



ECO Series

Oil – Free Scroll Compressor

Controller Manual ES04



WARNING

Personal injury and/or equipment damage will be result by failing to pay attention to the vital safety information and instructions in this manual. Carefully read, understand, and retain all safety information and instructions before operating this compressor.

Information on these operating instructions

These instructions enable you to use the machine safely and efficiently. The instructions are a component part of the machine and must be accessible for staff at all times.

Staff must have carefully read and understood these instructions before starting all work. The basic prerequisite for safe working is compliance with all the safety instructions and instruction for actions included in these operating instructions.

The local occupational health and safety regulations and general safety rules for operational area of the machine also apply.

The instructions for the machine do not cover operation of the controller. Therefore, the instructions and content of the instructions for the controller in question must also be taken into account.

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Any infringement shall be subject to compensation for damages. We reserve the right to assert further claims.

Limitation of liability

All information and instructions in this manual have been compiled taking account of the applicable standards and regulations, state-of-the-art technology and our years of knowledge and experience.

The manufacturer assumes no liability for damages caused by:

- Failure to adhere to these instructions
- Improper use
- Use of unqualified staff
- Unauthorized conversions
- Technical modifications
- Use of non-approved spare parts

The actual scope of supply may differ from the descriptions and illustrations in these instructions in the case of special designs, the inclusion of additional ordering options or as a result of the latest technical modifications.

The obligations agreed in the contract of supply, the manufacturer's general terms and conditions of business and delivery and the legal regulations valid at the time of completion of the contract apply.

Customer service

Our Customer Service department is available to provide technical information.

In addition, our employees are always interested in receiving new information and hearing of your experiences from usage which could be valuable for the improvement of our products.

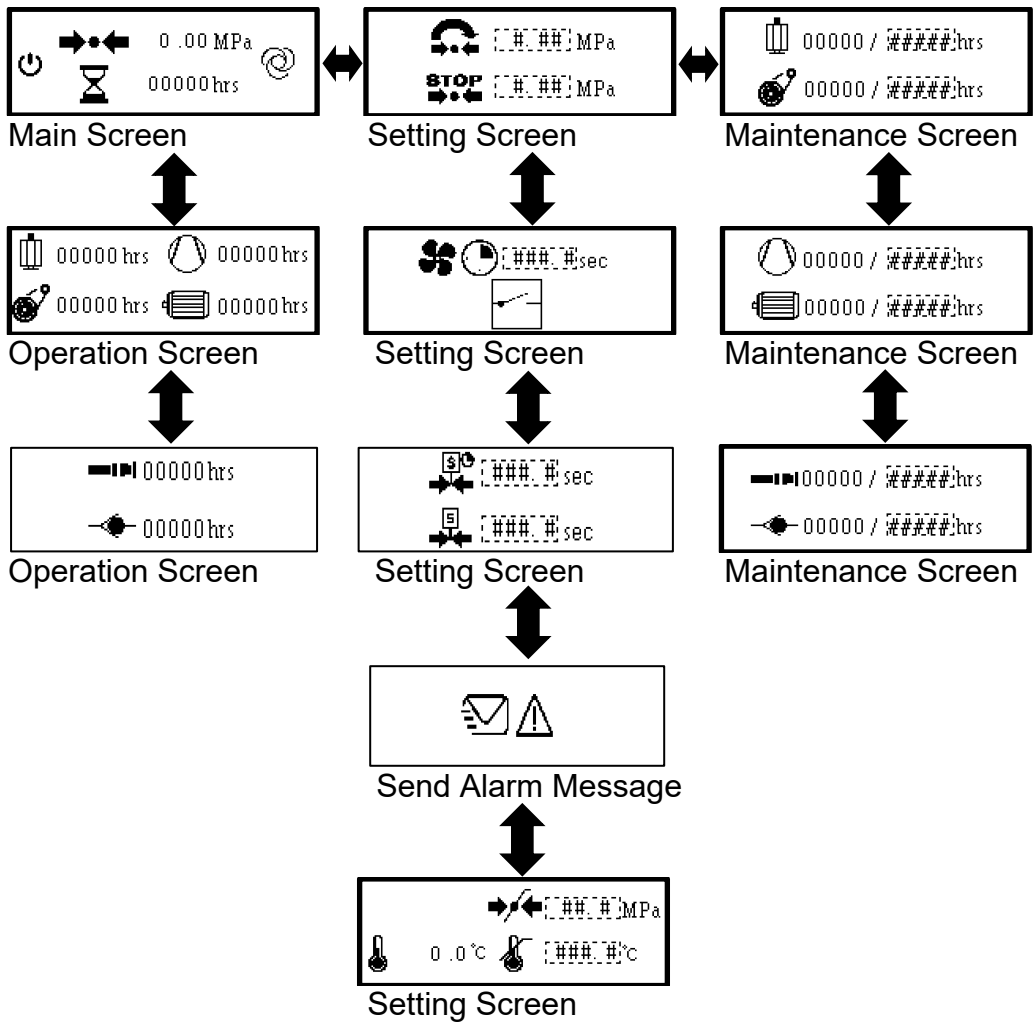
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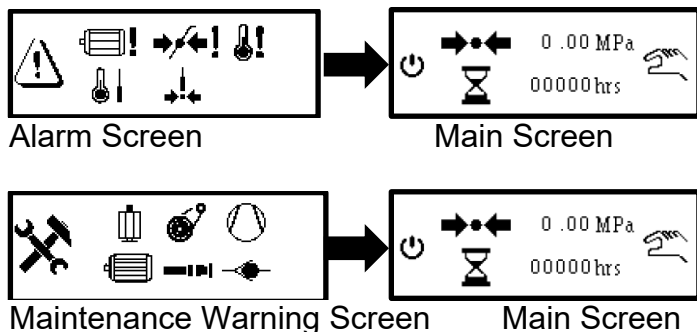
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1. Operation Description

1.1 Switching Screens

The following flowchart illustrates how to switch to and from different screens on the controller. When the power is turned on the "Main Screen" is the first screen to appear.





Settings Screen (※Note 1)

From main screen, press ⇨ button to switch to settings screen.

From settings screen, press ⇐ button to go back to main screen.

From settings screen, press ↑ or ↓ to select different settings screens to set parameters.

※Note 1: Need password (Default: 123456)

Maintenance Screen

From settings screen, press ⇨ button to switch to maintenance screen.

From maintenance screen, press ↑ or ↓ to select different maintenance screens to set parameters.

Alarm Screen or Maintenance Warning Screen

From Alarm screen or Maintenance Warning screen, press "ENT" button to switch to main screen.











1.2 Startup

1.2.1 Default Parameters

From main screen, press⇨ button to switch to settings screen.

Press ↑ or ↓ to switch screens and confirm parameters

The default values are listed in the following table.

Figure	Name	Default Value	Unit	Setting Button
	Start Pressure	87	psi	0
	Stop Pressure	116	psi	1
	Fan delay time	120	Sec	0
	Dry contact	-	-	1
	Maximum pressure	123	psi	0
	Maximum discharge temperature	464	° F	1
	Solenoid open time	300	Sec	0
	Solenoid close time	4	Sec	1
	Remote Message		-	0

1.2.2 Changing Parameters

If the parameters need to change, please switch to the settings screen which shows the desired parameter that needs to change and refer to the above table for the correct button to press to change it. On all the settings screens, to change the top parameter press "0", to change the bottom parameter press "1".

1.2.3 Starting and Stopping Compressor

To start the compressor, press and hold the “F” button. Note that the compressor will operate between the start and stop pressure setting values and may need to reach the stop pressure to initially start. To stop the compressor, simply press and hold the “F” button once again.

1.2.4 Rotation Direction

Confirm the voltage and air piping is correct.
 Press and hold "F" button to start compressor.
 Confirm the rotation direction and press emergency stop. If the direction is wrong, have an electrician change the wiring.

2. Controller Symbols

The following section shows examples of what symbols could appear on each screen and provides a table describing what each symbol represents.

2.1 Main Screen

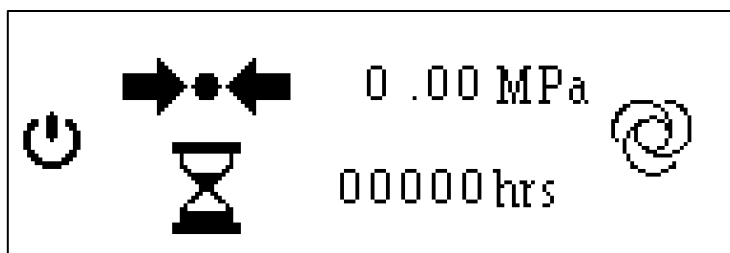






Figure	Name	Description
	Status	Represents the status is ON, Stand by, or STOP
	Pressure	Represents system pressure
	Operation hours	Represents operation hours
	Auto Control	Represents control mode is auto or remote control

2.2 Settings Screens

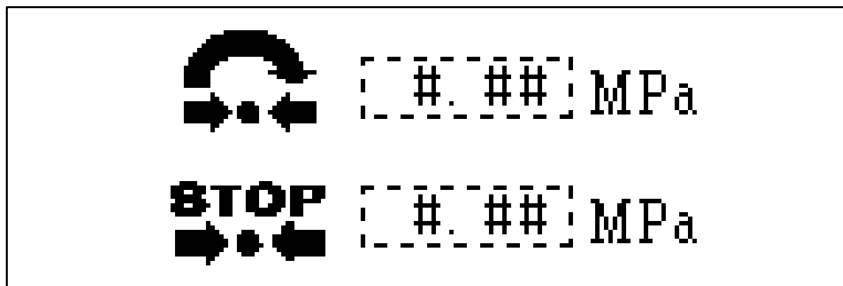




Figure	Name	Description
	Start Pressure	Set the start pressure of compressor
	Stop Pressure	Set the stop pressure of compressor

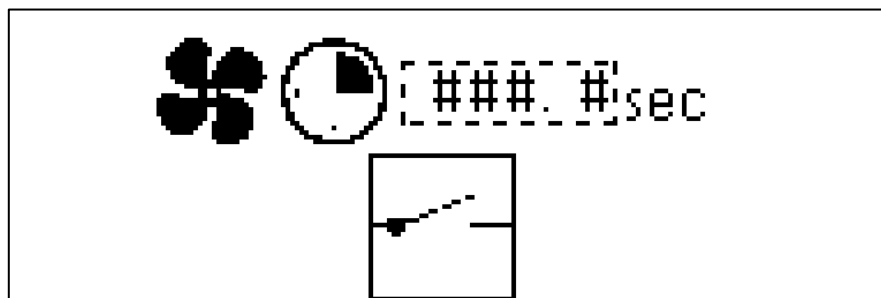




Figure	Name	Description
	Fan delay time	Set the fan delay time when compressor is on stand by
	Dry Contact	Set the dry contact sets of remote control

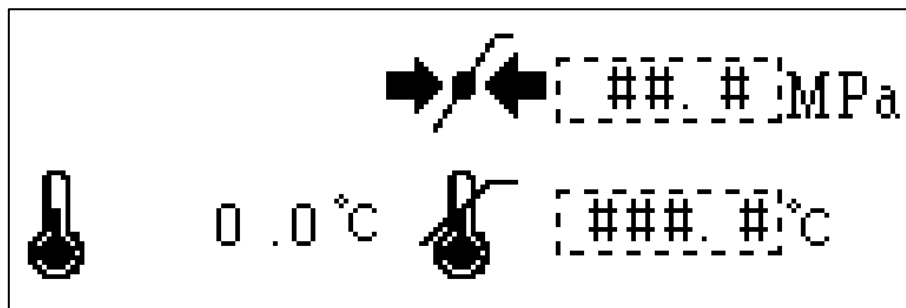





Figure	Name	Description
	Maximum pressure	Set the maximum pressure
	Discharge temperature	Represents the discharge temperature
	Maximum discharge temperature	Set the maximum discharge temperature

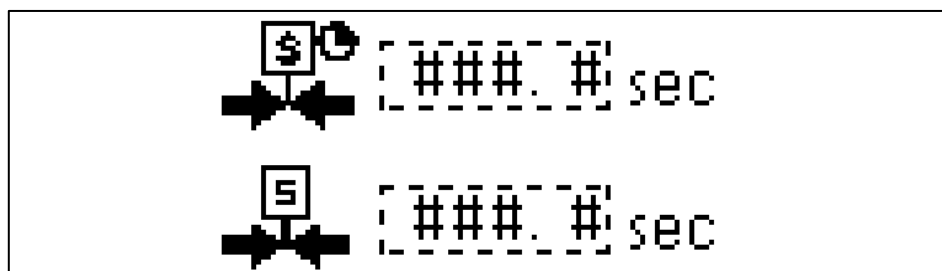




Figure	Name	Description
	Solenoid open time	Set solenoid open time
	Solenoid close time	Set solenoid close time

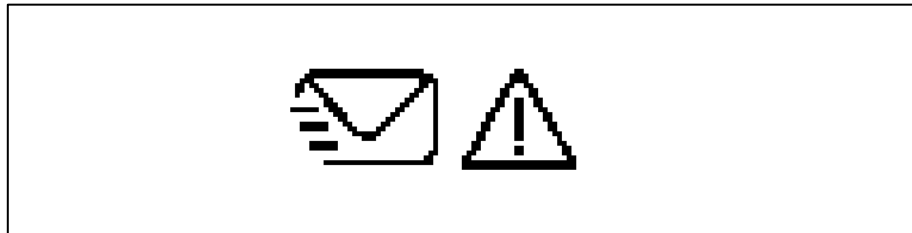




Figure	Name	Description
	Remote message	Send remote message
	Error message	Send error message

2.3 Operation Screens

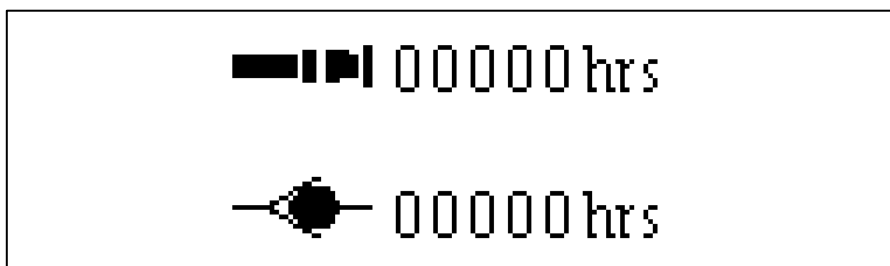
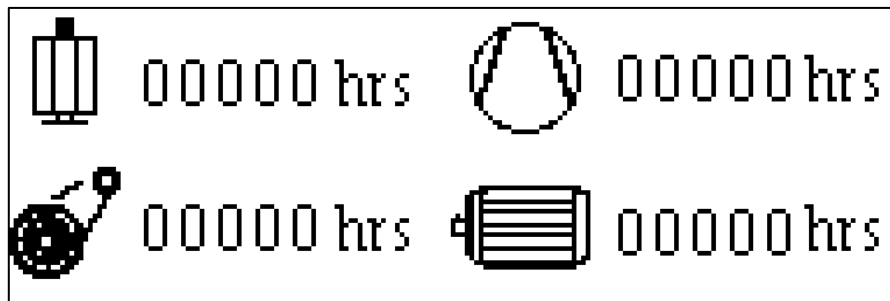



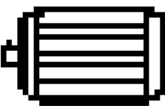



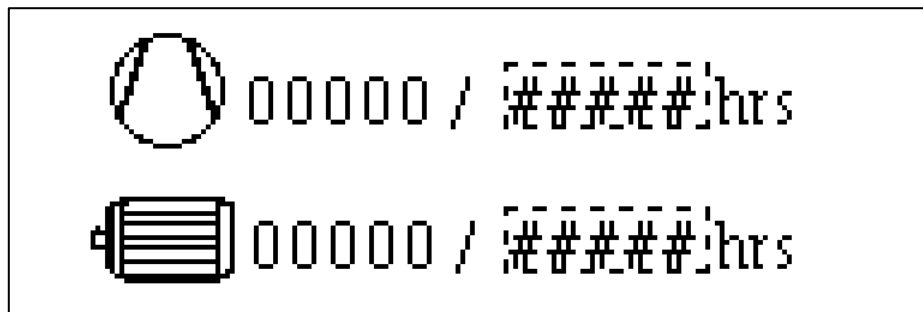
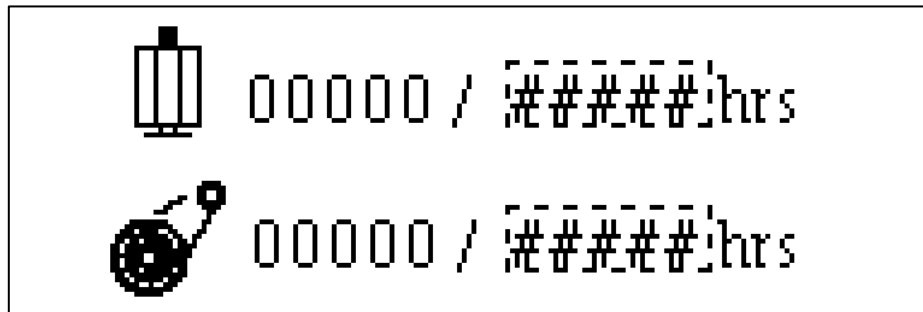


Figure	Name	Description
	Air filter	Represents the operation hours of air filter
	Compressor	Represents the operation hours of compressor
	Belt	Represents the operation hours of belt
	Motor	Represents the operation hours of motor
	High pressure hose	Represents the operation hours of high pressure hose
	Check valve	Represents the operation hours of check valve
	Spare part operation time	Represents the operation hours of spare part

2.4 Maintenance Screens



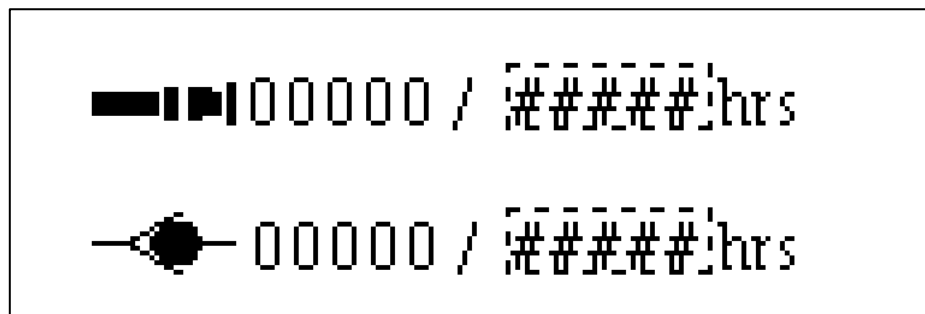










Figure	Name	Description
	Air filter	Represents the maintenance setting of air filter
	Belt	Represents the maintenance setting of belt
	Compressor	Represents the maintenance setting of Compressor
	Motor	Represents the maintenance setting of motor
	High pressure hose	Represents the maintenance setting of high pressure hose
	Check valve	Represents the maintenance setting of check valve
	Spare part operation time	Represents the operation hours of spare part
	Set maintenance time	Set the maintenance hours of spare part

2.5 Alarm Screens

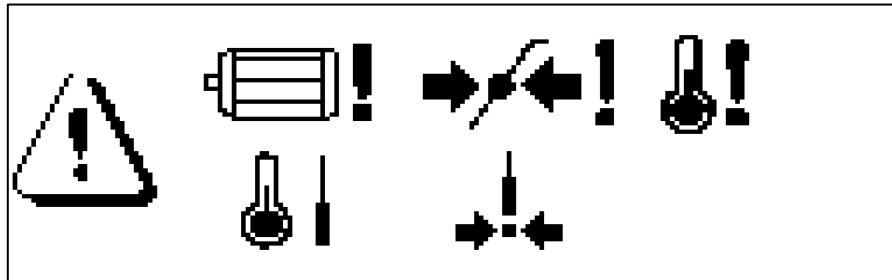

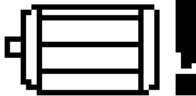


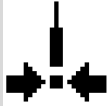




Figure	Name	Description
	Alarm	Represents alarm notice
	Motor overload	Represents motor overload
	Temperature sensor signal error	Represents the temperature sensor signal error
	Over pressure	Represents the system pressure over maximum pressure
	Pressure transducer signal error	Represents the pressure transducer signal error
	High temperature alarm	Represents the discharge temperature over maximum discharge temperature
	Emergency stop	Represents the emergency stop button is pressed

2.6 Maintenance Warning Screen

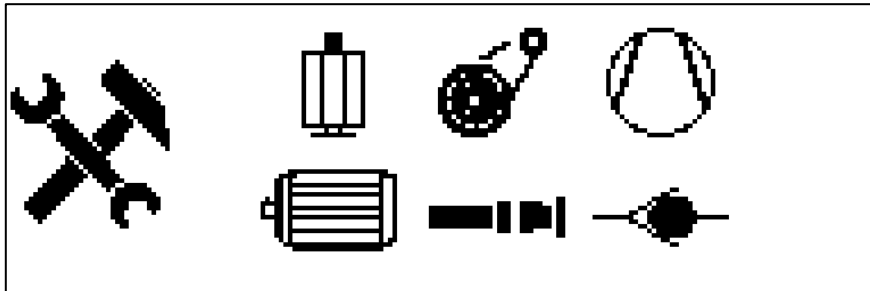


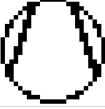






Figure	Name	Description
	Maintenance Warning Symbol	Represents maintenance warning notice
	Air filter	Represents air filter maintenance is needed
	Compressor	Represents compressor maintenance is needed
	Belt	Represents belt maintenance is needed
	Motor	Represents motor maintenance is needed
	High pressure hose	Represents high pressure hose maintenance is needed
	Check valve	Represents check valve maintenance is needed

3. Maintenance




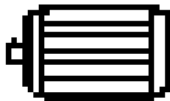


3.1 Default Maintenance Hours

From main screen, press ⇨ button to switch to settings screen.

From settings screen, press ⇨ button to switch to maintenance screen.

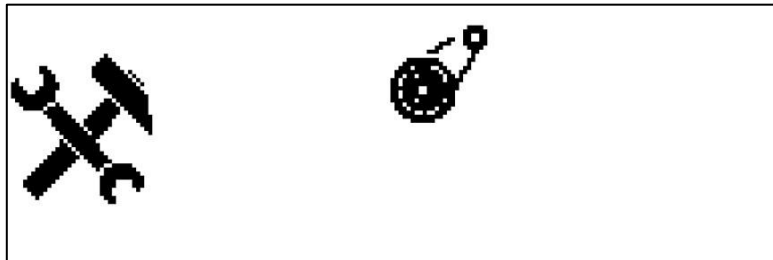
Press ↑ or ↓ to switch between maintenance screens and confirm maintenance hours.

The default hours are listed in the table below.

Figure	Name	Maintenance hours	Setting button	Reset button
	Air filter	2500	0	2
	Belt	10000	1	3
	Compressor	20000	0	2
	Motor	20000	1	3
	High pressure hose	10000	0	2
	Check valve	10000	1	3

3.2 Maintenance Warning Message

When a part reaches its designated maintenance hours, the controller will show the Maintenance warning screen. For example, if the maintenance warning screen shows the illustration below, it means the belt needs to be replaced.



3.3 Maintenance Process (※Note 2)

For the example illustrated above:

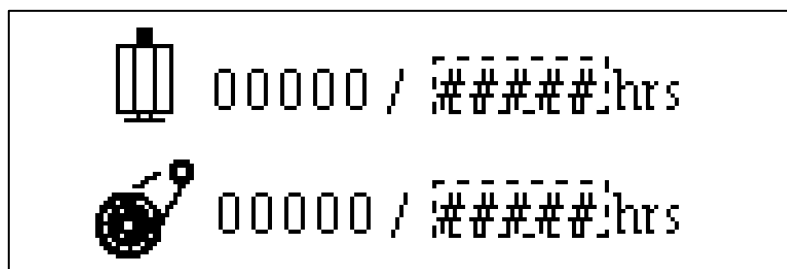
Shut down the compressor and replace the belt.

From maintenance warning screen, press "ENT" button to go back to main screen.

Press ⇨ button to switch to settings screen.

Press ⇨ button to switch to maintenance screen.

Press ↓ button to switch to the maintenance screen with belt on screen, as shown in the following illustration.




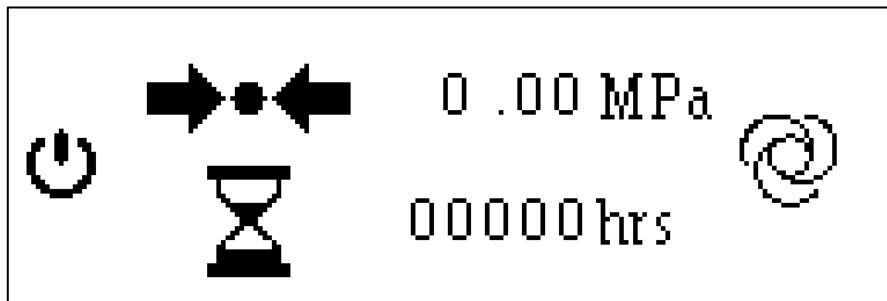
Press "3" for 2 seconds to reset the belt's maintenance hours.

※Note 2: Refer to the maintenance table above to know what buttons to press to change each part's default hour setting or to reset each part's maintenance hours. In general, to change default hours for part shown on top of the screen, press and hold "0" and to change the default hours of the part shown on bottom of the screen, press and hold "1". To reset the maintenance hours of the part on the top of the screen, press and hold "2", and to reset the maintenance hours for the part shown on the bottom of the screen, press and hold "3".

3.4 Starting After Maintenance

Press and hold "F" button to start compressor.

Please notice the  symbol will flash meaning the compressor is operating.



Confirm the pressure on main screen as illustrated above and check if there are abnormal conditions or alarms.

4. Alarms

4.1 Alarm Message

When an alarm is triggered, the system will show the alarm screen and the parts that triggered the alarm. For example, if the screen shows the following illustration, this means the motor was overloaded.



4.2 Alarm Process

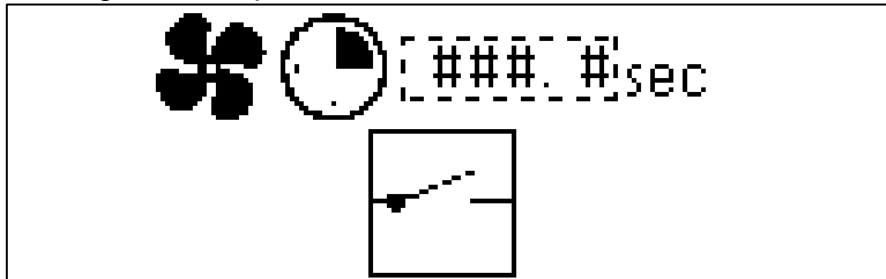
Shut down the compressor.
Inspect and solve the problem that triggered the alarm.
Restart the power and press "ENT" to reset the alarm message.

5. Auto / Remote Switch

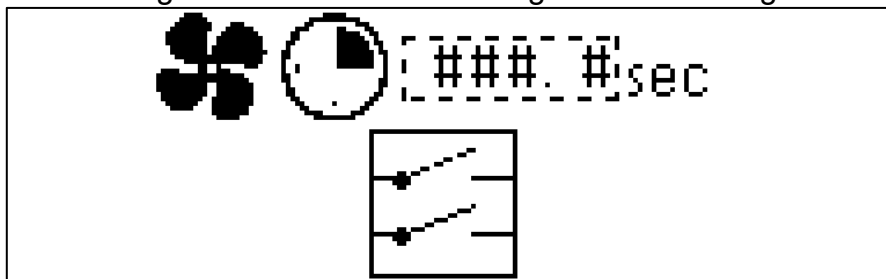
5.1 Confirm Dry Contact Settings

From main screen, press \Rightarrow button to switch to settings screen.

From settings screen, press \downarrow button to switch to the screen illustrated below.

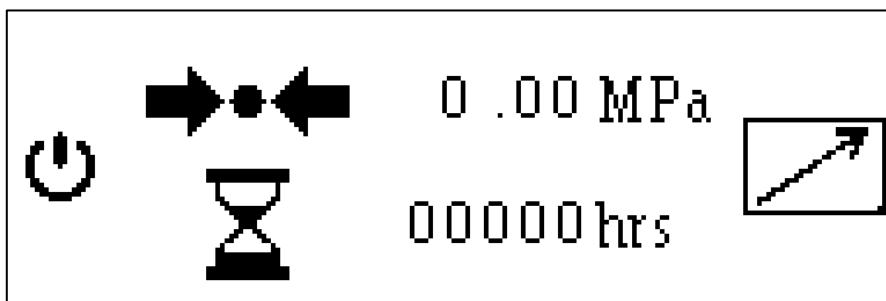


Press "1" button to switch the dry contact to one set or two sets, the below illustration being two sets and above being one set. Then go back to main screen.



5.2 Auto / Remote Switch Setup

In main screen, press "0" for 2 seconds and input the password, the control mode will change. When the control mode is changed to Remote, the main screen will change as illustrated below.



Notes



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