



User Manual for WASM - 601  
Real Time Smart Monitoring Software

# Compressed Air Energy Saving Solutions

Smart Measurement Technology That You Can Trust



For More Info  
**SCAN HERE**

## About Us

At WiseAir Technologies, our mission is to empower industries with innovative and advanced measurement solutions for compressed air and gases. With over 20 years of expertise in the field of compressed air management, we have developed smart, reliable, and state-of-the-art products that are both accurate and easy to use. Our focus is on incorporating cutting-edge technologies like M2M communication and the Industrial Internet of Things (IIoT) to bring increased automation, improved communication, and self-monitoring to industrial processes.

Our WA range of smart IIoT sensors can be easily integrated into existing manufacturing and energy management software to enhance data collection, exchange, and analysis for improved productivity and efficiency.

## Our Network

Our Smart Sensors are Developed with Design and Technology Support from Our Partners Across North America, Europe and Asia. With Our Strong Network of Partners, we offer Seamless and Best-in-Class Service to Our Customers.



### Artificial Intelligence and Machine Learning Software

Our software are programmed to analysis and self Diagnose the Measured Datas



### Smart IIoT Sensors

For measurement of Flow, Power, Dew Point and Pressure



### Product Experts

Product Specialists with Decades of Experience in Compressed Air Measurement and Management

## Simplify Your Compressed Air Management With Our Smart Technology

Compressed Air Systems are Dynamic and Highly In-Efficient. Hence they Require Continuous Monitoring for Sustained Benefits. With Our WiseAir 4.0 Smart Sensors and M2M / AI Softwares Your Compressed Air System is Measured, Analysed and Improved Over Time.

With Our Seamless and Detailed Analytical Reports You Can Keep Track Of Your Compressed Air Systems Efficiency with Minimal Human Intervention.

## Our Services

We Offer Free Assessment Services to Identify the HotSpots For Improvements and Develop Road Maps for Sustainable Results. Our Product Specialists Can Also Offer You Customised Plans for Monitoring the Key Performance Factors Of Your Compressed Air System.

**Connect with Our Expert Product Specialists to Learn How Your Factory Can Begin to Realize Energy and Cost Savings with Our Advanced Solutions.**

#### Call Us

Asia : **+91 90477 78715**  
Europe : **+45 36 99 04 22**

#### Email Us

Asia : **info@wiseair.asia**  
Europe : **info@wiseair.asia**

## Understand The True Costs Of Compressed Air

In a Compressor's Life Cycle More than 80 % of its Operating Costs is Spent Towards its Energy. Hence Monitoring and Managing Compressors at their Peak Energy Efficiency will give Significant Energy Savings.

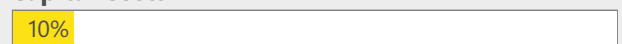
Our Smart Sensors Can Provide Vital Informations Like Flow, Power, Dew Point and Pressure. When Our Sensors are Networked with Our AI Software Programs, All the Measured Datas are Analysed and Reported To You With Suggested Action Plans in Real Time.

Manage Your Compressed Air System Efficiently and Effortlessly With Our WiseAir Smart Sensors and AI Softwares.

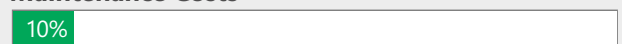
### Energy Costs



### Capital Costs



### Maintenance Costs



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## Application

- Our WiseAir Smart Monitoring Software is an Advanced Technique for Continuously Monitoring Your Compressed Air System. With the Wide Range of Sensor in industry, it helps you to understand your Compressed Air System in order to take Preventive Measures. Our Software makes your Measurement and Maintaining a record of your collected data simple. Thereby, the management of your compressed air system is also made simple and helps you to take immediate action on-time.
- **Application notes :**
  - The WASM is mainly used for monitoring the compressed air system.
  - The WASM can communicate only with RS485/Modbus RTU, in case if required for other mode of communication a converter must be used.

## Features

- Easy to Use Monitoring Solution
- Guided Installation with Installation Wizard
- Browser / Server Structure
- Alarm Monitoring and Indication on Screen
- Graphical Data Analysis
- Multiple User Configuration
- Third Party Sensor Supported
- Scalable to Fit your Application

## Technical Data

### Input Signal and Interface

Digital input	50 x RS-485 Modbus RTU Sensors
Interface	Ethernet / RS-485 Modbus TCP / RTU, USB stick, USB cable

## Installation

### Installation Requirements

- A PC with
  - i3 Processor and Above
  - Windows 7 (64bit) operating system and above
  - Minimum 10 GB RAM
- Database - PostgreSQL, SQL 11 and above
- Storage - Minimum Hard Disk Free Space of 10 GB Available Always
- 24/7 Internet access

### Software Installation

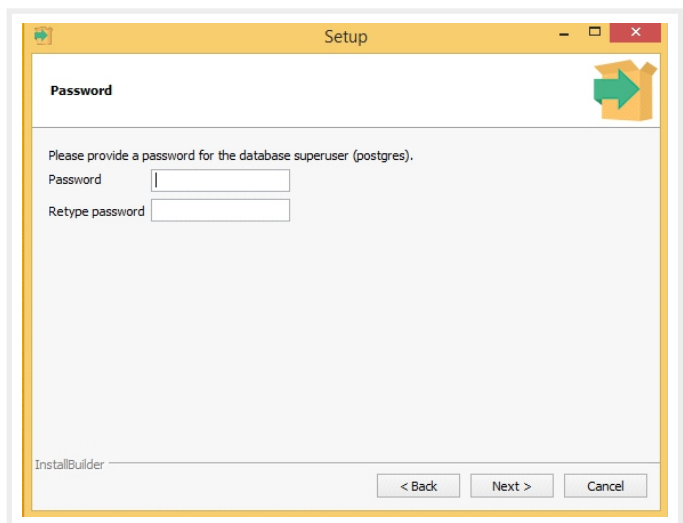
- An installation wizard will guide you through the installation.

### Install Nodejs

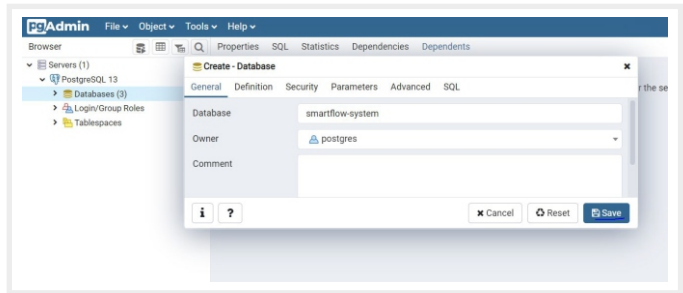
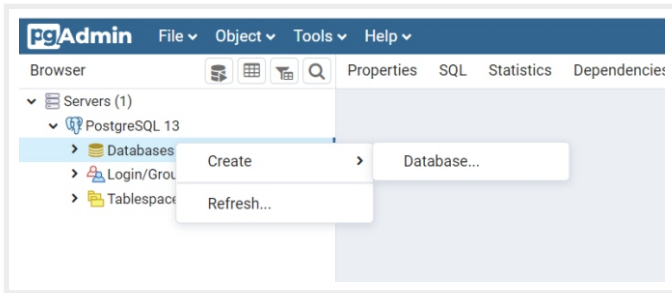
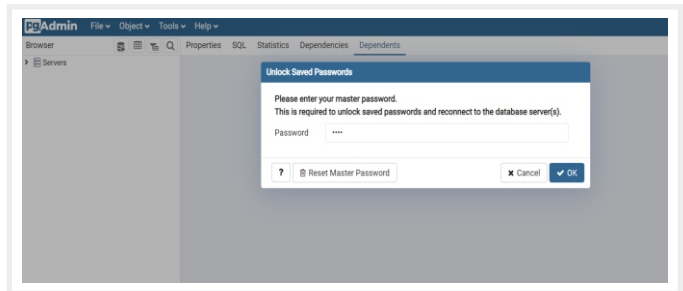
- Go to link - <https://nodejs.org/en/> and download and install node.js

### Install Postgres

- Go to the link <https://www.enterprisedb.com/download/postgres-postgresql-downloads> and download PostgreSQL for Windows x86-64.
- Once downloaded click on the postgresql.exe file to run the database installer.
- Just click next and on the password screen give password of your choice for superuser postgres confirm password and click on next.



- Now open the pgAdmin tool and enter the password which you just created.
- Create db from postgres tool (here smartflow-system)



**• Installing SCMS Application**

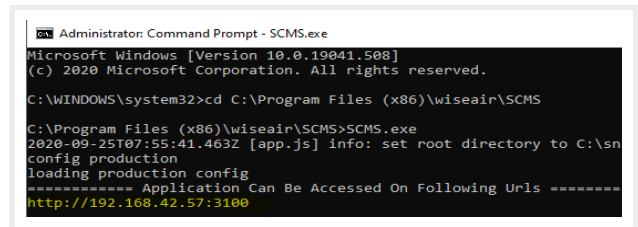
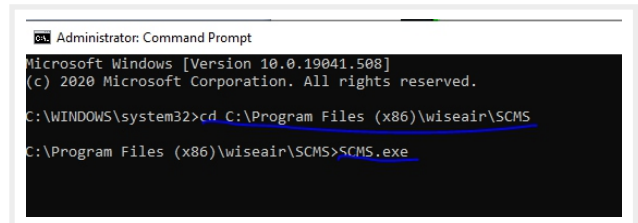
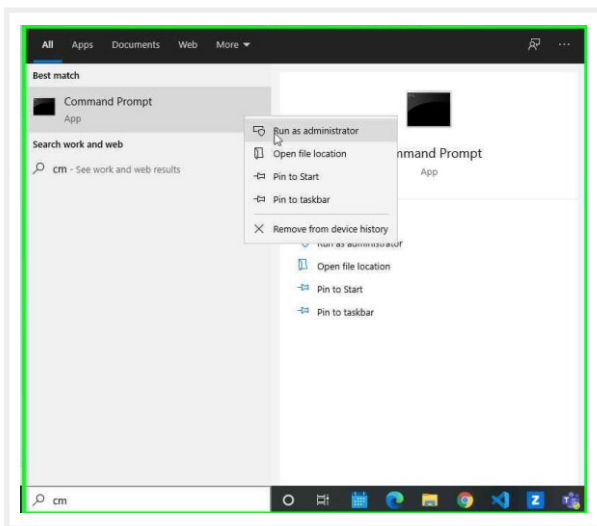
- Double click the scms.msi(installer) it will configure & setup the application. (After successfully installation the app is installed at c:/program files(x86)/wiseair).

**• Method 1 :**

**• Running Application**

- Open a command prompt with admin privileges.

- Afterthat, in Command Prompt type (cd c:\program files (x86)\wiseair\SCMS
- run -> SCMS.exe to start application





**Method 2:**

- Open the destination folder after the installation of the application, "c:\programfiles (x86)\wiseair\scms".

- The software will be opened in a web browser, so initially the background processing has to be started. To start background processing, right click on scms.exe and run as administrator. You can also create a shortcut for the scms.exe file

- The Background Processing will be started in a terminal and an URL for the monitoring software will be generated according to the type of network and IP that you are using. Copy the URL from the terminal

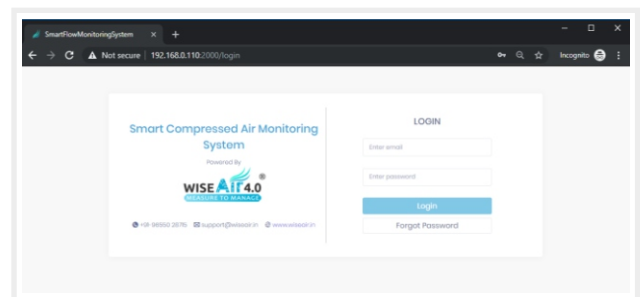
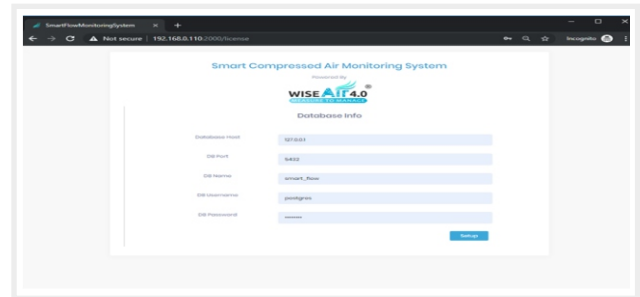
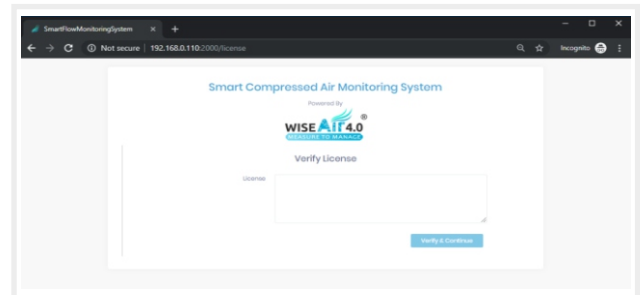
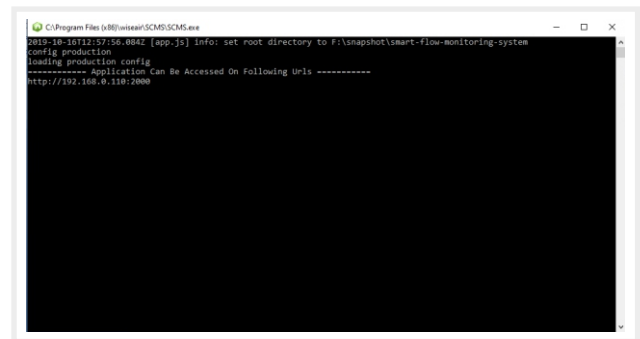
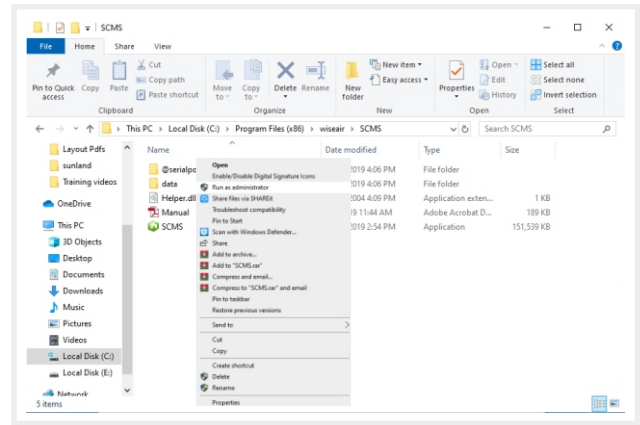
**Activation**

- Visit the copied url in the browser and it will direct you to licensing page. Enter the activation key provided along with the software. The activation key will have multiple unique set of characters. The URL will work on any browser, we recommend you to use Google Chrome browser.

- If you are accessing the software for the first time, it will ask for a license key for verification. Enter the license key.

- After the verification of the license key, the data base information has to be entered. This information is the same info that was used while creating the data base using PostgreSQL application.

- If all the provided data are verified, you will be directed to the login page of the monitoring software. Before logging in, you will be receiving an activation mail with an activation link. Use the link from your email to activate your account and set the password for your account.

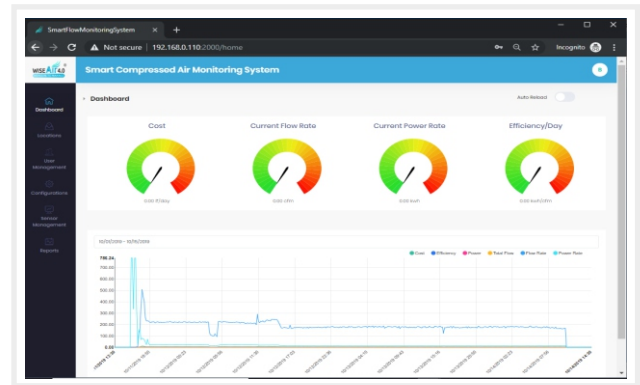


## Dashboard

- You will be directed to the home page of the monitoring software, where you can see the
- Dashboard - Daily Consumption Details of your System
- Trend of your Compressed Air System – Graphical Representation

In the home page, Based on the data collected from the sensors connected to the monitoring software. It will automatically display your

- Average Compressed Air Consumption Per Day
- Average Compressed Air Consumption Cost Per Day
- Average Power Consumption Per Day
- System Efficiency Per Day (Specific Power)

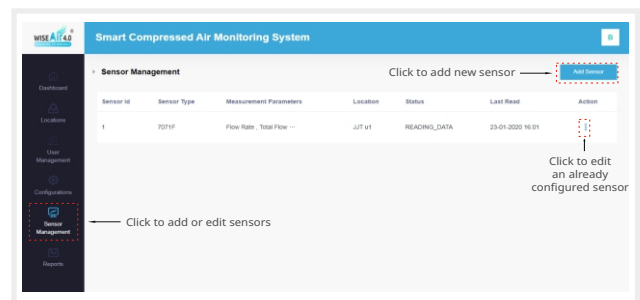


Your Compressed Air System's trend will be displayed for One Day by Default, you can change the view range from One day to Multiple days, Weeks and Months. The trend will be displayed for the following parameters

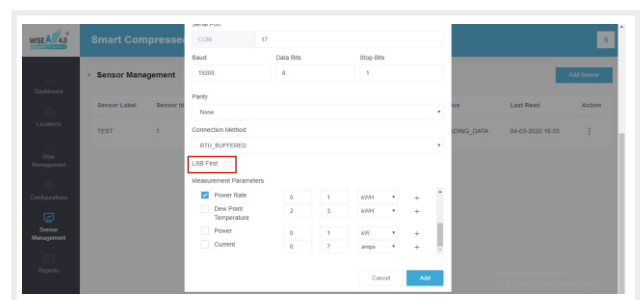
- Flow rate
- Power rate
- Cost
- Efficiency
- Total flow ( Consumption)
- Power ( Total Power)

## Sensor Management

- In order to start the monitoring process, the sensors has to be configured with our Software.
- Please note that our WiseAir Smart Monitoring Software will accept only the sensor with Modbus/RS485 communication Output.
- In RS485, you can configure the Sensor Communication either using ip (RJ 45) or by using com ports (USB)
- To add sensors to the monitoring software, enter "Sensor Management" Tab from the Left Panel of the Dashboard.

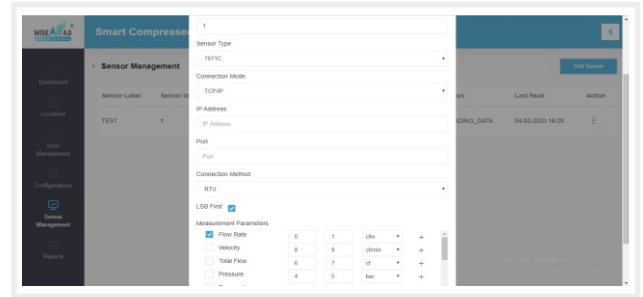
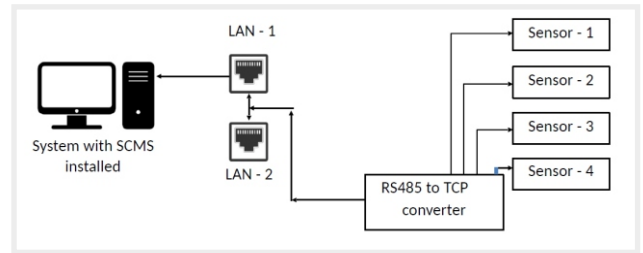


- For Flow Sensors / Measurement Enable the "LSB FIRST" and in Connection method Choose RTU.
- For Power Meters / Measurement disable the "LSB FIRST" and in Connection method Choose RTU\_BUFFERED.



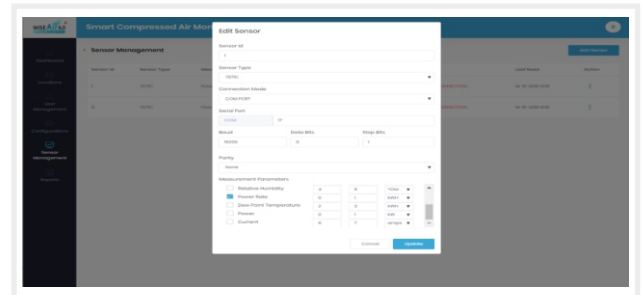
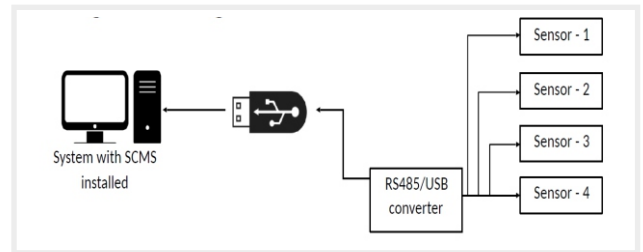
● **CONFIGURATION USING TCP/IP**

- Note that while using TCP/IP mode both the converter and the system with SCMS software installed should be connected in same Network.
- Before connecting the converter to the software, it should be configured using either a configuration software that comes along with the converter or using web browser by entering the IP mentioned in the converter itself.
- The RS485 to TCP converter must be configured with the same Baud Rate and Parity of the sensor connected to it.
- And the converter should be configured with a unique IP.
- In modbus communication, each sensor's measurement parameters will have an unique register.
- This register will be provided in the sensor's user manual.
- Configure the parameters to be measured and its registers accordingly.



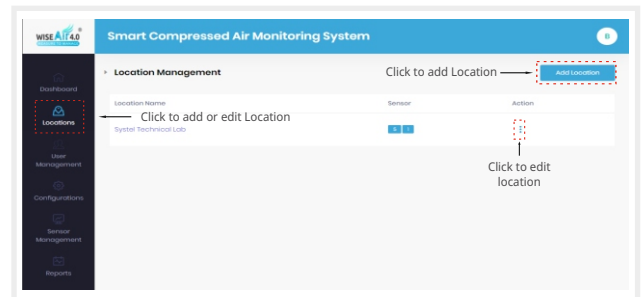
● **CONFIGURATION USING COM PORT**

- Communication of sensor through COM Port is similar to TCP/IP. Here instead of entering the IP and Port we need to enter the Com Port and Baud Rate parameters.
- To find COM Port, go to control panel in your system and enter into Device Manager. You can find the COM Port number in which Modbus/USB converter is inserted.
- Provide the following details
  - Device id
  - Modbus baudrate
  - Data start & stop bit
  - Parameters to be measured
  - Register number for the selected Parameters



**Location Setting**

- After the configuration of sensors with the software, it has to be allocated to a location which is User Defined. In a single location multiple sensors can be configured, but the same sensor cannot be configured in multiple locations.
- To configure location, enter into location tab on the left of the dashboard

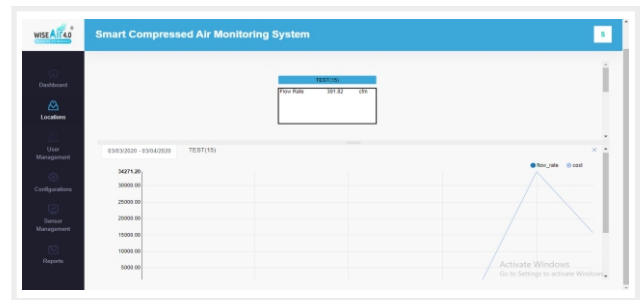
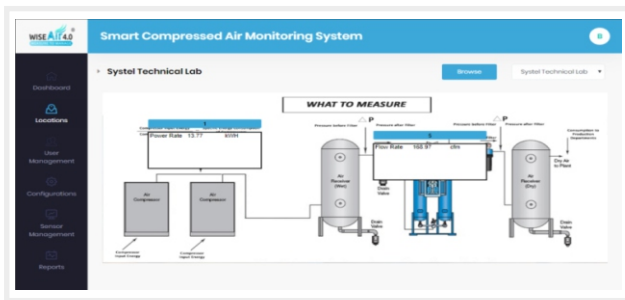




- Click on "add location" and fill in the following details
- Location name – name of a specific location that we wish to monitor continuously
- Sensor allocation – the device id of the sensors which are installed in that specific location.

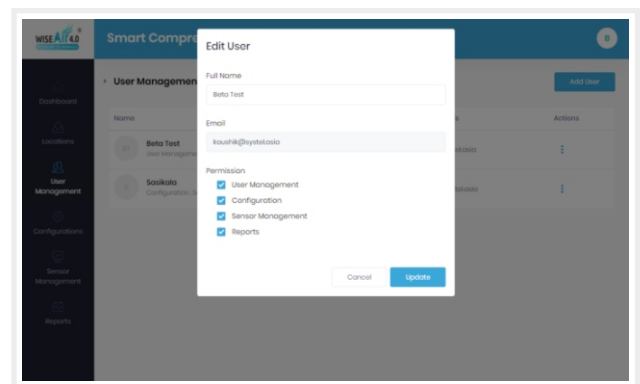
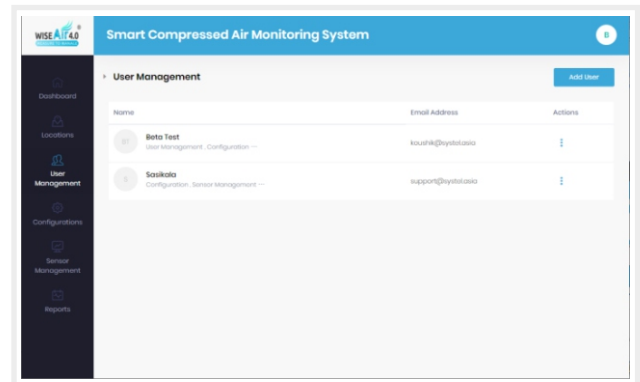


- Images of the location can be included in the locations tab, and the measurement values will be displayed inside a block which can be moved according to your requirement. With this feature you can get a live experience of the measurement location. Also You Can Choose the Location Measurement Trend in Graphical Form by Double Clicking the Sensor Label of Each Table Displayed. Also You Can Select the Parameter to be Displayed in the Graph by either Selecting or Deselecting the Parameter Label.



## User Management

- Multiple users can be created so that the software monitoring can be managed from different locations by different users.
- Users can also be configured. For example, restrictions can be given for each users. There will be one admin by default and from that admin account you can create users with restrictions. If we wish to provide full functionality access for the new user we can check all the boxes while creating user.
- If the user management tab is unchecked, then the new user cannot create users but can modify other settings like configuring sensors, location, exporting reports.
- The restrictions can be given to the options on the left side of the monitoring software.



# Configuration

## LOG SETTINGS

- After assigning the locations and sensors, to initiate the graphical trend in the dashboard and the recording of the measured data, log has to be configured and started. If log is not started then the measured values will not be stored in the server. To create a log, the sensor and the location has to be configured first.

- Go to configuration in the left tab and click on log to open the log settings
- Click on "add log" to create a log, provide the appropriate name and logging interval while creating the log.
- Please note that you have to create individual log for each and every sensor that you are configuring.

## CONFIGURATION OF COMPRESSED AIR COST

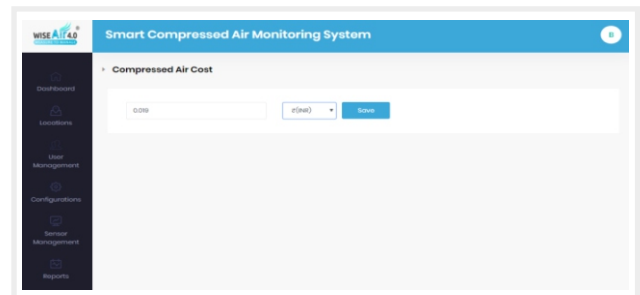
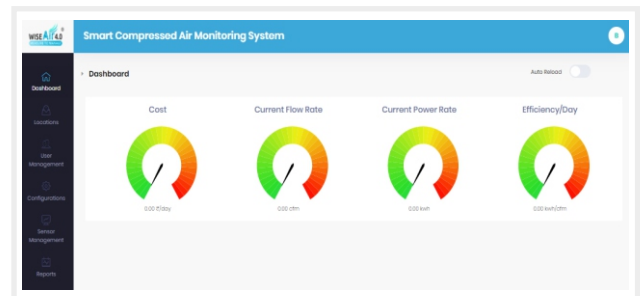
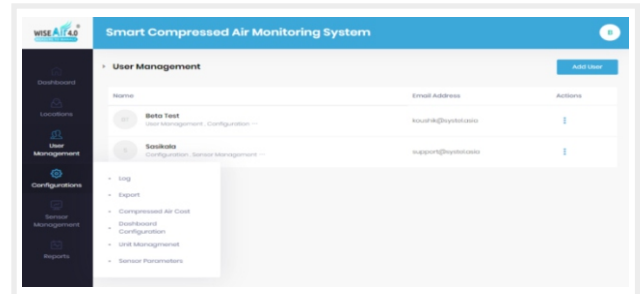
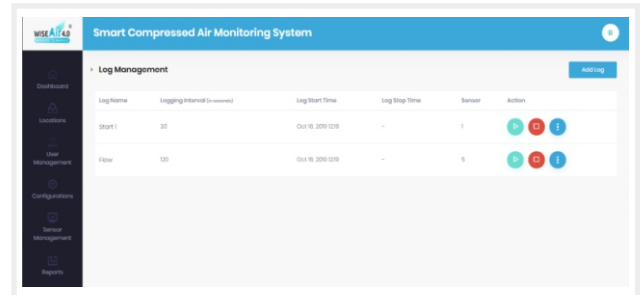
- In the dashboard there will be a meter display which shows the everyday utilization of the below mentioned parameters.

- In this dashboard, the data for flow rate and power rate will be taken from the sensor directly. And the efficiency will be calculated with the values of flow rate and power rate. But cost per day will displayed based on the cost per CFM value which we have to manually feed.

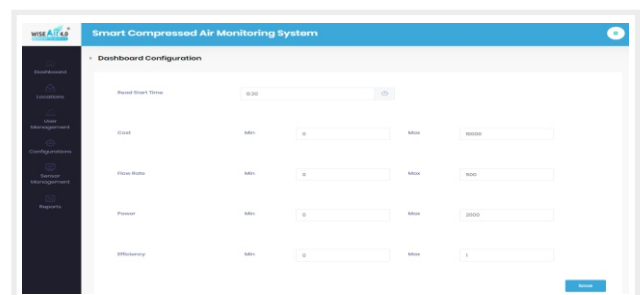
- The cost value can be fed by entering into configuration -> compressed air cost.
- You will be directed to the cost configuration page. In which you can configure the cost per cfm and the currency units can also be changed.

## CONFIGURATION OF DASHBOARD

- The Dashboard is where we can see the summary of our Compressed Air System, however we need to configure the Info-Meter's Maximum and Minimum values with which it displays the Alerts for high usage.
- To customize that click on Configuration > Dashboard Configuration



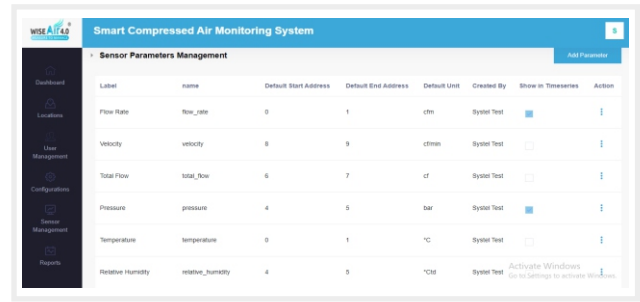
$$cost\ per\ cfm = \frac{rated\ Power}{rated\ flow\ capacity \times 60} \times cost\ of\ 1kW$$



**● CONFIGURATION OF NEW SENSOR PARAMETERS**

● By default there are few sensor parameters and units preconfigured in Our Smart Monitoring Software. In case if a New Sensor or a Meter is being connected with the monitoring software and if those units or parameters that is measured or sensed in the newly connected meter or sensor, there is an option to add addition parameters and units to overcome these situations which makes the monitoring software highly compatible and customizable to almost all measurement devices available in the industry.

● We Can Choose the parameters to be displayed in the Dashboard Time Series Graph by Enabling the same under "Sensor Parameters Management".



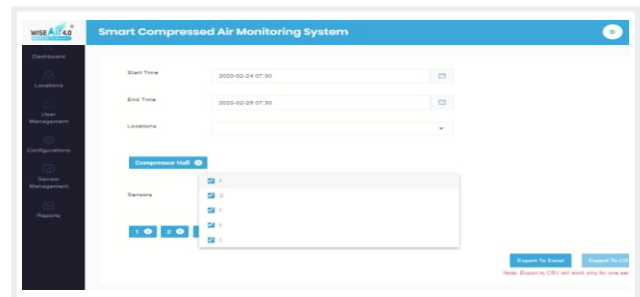
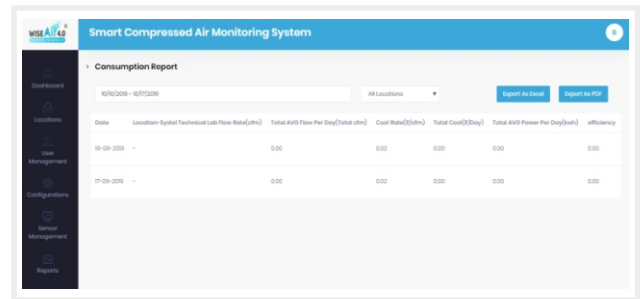
**Report Generation**

● As all the data is collected and stored, it is important to prepare a report of the collected data in order to store or compare with the previously obtained reports and to take required action at the correct time to avoid Major Breakdowns or Losses.

● To avoid this lag, the monitoring software will automatically keep a track of your records and helps you to maintain a report based data system. This allows you to easily simplify the collected data and store them accordingly. Anyhow regular backup collection of your data base is recommended as it is being stored in a cloud based system.

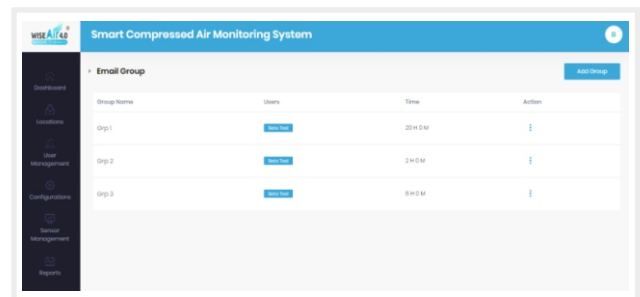
**● EXPORTING LOG FILES**

● For Exporting the Logged Files Navigate to Configuration > Export > Define Start Time > End Time > Locations > Sensor ID & Sensor Label > Desired Parameters and Click Export to Excel.



**Automatic Emails to Group**

● If you are looking for automatic email messages of your daily report to be shared with multiple coworkers in your factory, then there is an automatic reporting option available in our Smart Monitoring Software, which will send a Summary of the daily consumption report to the list of authorised executives that you can create in the software itself, and the mail will be sent regularly to the specified users on the defined time, which is also customisable. But please make a note that the generated report will be for 24 hrs cycle, so if you are planning to send a shift based report, you will have to specify the time correctly.



## Software Parameter Value Setting

### ● USING DATA CONCENTRATOR :

#### ● Connection Mode : TCP/IP

● **Step 1 :** Set the Data Concentrator Parameter Values :

0 to 64 bit	1st Sensor
64 to 128 bit	2nd Sensor
128 to 192 bit	3rd Sensor
192 to 256 bit	4th Sensor
256 to 320 bit	5th Sensor

#### ● Step 2: Set the Parameter Values :

● Set the parameters values depends on the Flow sensors (WAFS 104) values shows in the data concentrator.

Measurement Parameters				
<input checked="" type="checkbox"/> Flow Rate	386	387	cfm	+
<input checked="" type="checkbox"/> Velocity	388	389	cf/min	+
<input checked="" type="checkbox"/> Total Flow	391	393	cf	+
<input type="checkbox"/> Pressure	10	11	bar	+
<input checked="" type="checkbox"/> Temperature	390	391	°C	+

● Set the parameters values depends on the Dew Point sensors (WADS 201~204) values shows in the data concentrator.

Measurement Parameters				
<input checked="" type="checkbox"/> Temperature	322	323	°C	+
<input checked="" type="checkbox"/> Dew Point	326	327	°Ctd	+
<input type="checkbox"/> Power Rate	0	1	kW	+
<input type="checkbox"/> Current	6	7	amps	+
<input checked="" type="checkbox"/> Relative Humidity	324	325	%RH	+

● Set the parameters values depends on the Power Meter (WAPM 402) values shows in the data concentrator.

POWER METER 1				
<input checked="" type="checkbox"/> Power Rate	197	198	KWH	+
<input checked="" type="checkbox"/> Current	193	194	amps	+
<input type="checkbox"/> Relative Humidity	2	3	%RH	+
<input checked="" type="checkbox"/> Active Energy	201	202	kW	+
<input checked="" type="checkbox"/> Voltage	203	204	V	+

POWER METER 2				
<input checked="" type="checkbox"/> Power Rate	262	263	KWH	+
<input checked="" type="checkbox"/> Current	258	259	amps	+
<input type="checkbox"/> Relative Humidity	2	3	%RH	+
<input checked="" type="checkbox"/> Active Energy	264	265	kW	+
<input checked="" type="checkbox"/> Voltage	268	269	V	+

● Set the parameters values depends on the Pressure Sensor (WAPS 501~502) values shows in the data concentrator.

Measurement Parameters				
<input checked="" type="checkbox"/> Pressure	8	9	bar	-
<input type="checkbox"/> Temperature	2	3	°C	+
<input type="checkbox"/> Dew Point	0	1	°Ctd	+
<input type="checkbox"/> Power Rate	0	1	kW	+
<input type="checkbox"/> Current	6	7		.

### ● USING RS 485 CONVERTER :

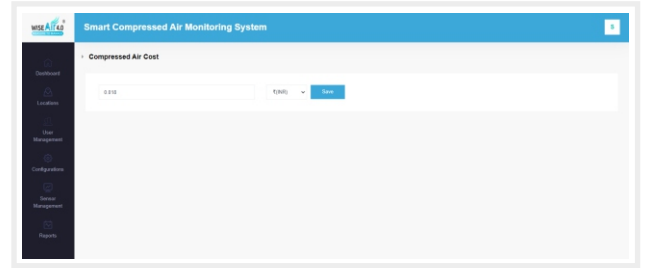
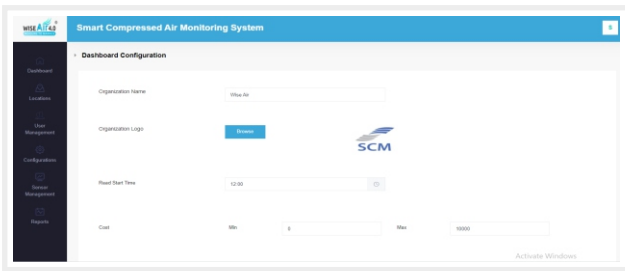
#### ● Connection Mode : COM PORT

● **Step 1 :** Set the parameters values : Depends on the Flow sensors (WAFS 104) values

Measurement Parameters				
<input type="checkbox"/> Flow Rate	0	1	cfm	+
<input checked="" type="checkbox"/> Velocity	2	3	cf/min	+
<input checked="" type="checkbox"/> Total Flow	4	7	cf	+

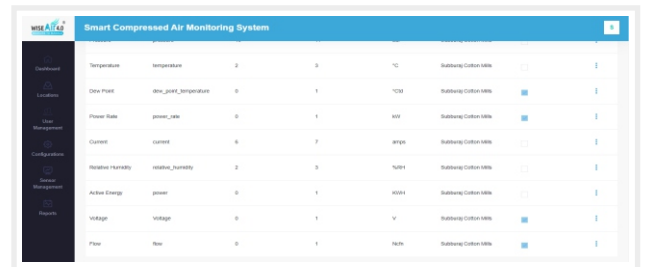
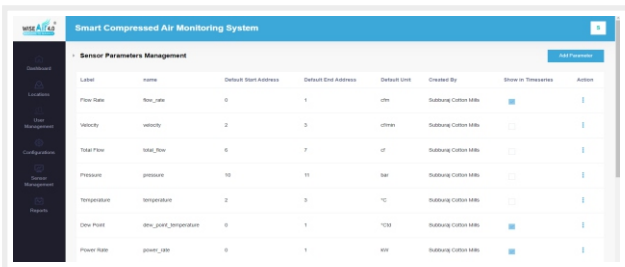
# Dashboard Configuration

- **Step 1:** Set the compressor air cost=0.018
- **Step 2:** Set the organisation name, logo, Starting time of Reading, Cost Range=0 to 10000
- **Step 3 :** Set the flow Rate =0 to 600, Power =0 to 100Kw, Efficiency=0 to 2



● **Step 4:** Set the Sensors Parameters Management

- Flow Rate = 0 to 1
- Velocity = 2 to 3
- Total Flow = 6 to 7
- Pressure = 10 to 11
- Temperature = 2 to 3
- Dew point = 0 to 1
- Power Rate = 0 to 1
- Dummy Flow = 0 to 1
- Voltage = 0 to 1
- Active Energy = 0 to 1
- RH = 2 To 3
- Current = 6 to 7



## Data Concentrator Configuration

### Pressure Sensor

SA 1 - 00000	SA 2 - 00002	SA 3 - 00004	SA 4 TO SA 8
ELE 1 - 02	ELE 2 - 02	ELE 3 - 02	DISABLED
ENABLED	ENABLED	ENABLED	

### Dew Point Sensor

SA 1 - 00000	SA 2 - 00002	SA 3 - 00004	SA 4 TO SA 8
ELE 1 - 02	ELE 2 - 02	ELE 3 - 02	DISABLED
ENABLED	ENABLED	ENABLED	

### Power Meter

SA 1 - 02139	SA 2 - 02147	SA 3 - 02155	SA 4 - 04000	SA 5 TO SA 8
ELE 1 - 02	ELE 2 - 02	ELE 3 - 02	ELE 3 - 02	DISABLED
ENABLED	ENABLED	ENABLED	ENABLED	

### Thermal Mass Flow Meter

SA 1 - 00000	SA 2 - 00002	SA 3 - 00004	SA 4 - 00008	SA 5 TO SA 8
ELE 1 - 02	ELE 2 - 02	ELE 3 - 02	ELE 3 - 02	DISABLED
ENABLED	ENABLED	ENABLED	ENABLED	

### Pitot Tube Flow Meter

SA 1 - 00000	SA 2 - 00002	SA 3 - 00008	SA 4 - 00010	SA 5 - 00024
ELE 1 - 02	ELE 2 - 02	ELE 3 - 02	ELE 3 - 02	ELE 1 - 02
ENABLED	ENABLED	ENABLED	ENABLED	ENABLED
SA 6 - 00041	SA 7 TO SA 8			
ELE 2 - 02	DISABLED			
ENABLED				

### Need Help ?

Contact your local dealer. Alternatively, contact  
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# Understand Compressed Air System Dynamics with Our Advanced Measurement Solutions

Measure - Manage - Save - Sustain

## Our Network



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