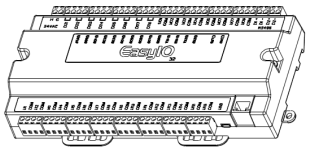
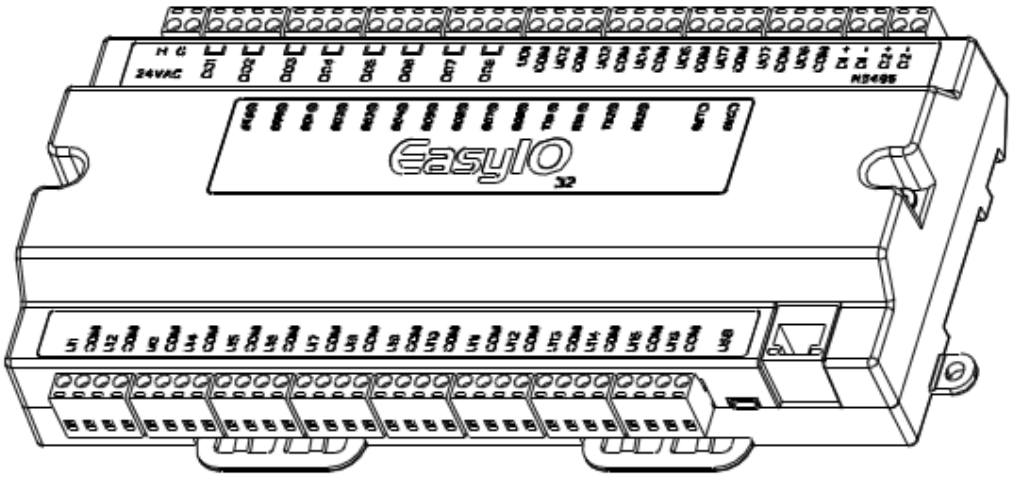
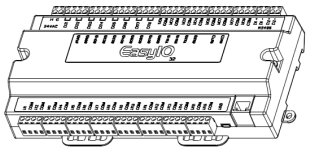


FG32 pre-release user guide





Document Change Log

01st Nov 2012
Document created.

14th Nov 2012
Added new chapter for restoring FG32 back to default apps.
Added in new chapter for Changing IP address
Jumpers setting diagram updated on page 8. Watchdog jumpers settings added.

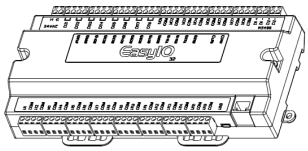
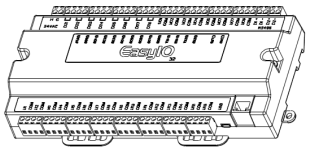


Table of Contents



Introduction

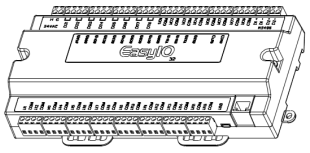
We are getting ready to release our new FG series of Controllers, starting with the EasyIOFG32 DDC controller, product reference: EasyIO-FG-GC-32.

It is equipped with two 32-bit Processors, the first in the Automation industry, with an ARM9 200 MHz Samsung processor, an ARM M3 Cortex for the I/O management and A-D processing, and also with a Linux 2.6 OS for premium performance. Later in 2013 we will be adding Graphics capability to serve up html templates that will be stored on the Micro SD card. BACnet and Modbus will also be added in 2013. TCOM is available now and is encouraged for premium performance with Niagara.

- The Build bootloader can now be carried out remotely. No more manual service button needed is used.
- Firmware upgrading now can be done remotely and without any assistant.
- Firmware upgrading is via ftp client.
- In this user guide is just a pre-release internal use user guide.

Note: Information in this document is accurate at the time of documented. Actual information may change/defer without notice.

This document in only intended for the beta testing process.

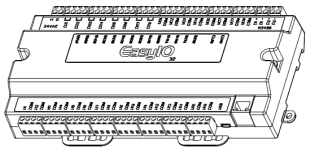


Device Info

Device Info	
Model	EasyIO-FG-32
Description	EasyIO-FG32 Sedona series: 32 I/O Controller
Name	FG32 DDC

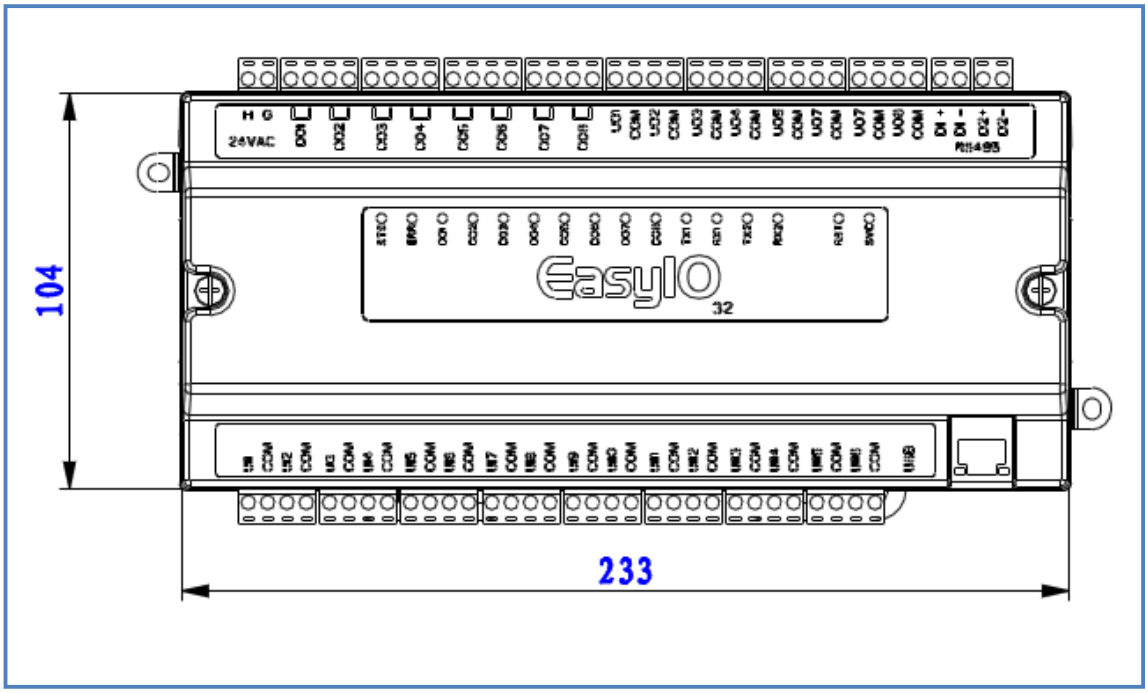
Device Specifications

Mechanical	
Dimensions	233mm x 124mm x 44mm (approx)
Material	UL Approved Plastic
Weight	700g
Electrical	
Power Supply	24V AC +/- 5% or 24V DC +20%/-15%
Consumption	TBC
Operating Temperature	32 to 150 Deg-F (0 to 65 Deg-C)
Storage Temperature	-4 to 150 Deg-F (-20 to 65 Deg-C)
Operating Humidity	10% to 95% relative humidity non-condensing
Communication (Details of EIA-485 will TBC)	
Physical Interface 1 (Port 1)	EIA-485 (BUS A,B) Two-wire, Half Duplex
Modbus Baud Rate	Speed:(9.6K, 19.2k, 38.4K, 57.6K, 115.2K bit/s), Data Bit:(8 bits), Parity:(None, Even, Odd)
Bacnet Baud Rate	Speed:(9.6K, 19.2k, 38.4K, 76.8K), Data Bit:(8 bits), Parity:(None)
Physical Interface 2 (Port 2)	EIA-485 (BUS A,B) Two-wire, Half Duplex
Modbus Baud Rate	Speed:(9.6K, 19.2k, 38.4K, 57.6K, 115.2K bit/s), Data Bit:(8 bits), Parity:(None, Even, Odd)
Bacnet Baud Rate	Speed:(9.6K, 19.2k, 38.4K, 76.8K), Data Bit:(8 bits), Parity:(None)
Ethernet Support	IP, TCP, UDP, ICMP, HTTP,FTP
Application Support	**Sedona (at the moment)and TCOM driver**

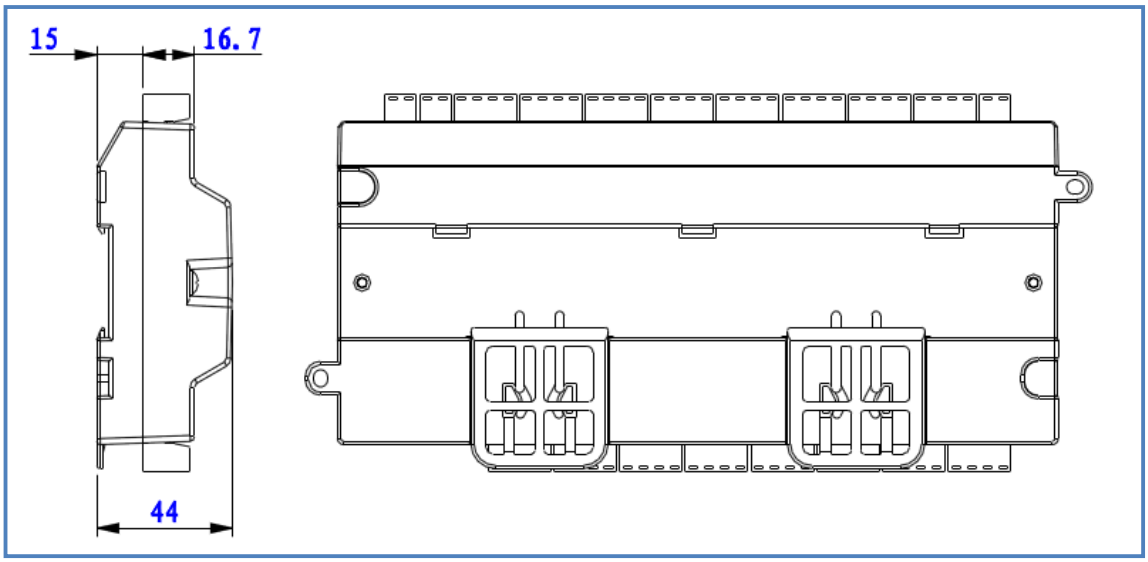


Device Dimension

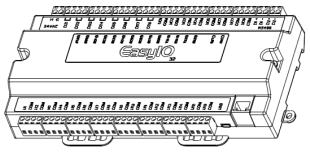
Below are the dimensions for the EasyIO FG32.



Top View. Width including connectors are approx 124mm



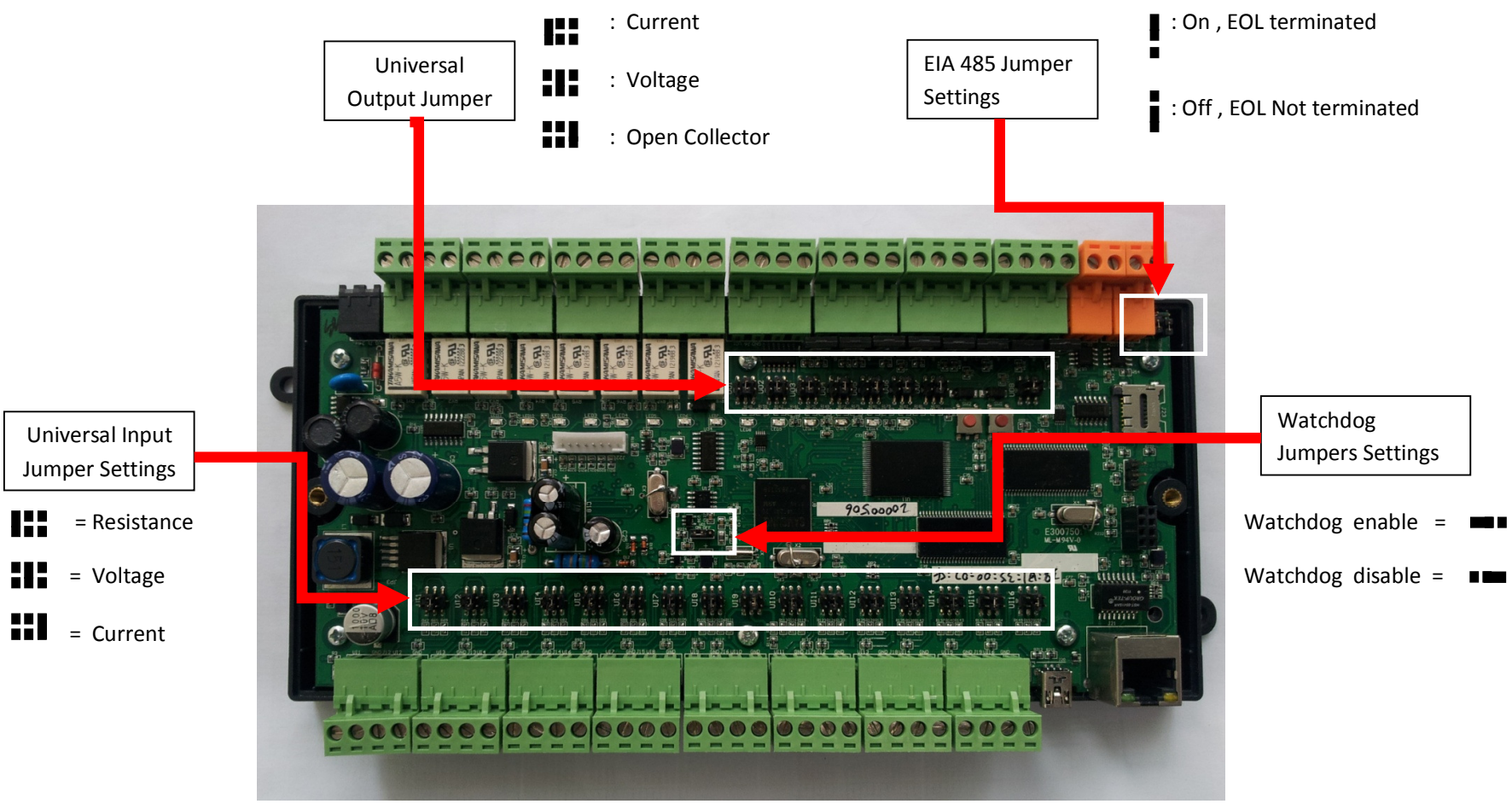
Side view and back view.
Improve DIN rail mounting for easy dismantling.

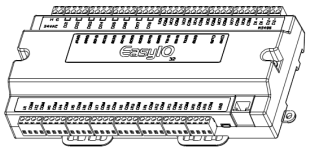


Input / Output Configurations

Input/Output Configuration	
1 - Universal Input	16 Channels
Voltage	0 - 10V DC (+/-0.005V)
Current	0-20mA DC
Resistance	0 - 30K (+/-10 Ohm), 0 - 10K (+/-5 Ohm), 0 - 1.5K (+/-1 Ohm)
Thermistor	10K, 10K Shunt, 1K Balco, 1K Platinum : All (+/-0.01 Deg-C)
UI as Digital Input	Voltage Free Contact
2 - Digital Output	8 Channels
Type	Relay Contacts, SPST NO, 48VA at 24VAC, Pilot Duty
3 - Universal Output	8 Channels (12 bits resolution)
Type	Current: 0 - 20mA, 4 - 20mA (up to 800 Ohm load) Voltage: 0 - 10V Open Collector Output, Max Current Rating: 0.3A Max

Jumper Configurations





Connecting to FG32 Sedona DDC via Sedona workbench

In order to connect to the new EasyIO FG32 DDC, some files are needed. EasyIO FG32 has a different sedona platform, files and kits. These kits are hardware dependent.

Follow the below instructions before connecting to the controller via Sedona Workbench.

Install platform files and kits files

Step 1
Get the required files from easyIO technical support at support@easyio.com

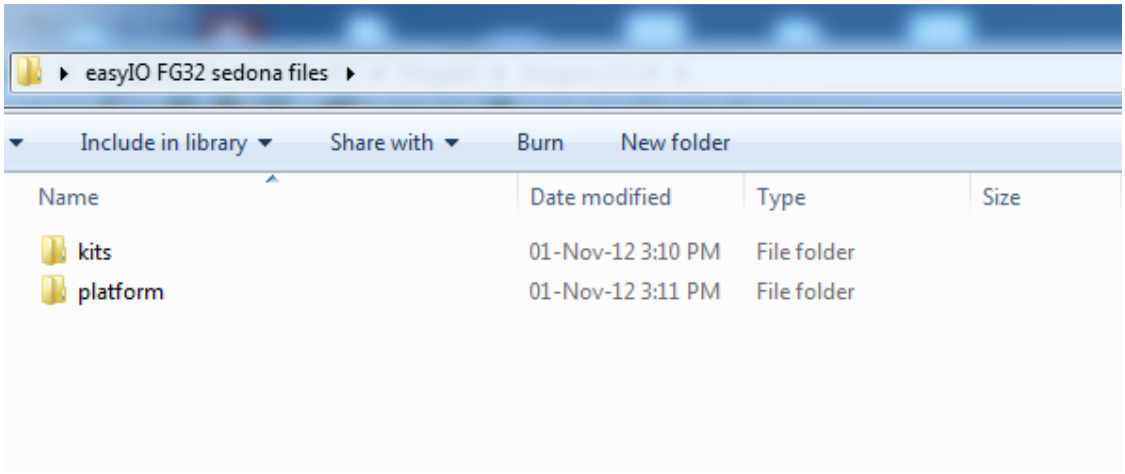
Step 2
Close the workbench.
Open sedona folder in the Niagara installation directory;

Niagara Version	Sedona directory
Niagara Ax 3.5.xx	Niagara\niagara 3.5.xx\sedona\
Niagara Ax 3.6.xx	Niagara\niagara 3.6.xx\sedonaBundles\sedona 1.1.xx\sedona\
Niagara Ax 3.7.xx	Niagara\niagara 3.7.xx\sedona\

Step 3
Copy and merge the 2 folders that obtain from easyIO technical support.

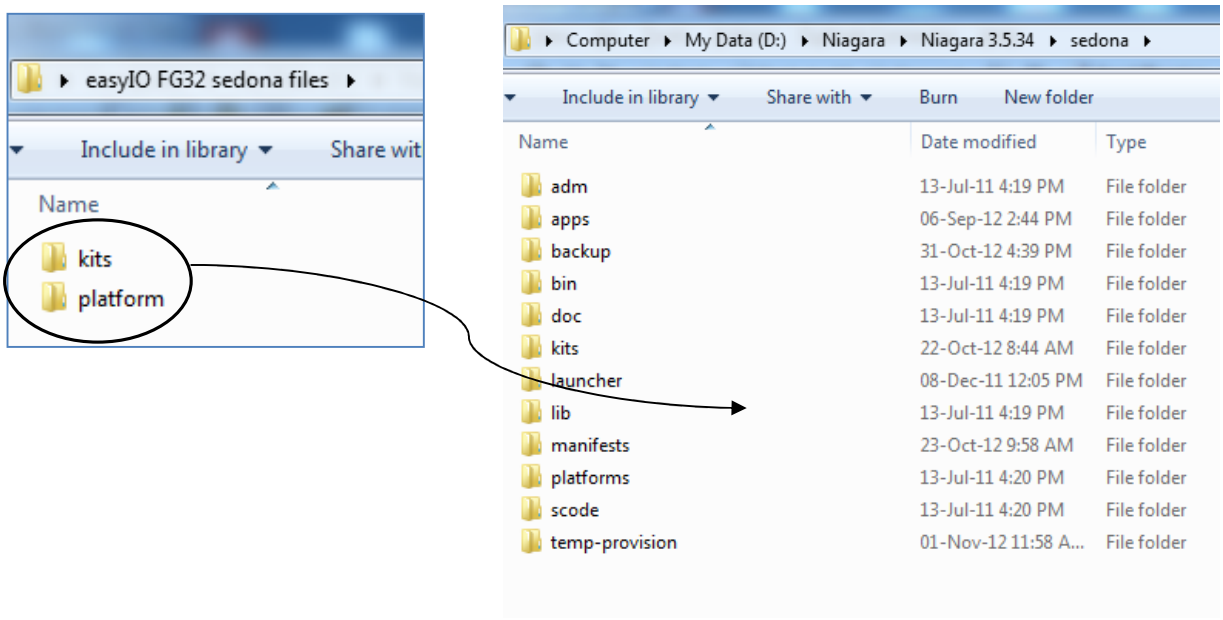
The 2 folders are :***platform*** and ***kits***

For Niagara Ax 3.5 User go to ***step 4.***
For Niagara Ax 3.6 User go to ***step 5.***
For Niagara Ax 3.7User go to ***step 6.***



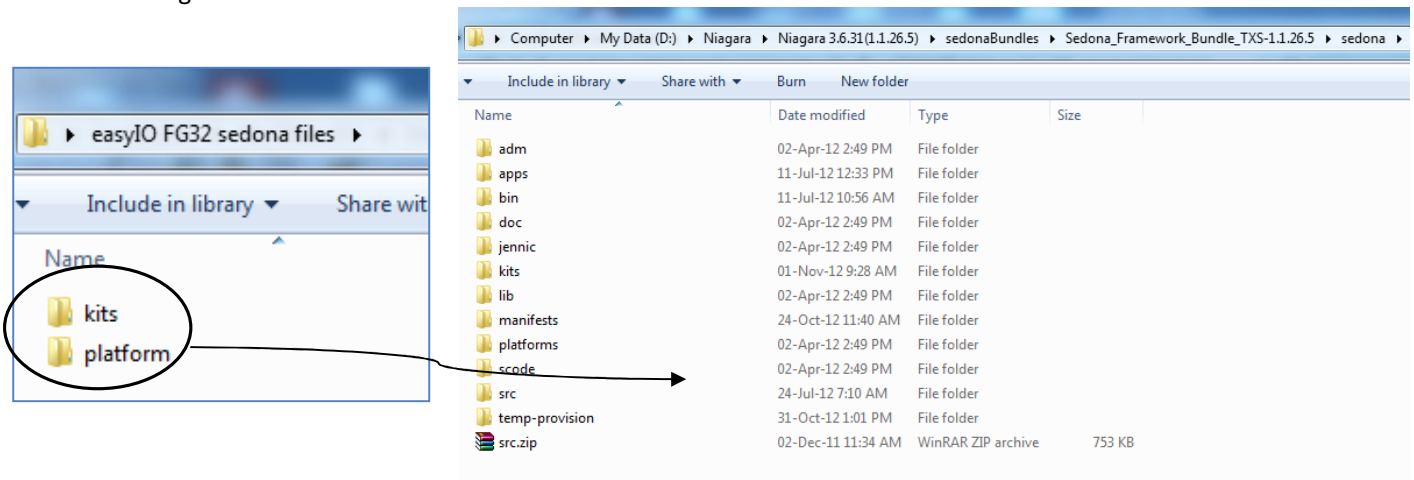
Step 4

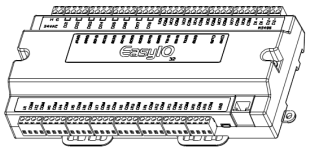
For Niagara Ax 3.5.xx user. Drag and drop it in to the sedona root folder. Hit “Yes” on the pop up to merge the files.



Step 5

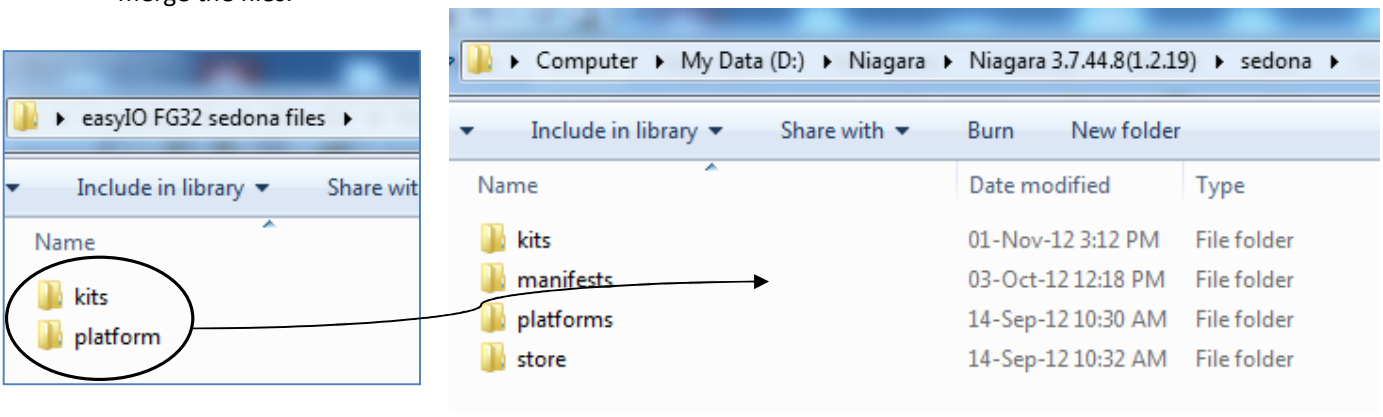
For Niagara Ax 3.6.xx user. Drag and drop it in to the sedona root folder. Hit “Yes” on the pop up to merge the files.





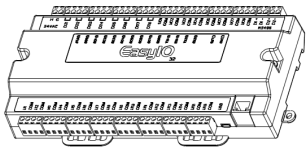
Step 6

For Niagara Ax 3.7.xx user. Drag and drop it in to the sedona root folder. Hit “Yes” on the pop up to merge the files.



Step 7

Re-open workbench and connect to EasyIO FG32 controller.



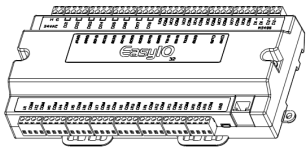
Login Details

EasyIO FG32 details are as below.

Sedona Login
Username : admin
Password : <no password>

Default IP address : 192.168.10.11
Default Subnet : 255.255.255.0
Default Gateway : 0.0.0.0

Note :
In order to login, the host PC (laptop) has to be in the same subnet.
Example:
IP address : 192.168.10.123
Subnet : 255.255.255.0

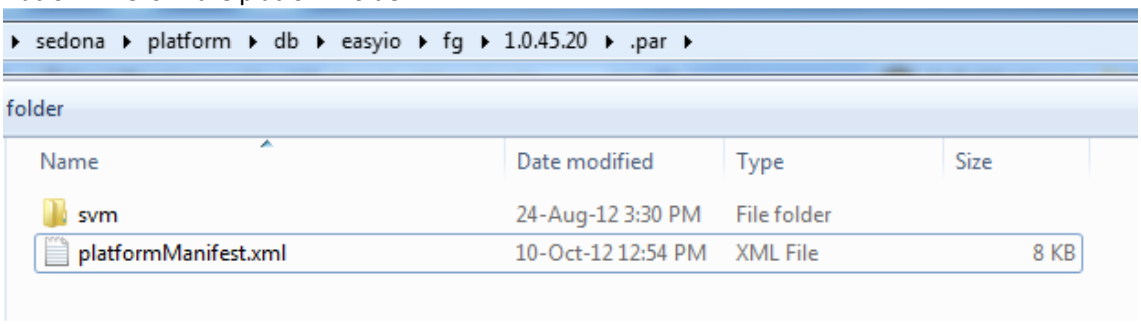


Troubleshoot

In order to make sure all the files are copied correctly into the directory, follow below checklist to verify all the files are in place.

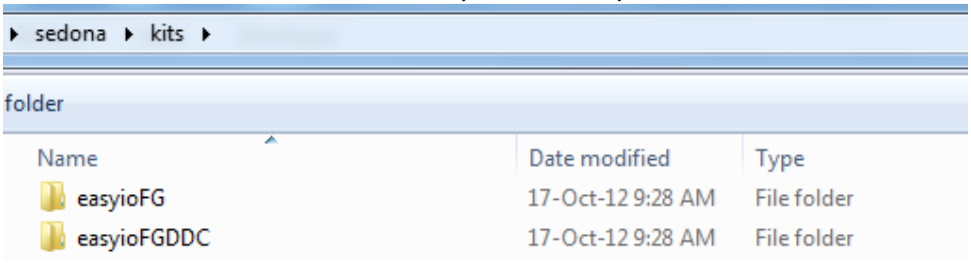
Checklist point 1.

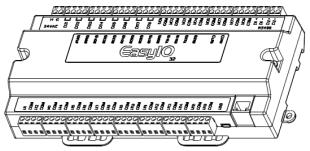
Platform file is in the platform folder.



Checklist point 2.

2 additional kits are in the kits folder. *easyioFG* and *easyioFGDDC.*

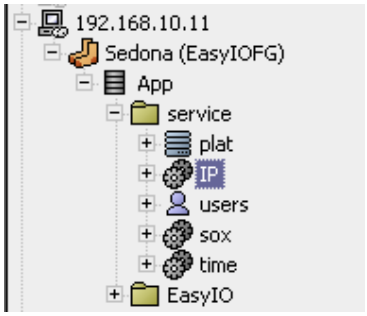




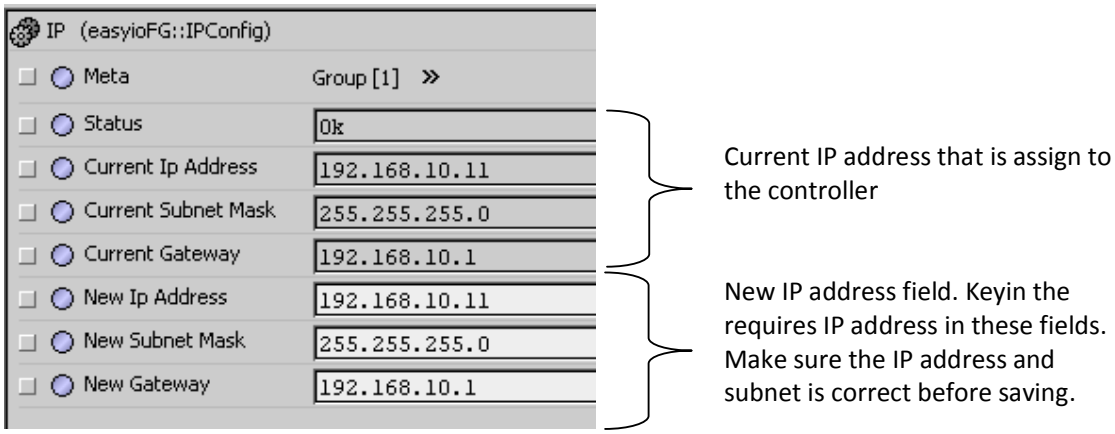
Changing IP address

By default the controller IP address is at 192.168.10.11.
Changing the IP address can only be done via sedona workbench at the moment.

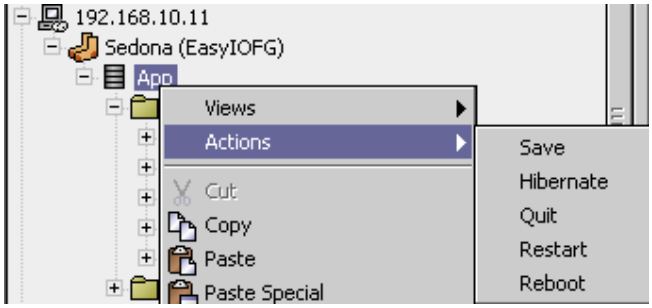
Step 1
Login to the FG32 via sedona workbench. Locate the object *"IP"* under the sedona service folder.



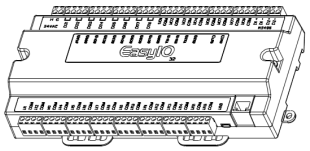
Step 2
Go into the property sheet of the "IP" object.



Step 3
Save the sedona apps and cycle power.



Step 4
Reconnect to the sedona via Sedona workbench with the new assigned IP address.



Restoring FG32 back to default apps

At the moment, there are 2 ways to restore the sedona apps for FG32 controller.

The first way is where you could still gain access to the controller via sedona workbench. By manually selecting all the objects and delete it. The "*SAVE*" action is needed.

Then a reboot or restart of the VM will erase all the objects in the sedona apps.

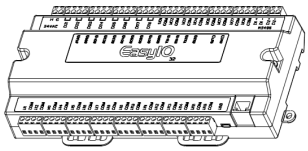
The second way of restoring the FG32 back to default apps is via ftp client software. This way can be use as well if the FG32 sedona VM is not connectable and the controller keep rebooting due to some incompatible sedona apps loaded. When this happen, the watchdog will kick in and will not allow the sedona VM to boot at all, hence a rebooting cycle will occur.

Note :
A easyIO 30P sedona apps CANNOT be loaded into the easyio FG32 as the sedona apps from a 30P backup is hardware dependent. Doing so will corrupt the FG32 sedona VM and the controller will keep rebooting the sedona VM, hence the controller is not accessible via Sedona Workbench.

If the rebooting cycle occurs, the status LED will blinks for fast for a few times then light up steady for approx 10 seconds.

If the above note happen, follow the below steps to regain sedona connection. Below steps can be use for restoring the FG32 to default apps as well.

Email to support@easyio.com to request for the FG32 default apps.



Step 1
Refer to page 8, jumpers settings locate the "*watchdog jumpers settings".* Disable the watchdog by shorting pin 2 and 3.
If the watchdog is disable, the device should be able to run the ICMP command (Ping).

Skip step 1 and step 2 if the controller is not in rebooting cycle mode. Refer to above note for rebooting cycle mode.

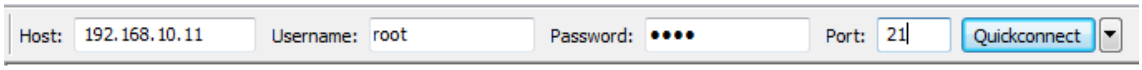
Step 2
Power off the controller and let it discharge for about 5 seconds and power it up again. The rebooting cycle will end. The controller will boot up and the status LED will blink approx 2 blinks per second with a short pause.

Step 3
Open any ftp client software, in this case "filezilla".

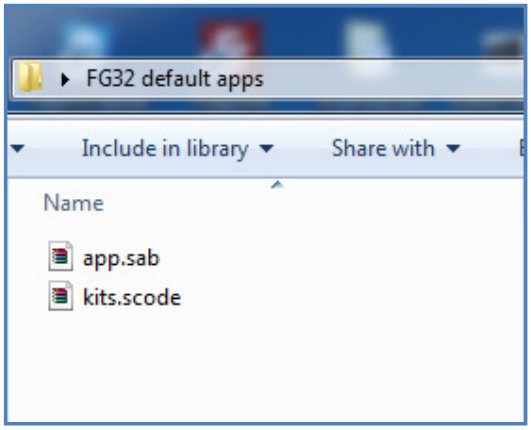
Login details to FG32 build in FTP server as below;

IP address : *this is the last IP address that the FG32 had. Default is at 192.168.10.11*
Username : *root*
Password : *1234*

Port : *21*

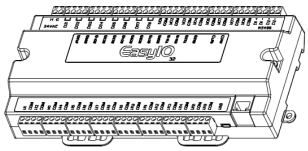


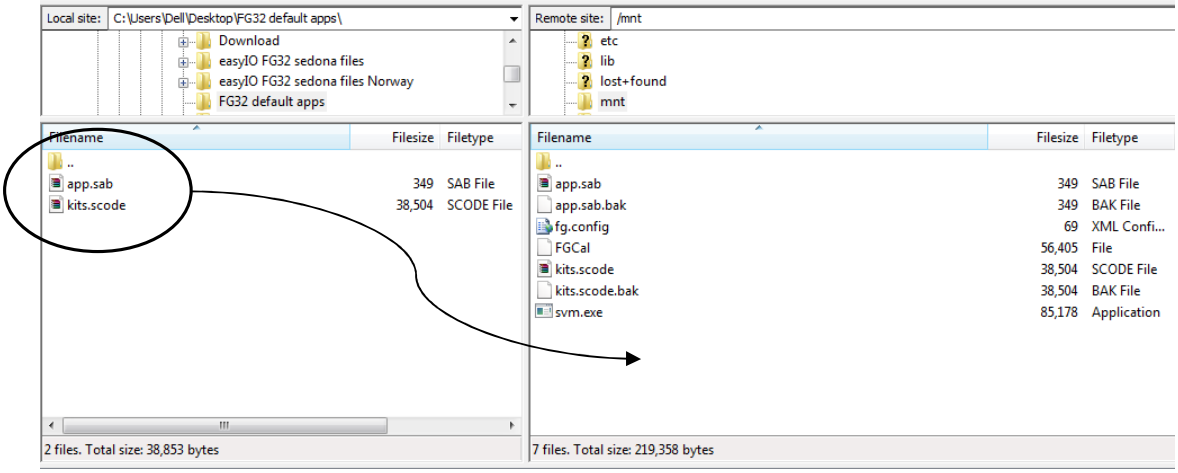
Step 4
Unzipped the backup file email by easyIO tech support.



Step 5
Transfer the app.sab and kit.scode in to the FG32 "mnt " folder. MNT folder is at the root of the FG32 directory.

Overwrite the existing files in the FG32.



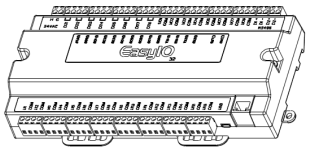


Step 6

After transfer is successful, cycle power of the controller and re-enable the watchdog jumpers(refer page 8).

Step 7

Connect to the FG32 via sedona workbench. If above steps done correctly, sedona workbench connection will be good.



Technical Support

For technical support issues please contact technical support person as below ;

Email :support@easyio.com