0

Alarm 2: 3.0 High Low

Deadband 2: 1.0

Email Option: No Email Messages

Relay 1 Action: Turn On when Alarm 1

Relay 2 Action: Turn On when Alarm 2

Remote Service/SNMP: Send State Msg/Trap when Alarm 1 or Alarm 2

Submit Reset

**NOTE:** There is no delay on the MATOS device between operations, therefore you must consider compressor delay between cycles to equalize and avoid rotor lock.

**When all settings have been submitted, power down and then restart the Matos unit for the new settings to take effect. Your device should now be sending your data to the Monitoring cloud and you can move to the Matos Monitoring website to setup and configure your account with your Matos representative.**

## CONTROL PAGE

The control page allows you to view the MATOS operation via a connected computer on the local network or via remote login. This is be used to verify the temperatures detected on the MATOS digital sensor vs. the displayed temperatures on the refrigerator display. You should bear in mind that the MATOS digital sensor has little delay and is not simulating or compensating to display a vaccine temperature.

**NOTE:** The MATOS IP Address for the above logs will change depending on how the device connects to the Internet.

MATOS	
Too hot override	ACTIVATED
Too cold override	stable
Fridge power supply	ON
Fridge door	OPEN
Sensor 1	21.6 °C
Sensor 2	x.x °C
Sensor 3	x.x °C
Current Time: Mon, 23 Jan 2012 22:50:37	

**Step 5:**

Once the programming is completed, unplug the cross-over cable and connect the Ethernet cable from the network port to the Matos M-310 side panel and restart the M-310 by removing the power cord and opening the fuse for 10 seconds.

The unit should now be programmed and operational and sending data to the Cloud.

**Step 6:**

Visit the Matos Monitoring website ([www.matosmonitoring.com](http://www.matosmonitoring.com)) and login with the supplied account details and configure your account to view your data, add additional users and setup your email and txt alerts.