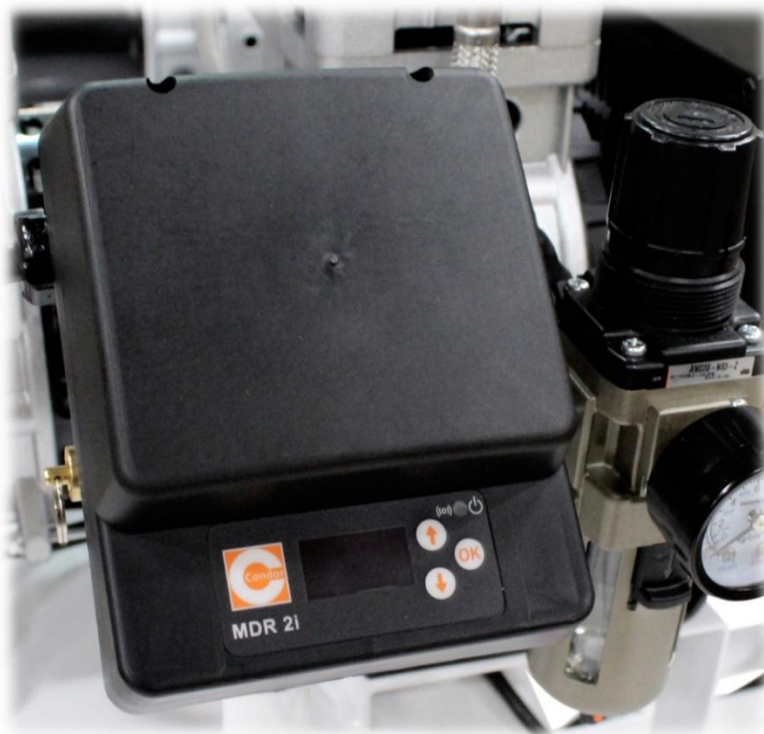




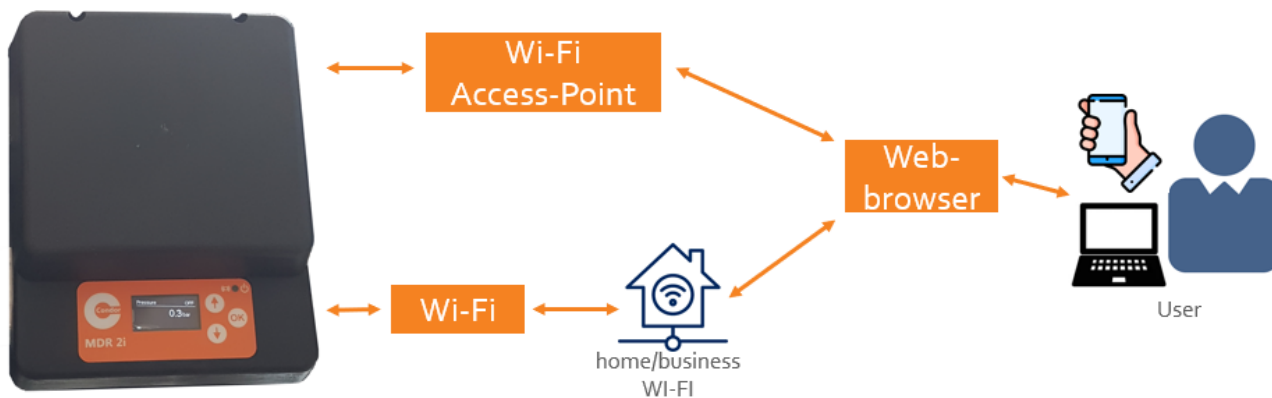
SMART CONTROLLER MANUAL



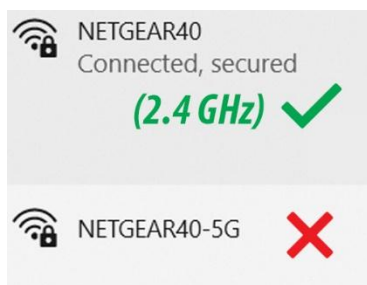
MDR2i Digital Smart Controller (Digital Pressure Switch) Guide

MDR2i OLED Network Connectivity Overview Options

- **AP-Mode (Access Point):** Direct Connect via WiFi – See **Page 4**.
- **ON (Station Mode)** Network Server via WiFi IP Address – See **Page 7**.



NOTE: 2.4 GHZ WIFI CONNECTION ONLY SUPPORTED (5G is not supported).

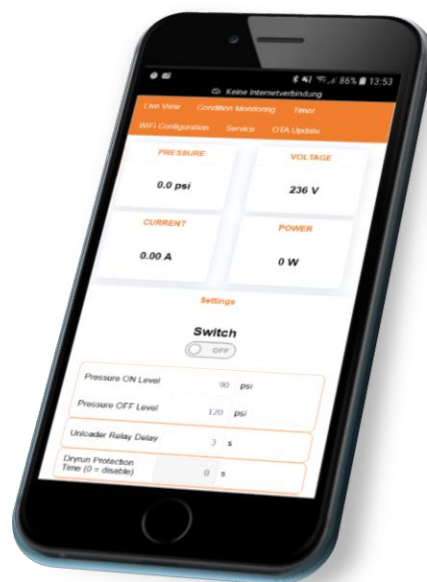


i.e.

Air Compressor models which feature the MDR2i OLED Smart Switch may be connected to mobile phones, tablets, notebooks, or computers. The switch can be used as an access point or can be connected to a Wi-Fi network (via **2.4 GHz** connection).

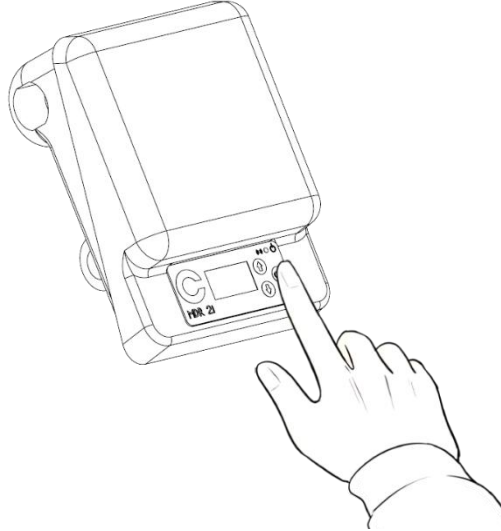
This allows many air compressor features and parameters to be entered and controlled comfortably. Furthermore, remote monitoring is also possible.

NOTE: Configuration using a standard web browser is the easiest & fastest way to connect to the air compressor (see page 4).

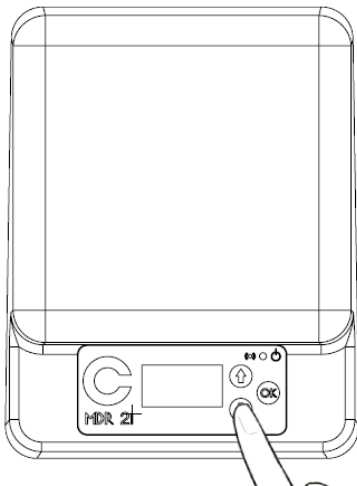


I - TURN ON/OFF

HOLD the  button for **4 seconds** to turn Air Compressor ON and OFF



II - FEATURE SELECTION/EDITING

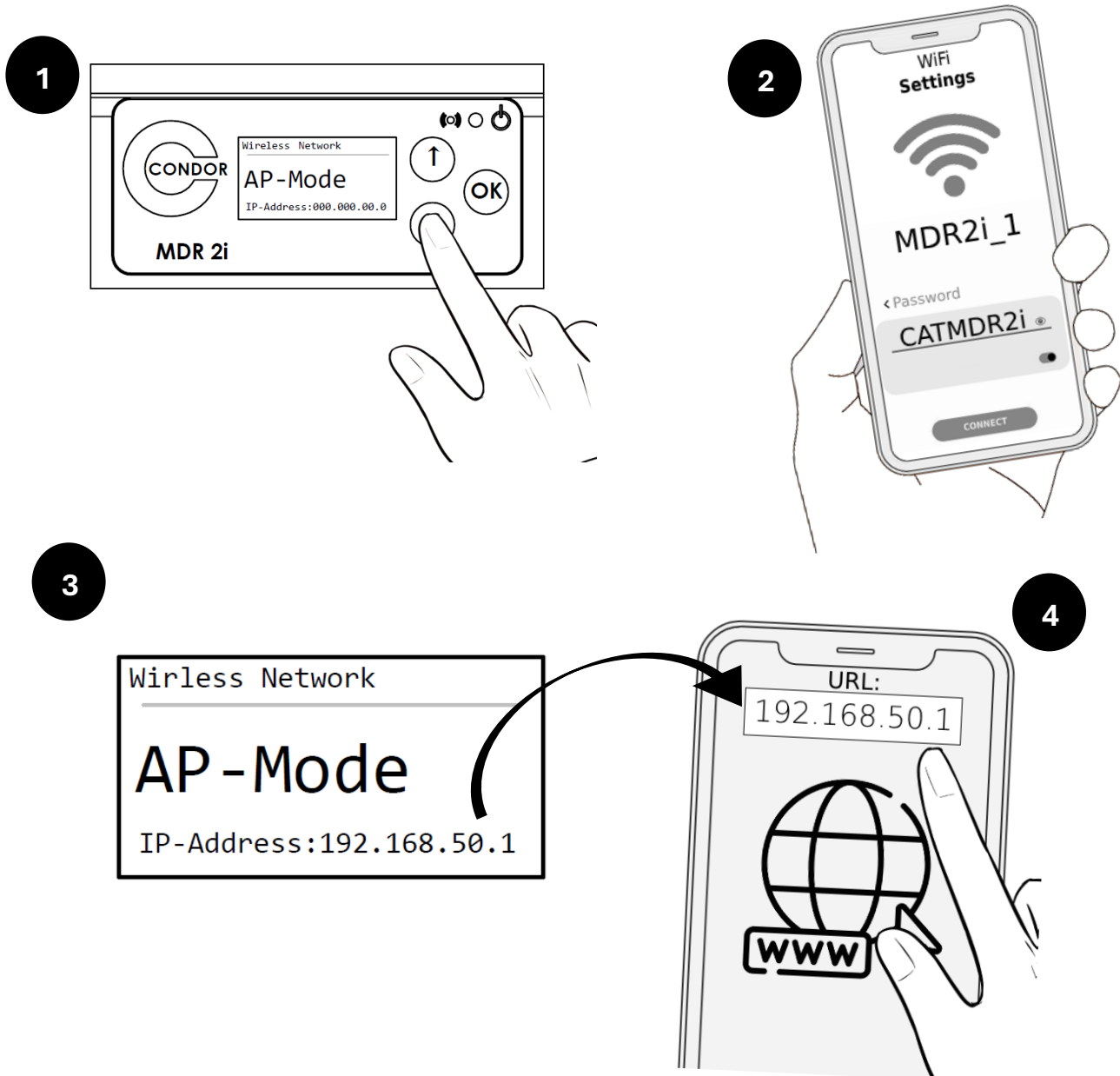


1. Use the ARROW   BUTTONS to navigate between FEATURES.
2. Press the  BUTTON to EDIT the FEATURES value.
3. Use the ARROW BUTTONS   to change the value of the FEATURE when you are EDITING.
4. Press  to SET the new FEATURE value.

The features available on screen are as follows:

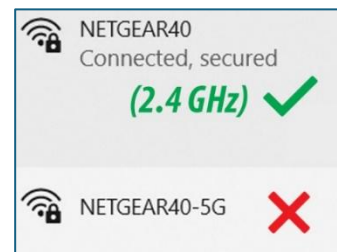
- Main (ON/OFF)
- Wireless Network [Choose the connection mode: AP-Mode, ON, OFF]
 - **AP-Mode** (ACCESS-POINT MODE): WiFi Direct (2.4GHz).
 - **ON** (STATION): Network Server via WiFi IP Address (2.4GHz).
- Programmable Timer [Turn timetable operation ON or OFF]
- Switch-Off Pressure [Select Unit Shutdown Pressure, MAX 125 PSI]
- Switch-On Pressure [Select the unit's re-start pressure, MIN 3 PSI]
- Overcurrent Limit [Select the current limit allowed on the equipment]

III- CONNECT YOUR DEVICE



1. Look for the "Wireless Network" feature. At the Air Compressor's MDR2i smart controller panel, select and set "**AP-MODE**" as the feature value.
2. Go to your device (PC, Laptop, or SmartPhone) and open WiFi settings. **NOTE: 2.4 GHZ ONLY SUPPORTED (5G is not supported).**

> For example:



3. Find the "**MDR2i_1**" network and enter the PASSWORD "**CATMDR2i**" to connect.
4. Go to the MDR 2i Pressure Switch, go to the "Wireless Network" feature, and identify the IP address displayed at the bottom of the screen (i.e. xxx.xxx.xx.x)
5. Open the web browser on your device (Chrome, Firefox, Safari, etc.) and enter the IP address in the browser directory (URL: i.e. **xxx.xxx.xx.x**)

NOTE: If you add a 2nd Smart Controller to the same Router, the device will automatically assign a different IP address than the first Smart Controller.

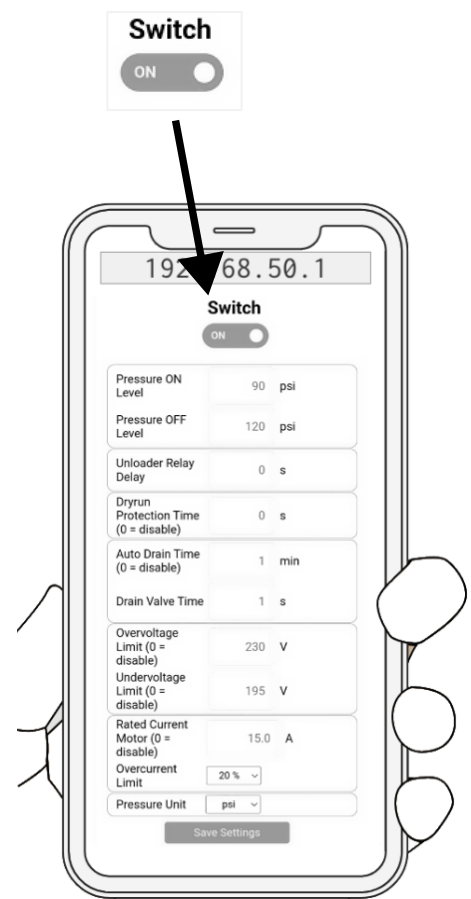
IV – CONTROL WITH YOUR DEVICE

Once connected, your device should display the compressor control interface, which is made up of tabs (shown at the top) that in turn contain the different features of the Smart Controller.

By default, the user is directed to the **Live View** tab which contains the unit's digital switch to Turn the Compressor **ON** or **OFF** [SCROLL DOWN IF YOU DONT SEE THE SWITCH]

Pressure and real-time electrical data are also displayed, as well as the key features of the Smart Controller:

- **Pressure ON Level:** Select the unit's re-start pressure
- **Pressure OFF Level:** Select Unit Shutdown Pressure
- **Unloader Relay Delay:** Delay time for activation of the unloader valves during compressor start-up. It allows the initial load to be reduced.
- **Auto Drain Time:** Select the time between each drain; Drain Timer (5 minutes maximum)
- **Drain Valve Time:** Set the valve opening time on each drain (3 seconds maximum)
- **Overcurrent Limit:** Choose the current limit allowed on the unit. It acts like a breaker.
- **Pressure Unit:** Choose between [bar] and [PSI]



Configure by typing the value, or select from predefined options, depending on the feature.

Pressure ON Level: 90 psi

Pressure OFF Level: 120 psi

Overcurrent Limit: 20 %

Pressure Unit: psi

Type to change the value of the feature

Change the values by choosing the desired option

NOTE: Remember to save the settings after you make the desired changes. This option is located at the bottom of the interface.

Save Settings

NOTE: When you enter invalid data, the control interface will display a note, mentioning the error and under what conditions you should enter the value for the feature.

Live View Condition Monitoring Timer WiFi Configuration Service OTA Update

PRESSURE VOLTAGE CURRENT POWER

114.0 psi 121 V 0.00 A 0 W

Settings

Switch

OFF

Pressure ON Level 90 psi

Pressure OFF Level 120 psi

Unloader Relay Delay 1 s

Dryrun Protection Time (0 = disable) 0 s

Auto Drain Time (0 = disable) 1 min

Drain Valve Time 1 s

Overvoltage Limit (0 = disable) 132 V

Undervoltage Limit (0 = disable) 96 V

Rated Current Motor (0 = disable) 15.0 A

Overcurrent Limit 15 %

Pressure Unit psi

Save Settings

V – CONNECT A NETWORK ROUTER (via ON / Station Mode)

NOTE: You must have your desktop/mobile phone/tablet device previously paired to the Smart Controller before proceeding. See Chapter III.

1. Using your device, head to the control interface and go to the **"WiFi Configuration" tab**
2. Go to the **"WiFi Mode" option** and choose **"Station"** mode.
3. The interface will display the **"WIFI_Networks (Scan)"** option which detects the 5 closest networks. Find and choose your ROUTER's network. **NOTE: 2.4 GHZ ONLY SUPPORTED (5G is not supported).**

Live View Condition Monitoring Timer WiFi Configuration Service OTA Update

WiFi Settings

WiFi Network (SSID) NETGEAR40

WIFI_Networks (Scan) NETGEAR40

Password

WiFi Mode Station

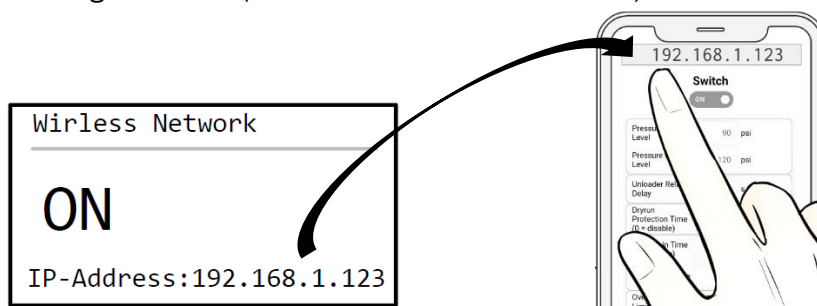
Save

*NOTE: Verify that the information in the **"WiFi Network (SSID)"** section matches that of **"WIFI Networks (Scan)"**. If not, manually enter the network name. Otherwise, the pair to the ROUTER will fail.*

4. Enter your ROUTER's network password and SAVE.



- The Smart Controller will be restarted. After this, go to the Smart Controller screen, go to **"Wireless Network"** and verify that you are in **"ON"** mode and a valid IP address has been generated. *(must be a different IP than 0.0.0.0)*



- Go to your device and connect it to your router's WiFi network (**2.4 GHZ ONLY SUPPORTED**) your internet.
- Now open the browser on your device and enter the IP address displayed by the Smart Controller (mentioned in step 5).

VI – SET DATE & TIME

Set date and time for the Smart Controller.

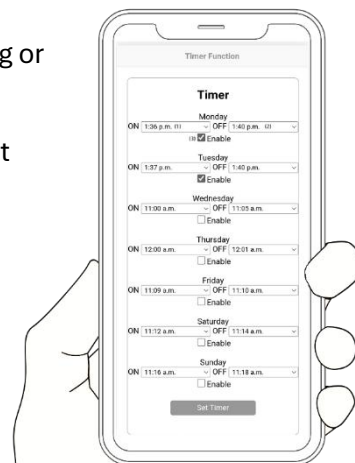
This configuration can only be done using your device, it is not possible to configure directly on the Smart Controller. If you have not paired your device to the Smart Controller, please read Chapter III first.

- Using your device (Smartphone, PC, Laptop, etc.) go to the Smart Controller's control interface.
- Go to the **"Service"** tab.
- Go to the **"DATE/TIME"** section and set the date and time.
- Press **"Set Date/Time"** to save the information.

VII – PROGRAMMABLE TIMER

The Smart Controller has the **"PROGRAMMABLE TIMER"** feature, which manages the use of the compressor according to date and time, allowing or denying its use.

- Using your device (SmartPhone, PC, Laptop, etc.) go to the Smart Controller's control interface.
- Enter the **"Timer"** tab.
- Set the duty cycle on each day of the week.
 - Enable the days of the week that the compressor is required to work BY CHECKING the **"Enable"** box
 - Select the job's ON and OFF time for each day



Live View
Condition Monitoring
Timer
WiFi Configuration
Service
OTA Update

Timer Function

Timer

Monday

ON 06:00 AM OFF 03:00 PM ☐ Enable

Tuesday

ON 06:00 AM OFF 01:40 PM ☒ Enable

Wednesday

ON 11:00 AM OFF 11:05 AM ☐ Enable

Thursday

ON 08:52 AM OFF 08:53 AM ☐ Enable

Friday

ON 11:09 AM OFF 11:10 AM ☐ Enable

Saturday

ON 11:12 AM OFF 11:14 AM ☐ Enable

Sunday

ON 11:16 AM OFF 11:18 AM ☐ Enable

Set Timer

Programmable Timer

☐ OFF

4. Press "**Set Timer**" to save the information.
5. Slide the "**Programmable Timer**" switch to enable (**ON**) daily run times or use to disable (**OFF**) this feature when compressor is not in use.

Programmable Timer

☐ OFF

The function of the switch (ON/OFF) will remain the same, regardless of the Timer. Applicable to both on the interface and directly from the Smart Controller.

VIII – FIRMWARE UPDATE

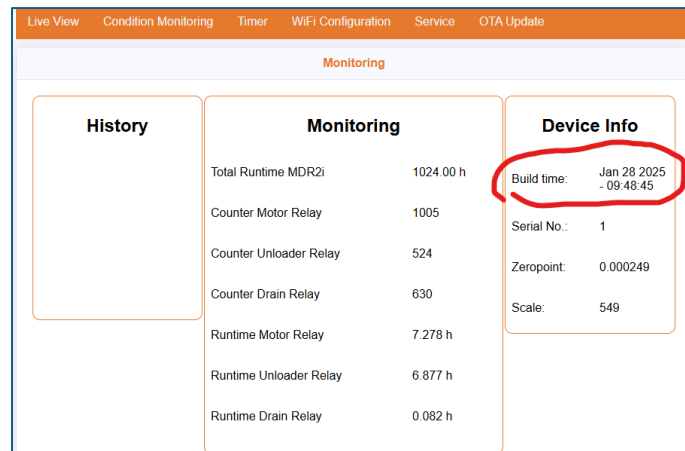
The firmware of your Smart Controller can be updated, improving important aspects to make the device and its control more efficient.

Applies to the following California Air Tools compressor models:

- CAT-10020SMHAD
- CAT-10020DSMAD
- CAT-10020HDSMADC
- CAT-20040SM
- CAT-20040SMAD
- CAT-20040DSMADC
- CAT-60040SMAD
- CAT-60040DSMADC

A. Check your firmware version:

1. Use your device and enter the Smart Controller's control interface
2. Go to the "**Condition Monitoring**" tab.
3. Note in the "**Device Info**" box the date and time shown in the "**Build Time**" section.
4. Verify that the date of your firmware matches the one shown on the California Air Tool Maintenance-Troubleshooting page (visit <https://www.californiaairtools.com/>).



B. If your firmware is outdated, continue:

1. Download the firmware **MDR2iOW_IoT_xxx.bin** file from <https://californiaairtools.com/maintenance-troubleshooting-guide/> (navigate to *SMART* compressor firmware update section).
2. Go to the control interface and go to the "**OTA Update**" tab
3. Select "**Browse...**" to browse to the firmware file

4. Select the file and press **"Update Firmware"**

Live View Condition Monitoring Timer WiFi Configuration Service OTA Update

Firmware Update

Browse...

File: MDR2iOW_IoT_2501281017.bin
Size: 979712 bytes

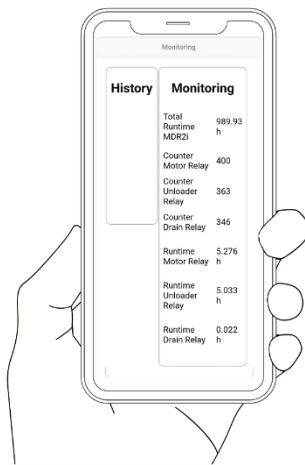
Update Firmware

The Smart Controller will start uploading the file and when it finishes it will restart the computer. Wait 15 seconds before operating the air compressor.

IX – MAINTENANCE

The Smart Controller can count the hours worked for each component and on/off cycles. This will allow you to determine a replacement prior to the total deterioration of any of the components.

Grab your device and head to the Smart Controller's control interface.



1. Go to the **"Condition Monitoring" tab**.

2. See the **"Monitoring" section**

1. **Total Runtime:** Time count for the Smart Controller.
2. **Counter Motor Relay:** Worked cycles of the Motor.
3. **Counter Unloader Relay:** Cycles worked from the Unloader Valve.
4. **Counter Drain Relay:** Worked cycles of the drain valve.
5. **Runtime Motor Relay:** Motor Hours Worked (i.e. for Dry Air models replace desiccant or air dryer cannister at 4000 hours)
6. **Runtime Unloader Relay:** Unloader Valve Hours Worked.
7. **Runtime Drain Relay:** Drain valve hours worked.

X – RESET

Go to the Smart Controller control interface>>>"Service">>Actions>Trigger Restart.

XI – CONNECTING TO MORE THAN ONE COMPRESSOR

To use another Smart Compressor with your device (PC or Smartphone) perform the following:

1. Connect your device with the Compressor Controller in AP-Mode (**Chapter III**).
2. Pair your new Smart Compressor to your Router (**Chapter V**).
3. In your device's browser, use the IP address assigned to each of the Controllers to access the control interface of each (different IP addresses will automatically be assigned).

