

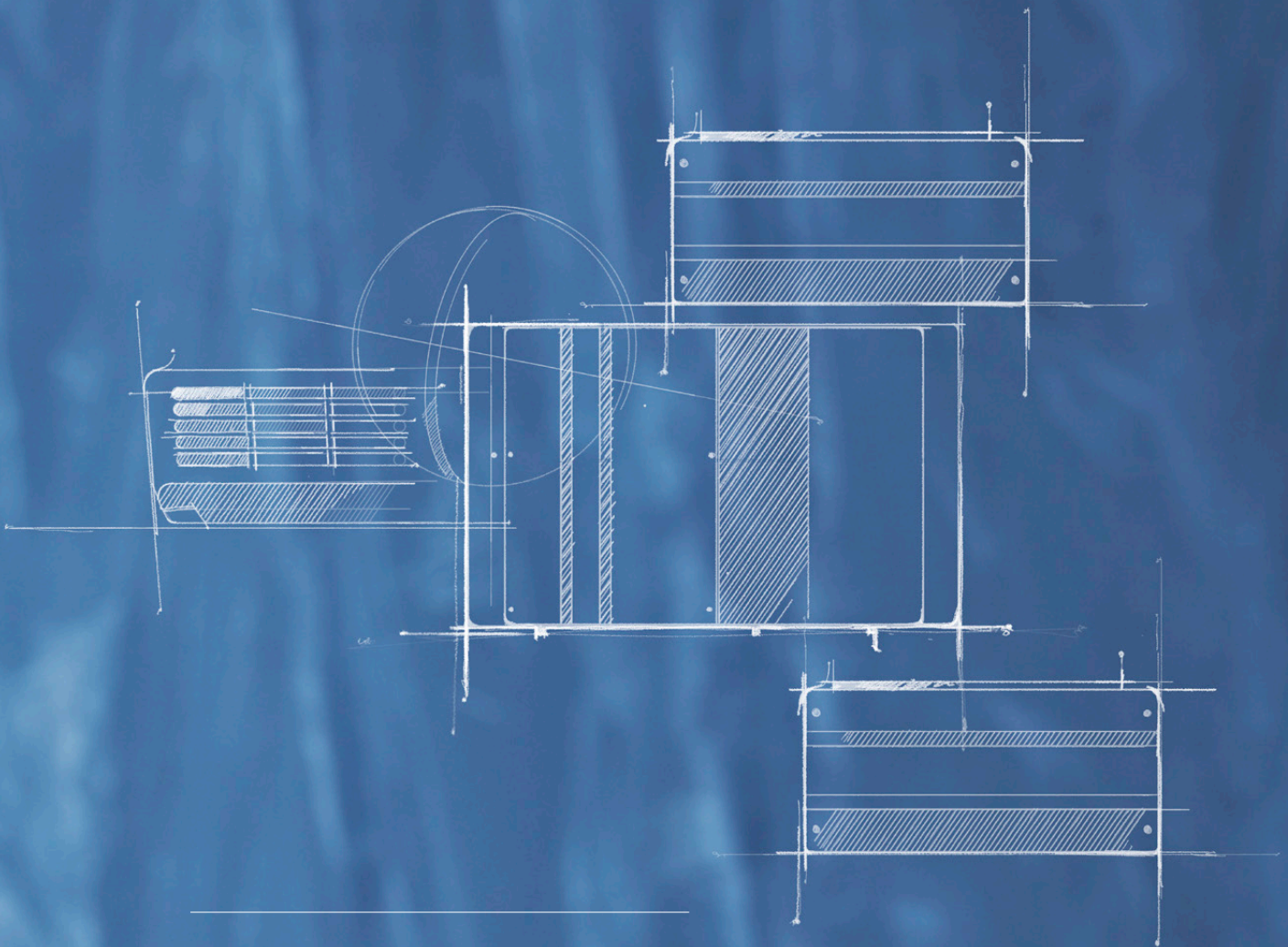
USER MANUAL

PROFITABLE REFRIGERATION

ECOFRIDGE LOWLINE/SLIMLINE/TOPLINE

HYDRAULIC REFRIGERATION

Translation of User Manual in original



HULTSTEINS DELIVERED the first refrigeration unit with hydraulic technology in 1962. Producing transport refrigeration with hydraulics was totally unique, and since then we have continued to drive the market forward with innovative solutions.

The result is reliable, fuel-efficient and environmentally-friendly refrigeration units which provide maximum customer benefit on the road.



ECOFRIDGE DISPLAY



ECOFRIDGE TOPLINE



ECOFRIDGE SLIMLINE

CONTENT

HOME SCREEN	5
NAVIGATION TREE	7
ZONE SETTINGS	8
FAULTS SCREEN	8
NAVIGATION SCREEN	8
SETTINGS SCREEN	8
SYSTEM SCREEN	9
DIAGNOSTICS SCREEN	9
SERVICE SCREEN	9
ELEVATED ACCESS SCREEN	9
TOUCH CALIBRATION SCREEN	9
CONFIGURATION SCREEN	9

! SERVICE AND ADJUSTMENT OF THE ECOFRIDGE MAY ONLY BE DONE IN CONSULTATION WITH HULTSTEINS OR A WORKSHOP AUTHORIZED BY THEM.

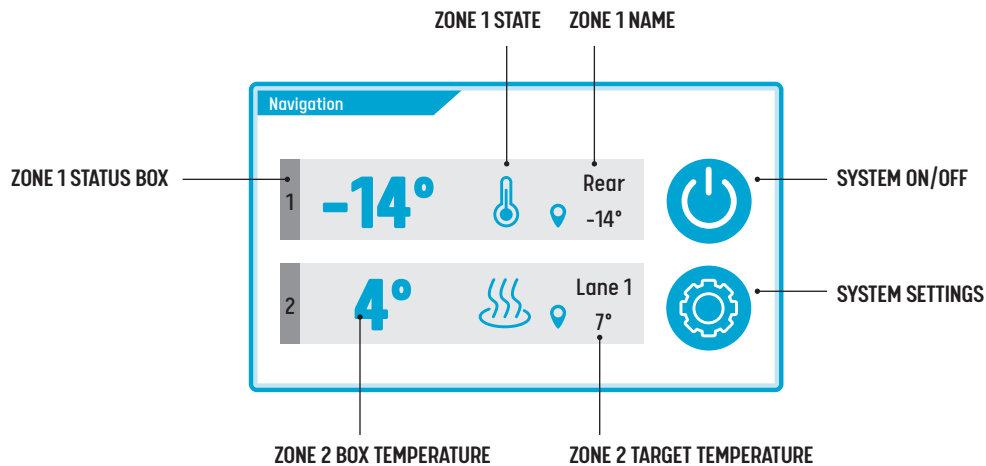
TILLVERKARE

Hultsteins Kyl AB
Fridhemsvägen 31
553 02 Jönköping
+4636161850

A certificate of conformity is enclosed in the folder that comes with the delivery of an Ecofridge. In the same folder are the drawings, diagrams, descriptions and explanations required for the operation, maintenance and repairs of an Ecofridge and to check that it is working correctly.

1 HOME SCREEN

THE HOME SCREEN on the HMI is the screen that will be presented to the user most of the time the fridge is operating, it presents an overview of the whole system. Below is an example screen from a two zone refrigeration system..



ZONE X NAME

This is the name set in the system configuration associated with this zone. Normally it reflects the physical location of the zone on the vehicle or the intended purpose of the zone.

ZONE X BOX TEMPERATURE

This is the current temperature reading for the box temperature of this zone in Degrees Celsius. The value is stored to a higher precision but rounded before display on the screen.

ZONE X TARGET

Temperature - This is the target temperature/ setpoint for this zone in Degrees Celsius. Touching anywhere on this zone's status box will take you to the screen for adjusting this setpoint.

SYSTEM ON/OFF

Pressing this button sends a command to start or stop the fridge depending on its current state. This button will change to display a stop symbol when the system is active.

ZONE X STATE

This describes the current control state of this zone. This reflects what the system is currently doing to this zone to reach or maintain the target temperature. There are multiple different states as shown below:



Idle - The zone is at temperature or within the acceptable deviation from its target temperature. It is not being actively cooled or heated.



Heating - The zone currently has a temperature below the target temperature and is actively being heated to reach target temperature.



Cooling - The zone currently has a temperature above the target temperature and is actively being cooled to reach target temperature.



Defrosting - The zone is currently having its evaporator defrosted. Active temperature control of this zone is suspended while the defrost process occurs.

SYSTEM SETTINGS Pressing this button will enter the system settings menu screen.

SYSTEM FAULTS This icon will light up if any system faults are present. Once lit up, pressing this icon will enter the system faults screen which lists all the faults for diagnosis. There are two levels of fault severity as described below:

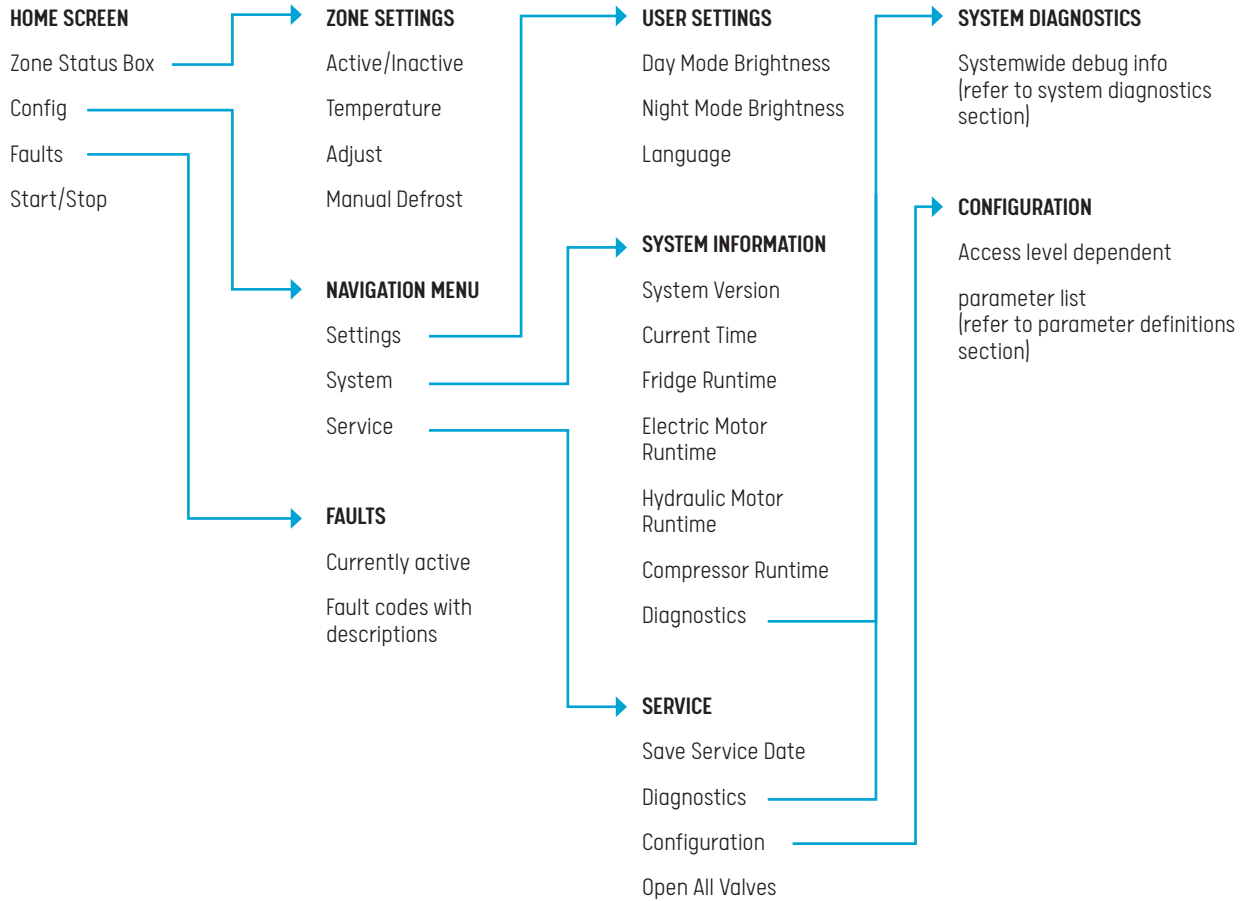


Amber - The system has some non-critical faults. These should be addressed but will not turn off the system or prevent it from starting. If the fault condition is removed, these faults will clear themselves.



Red - The system has some critical faults. These should be checked and carefully considered before starting the system. If the system is running, any of these faults will cause the system to turn off. These faults must be manually cleared by restarting the system.

2 NAVIGATION TREE



3 ZONE SCREEN

DISPLAYS the selected zones current temperature settings, can be adjusted if the setting is enabled on the system..




A manual defrost can be started using the defrost button the screen.



The zone can be disabled by pressing the disable button.

4 FAULT SCREEN

WHEN A SYSTEM FAULT is flagged up the user will be given access to the Fault Screen by pressing the icon . The fault screen displays a fault codes and text strings describing the issues. The user can use this these faults to troubleshoot the problem.

5 NAVIGATION SCREEN

THE NAVIGATION screen is your access to the Settings, System Information and Service screens, buttons are as listed below:



Settings



System Information



Servicing

The service screen will not be accessible unless the user has service level access and above.

THE PASSWORD for the Wi-Fi access point is displayed in the top right corner of the navigation screen when you are set to a higher access level, allowing the user to access system logs and browse configuration.



The button will switch you between the night-time and daytime brightness levels.

The navigation screen will also have an **'Exit Maintenance'** button while you have an elevated access level. Ensure this is pressed when you are finished using a higher access level as the current level of access is retained across system shutdowns.

6 SETTINGS SCREEN

THE SETTINGS screen gives the user access to various screen and system settings:

- Night mode and Day mode brightness control
- Language Options
 - English
 - Swedish
- Theme Settings
 - Light Theme
 - Dark Theme
- System Configuration

7 SYSTEM SCREEN

THE SYSTEM screen gives a general overview of system information. The system version is a compilation of the individual device version currently available to the system. The format of each version is A.B.C.D.E.F.G.H where:

A - High Voltage Control Board

B - Compressor Controller

C - Zone Controller 1

D - Zone Controller 2

E - Zone Controller 3

F - Dual Zone Controller

G - HMI

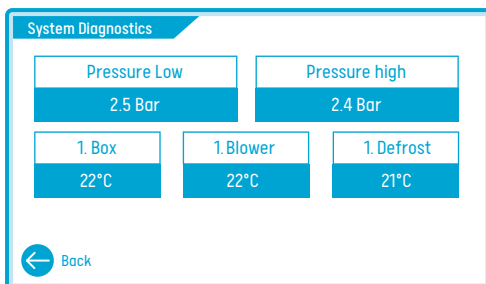
H - Wi-Fi Data Logger

The system screen will also show the current 24hr time available to the system, followed by the run time hours of mechanical devices on the system for determining wear or servicing requirements.

8 DIAGNOSTICS SCREEN

THE DIAGNOSTIC screen gives a further look into the system during runtime. The user will have access to a basic screen outlining the current value of the temperature sensors and pressure levels.

When navigated to while having higher access levels the user will have a deeper look into the current system states, showing all the information that is available to the system.



9 SERVICE SCREEN

THE SERVICE screen gives you access to a variety of servicing options including resetting component runtimes, entering or exiting service mode (open/close all valves), and setting the last date of service.

10 ELEVATED ACCESS LEVELS

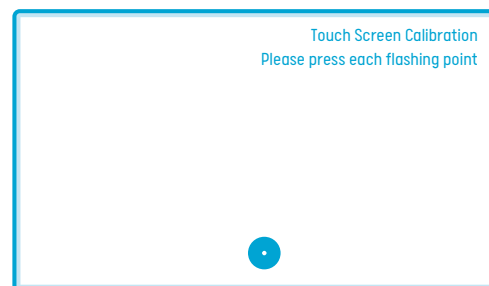
TO ENTER A STATE of elevated access level press and hold the cogwheel icon to bring up the password screen. Use the password generator tool supplied to obtain the password for the required access level. To exit the elevated access level, press the Exit Maintenance Mode button shown in the menu screen.

11 WI-FI PASSWORD

THE SYSTEM WI-FI is enabled and the password is displayed on the Menu Screen while in an elevated access level.

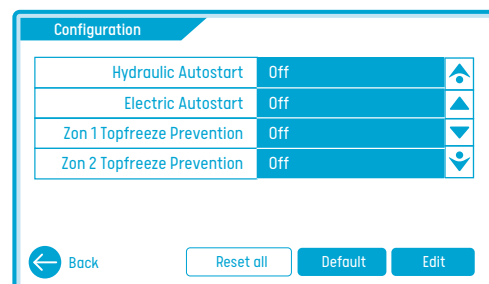
12 TOUCH CALIBRATION

TO PERFORM a touch calibration simply hold a finger on the screen during boot while the Hultsteins logo is fading in and before the loading bar appears. The screen will turn black signalling calibration mode is ready to be entered. Lifting the finger placed will display the calibration screen, simply follow the instructions on screen to finish the touch calibration.



13 CONFIGURATION

THE CONFIGURATION screen gives you a number of choices as seen below.





DIESEL FREE REFRIGERATION





COOLNESS ON THE MOVE

August 20, 2024