Baseline Chiller -Heat Pump-Rack Application

QuickStart guide (QSG)

Compressor Rack

1. Document History

Document Revision History				
Version	**Date yyyy/mm/dd**	**Authors**	**Modifications Details**	**Sw Release**
1.0	2020/05/28	T. Tremonti	Document Creation	Application 2.7.9 HMI Touch 1.8
1.1	2020/06/08	T. Tremonti	Updated compressor PID chart	Application 2.7.10 HMI Touch 1.8
1.2	2021/05/21	T. Tremonti	Added twin circuit rack configuration	Application 2.8.4 HMI Touch 1.17

2. Introduction

The purpose of this document is to provide to the end user the minimum competencies to use the Rack application.

The User Manual “Baseline_CH-HP-CR_UserManual_1.9_EN”shall be used and can’t be replaced by this document.

The information provided in this documentation contains general descriptions and/or technical characteristics of the performance of the products contained herein. This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications. It is the duty of any such user or integrator to perform the appropriate and complete risk analysis, evaluation and testing of the products with respect to the relevant specific application or use thereof. Neither Schneider Electric nor any of its affiliates or subsidiaries shall be responsible or liable for misuse of the information contained herein.

If you have any suggestions for improvements or amendments or have found errors in this publication, please notify us.

All pertinent state, regional, and local safety regulations must be observed when installing and using this product. For reasons of safety and to help ensure compliance with documented system data, only the manufacturer should perform repairs to components.

When devices are used for applications with technical safety requirements, the relevant instructions must be followed.

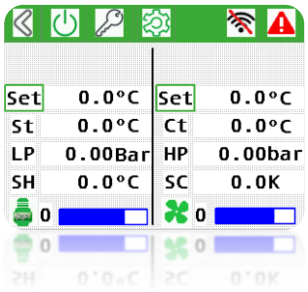
Failure to use Schneider Electric software or approved software with our hardware products may result in injury, harm, or improper operating results.

Failure to observe this information can result in injury or equipment damage.

3. User interface option

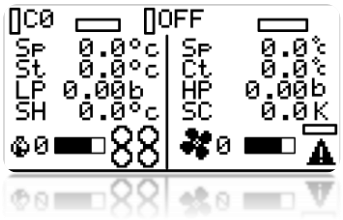
The user can control the application using the follow Human Machine Interface (HMI)

Touch color HMI



The Touch color HMI is a user interface dedicated for the end user operation
On-Off, setpoints, alarm monitoring and reset are easily available in the landing page.
A system overview is available in the landing page and detailed information are available base on the active user password.

PLC HMI



The OnBoard PLC HMI is a graphical user interface dedicated for the service and the basic operation.
It can be used also for the commissioning and allow the user to Save the Configuration end export in a USB memory.
The data logger file in CSV format can also be exported via USB in a dedicated form.
On-Off, setpoints, alarm monitoring and reset are easily available in the landing page.
A system overview is available in the landing page and detailed information and all parameter are available base on the active user password.

Web Server HMI

The Web server is a complete responsive Web interface that can be used either for basic operation or for service / troubleshooting. It has been developed to minimize the commissioning operation and reduce the commissioning time.
The web page is organized to help the user to easily find the required parameters.
Configuration parameters can be exported in a USB memory in a dedicated form.
The data logger file in CSV format can also be downloaded via Web server.
A real time chart is available to trace the behavior of the process variable.
On-Off, setpoints, alarm monitoring and reset are easily available in the landing page.
A system overview is available in the landing page.

In the next chapter we will guide you to do the follow operation

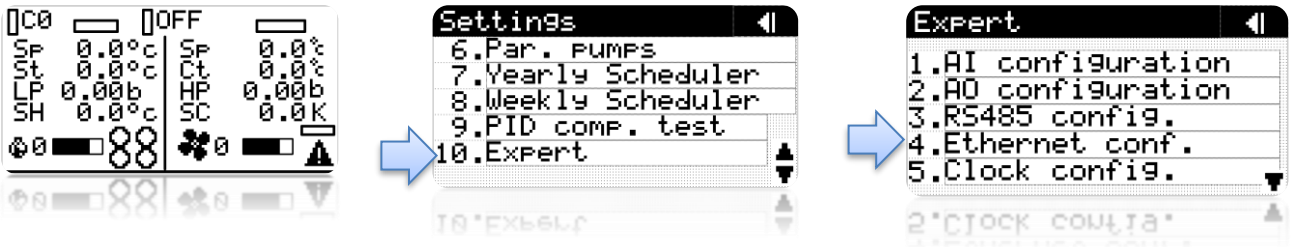
- Configure Web server access
- Detect alarm
- Reset Alarm
- On Off Unit
- Change Setpoint Compressor
- Change Setpoint Condenser

3.1. Configure Web server access

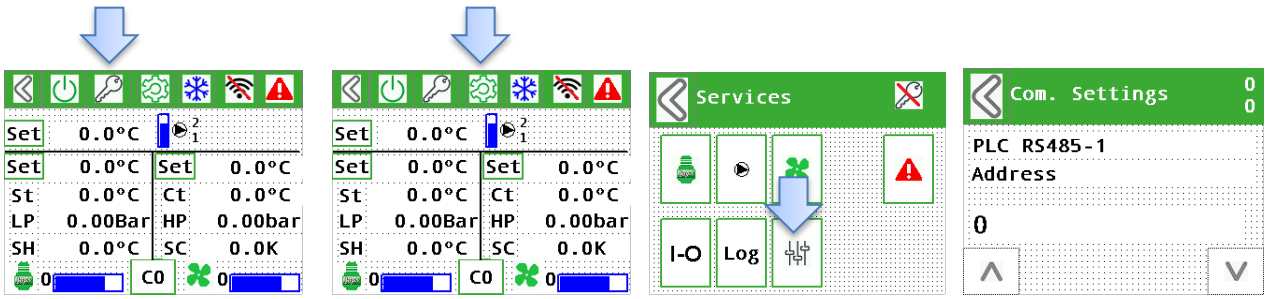
To use the web server for remote monitoring and data logging the Ethernet port shall be configured.
A direct connection PC to PLC will allow the user to get access to the webserver application.
The default parameter for the Ether port are

	PLC	PC/Laptop
IP Configuration	10.0.0.100	10.0.0.99
Net Mask	255.255.255.0	255.255.255.0
Default Gateway	10.0.0.1	10.0.0.1

The default credential to login to the web server page are:
User “oper1”
Password “1”
The IP configuration can be modified in the local HMI. From Home press 3 second OK to enter in the password Form and enter the Level 1 Password then follow the next navigation option.



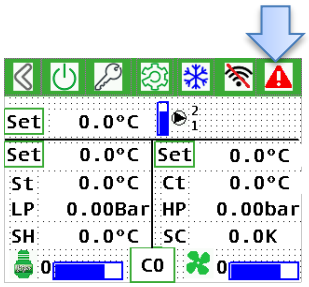
The IP configuration can be modified in the Touch HMI. From the Home the kay button and enter then L3 password Form and enter the Level 1 Password then follow the next navigation option.

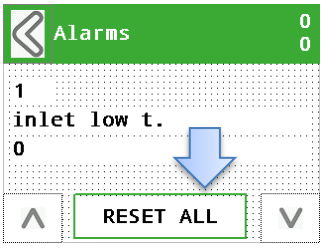


3.2. Detect alarm - Reset Alarm

The alarm Icon is available in the landing if an alar is active.

The user can select the alarm icon to get access to the alarm detail.

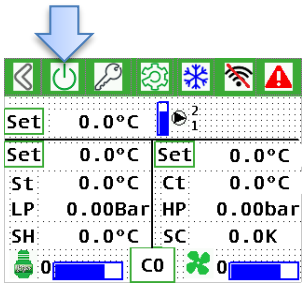




3.3. Unit On – Unit Off

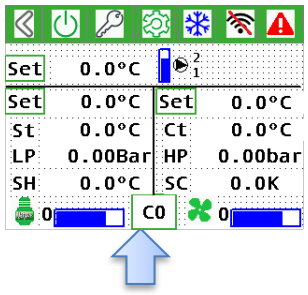
The Unit can be switched On / Off by click on the On/Off Status on the main form

If the unit is of from Digital input, it cannot be switched on: The On Off Icon will change and the symbol "DI" will be display in the center of the on-off Icon.



3.4. Switch between circuit 1 and circuit 2

The main page will show the information of the circuit 1 or 2. The user will be able to switch between the circuit by acting on the button highlighted in the next picture.

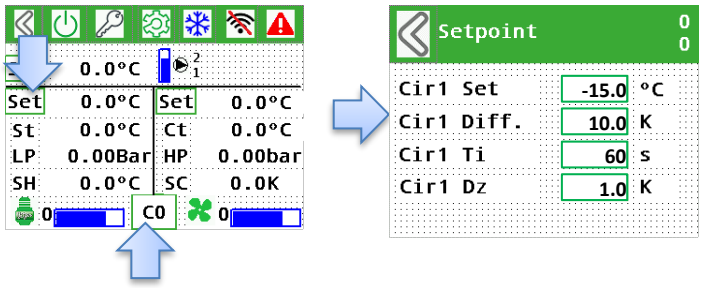


The suction setpoint 1 is available when the circuit 1 is selected and the suction setpoint 2 is available when the circuit 2 is selected.

3.5. Change Compressor Setpoint

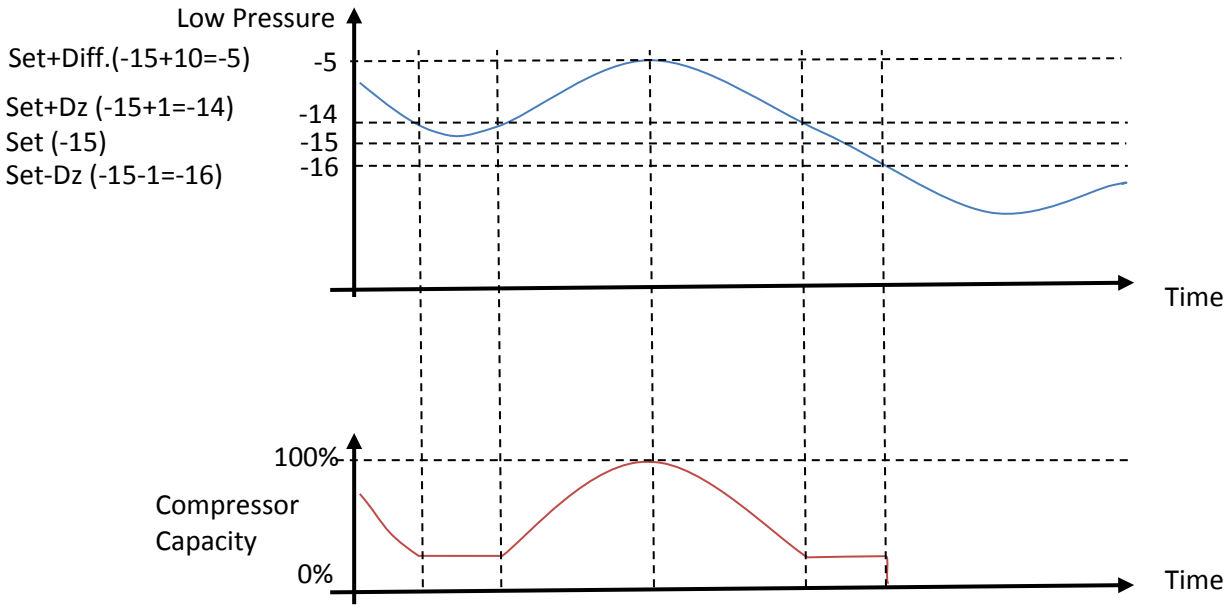
To change the regulation parameter the user can directly get access to the setpoint pages from the main form.

Compressor setpoint and other PID parameter can be modify with the Level 1 password permission.



The suction setpoint 1 is available when the circuit 1 is selected and the suction setpoint 2 is available when the circuit 2 is selected.

In case of regulation instability, the regulation parameter will react according with the follow chart.



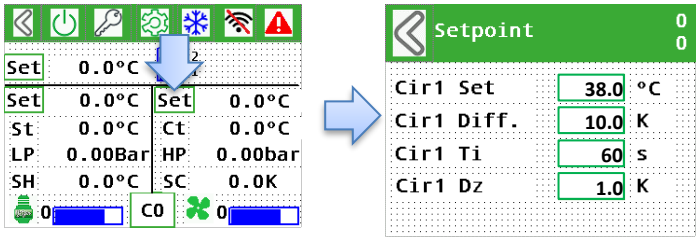
To improve the regulation stability in case of oscillation the follow action should be considered.

1- Increase the differential will slow down the compressor reaction.
2- Increase the Dead Zone will help to find a stable working point.
3- Increase the integral action will reduce the oscillation.
4- If the point 3 is not enough go back on point 1.

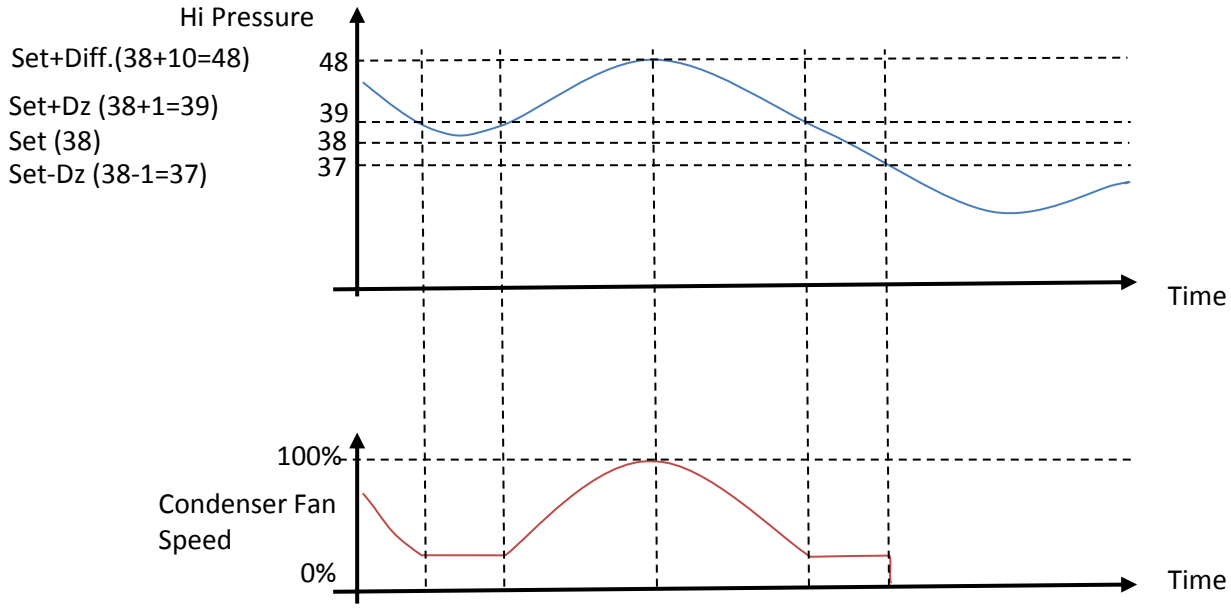
3.6. Change Condenser Setpoint

To change the regulation parameter the user can directly get access to the setpoint pages from the main form.

Condenser setpoint and other PID parameter can be modify with the Level 1 password permission.



In case of regulation instability, the regulation parameter will react according with the follow chart.



To improve the regulation stability in case of oscillation the follow action should be considered.

1- Increase the differential will slow down the compressor reaction.
2- Increase the Dead Zone will help to find a stable working point.
3- Increase the integral action will reduce the oscillation.
4- If the point 3 is not enough go back on point 1.