TECHNICAL PRODUCT INFORMATION

HM-0710
CONTROL PANEL 2

INDEX

PRODUCT INFORMATION

Hammar Remote Release Systems (RRS) are designed to release life rafts, evacuation systems and other lifesaving equipment on board vessels of all types, with the least possible effort. Whether you are a ship owner, designer, builder or onboard safety officer, Hammar Remote Release Systems offer flexible solutions with decisive advantages – for both safety and economy.

The System can activate H2O ERU (Electronic Release Unit) or relay outputs (depending on configuration). It is thus a very flexible system for the management of safety appliances on board.

The Control Panel 2 is a Control Unit in an Electronic Remote Release System (ERRS), it is Hammar's most advanced Control Unit customized solutions for activation of several lifesaving appliances, evacuation systems or loads.

The Unit is capable of handling up to 10 Release Units (ERU) and 2 Input Relays and another 2 ERUs + 4 Input Sensors with small modifications.
A Control Panel 2 can play a centralized role in controlled, safe and fast evacuation on a vessel. CP2 is programmed on delivery based on the set-up on the individual vessel and can activate ERUs individually or in a predefined sequence differentiated in time.

It is a self-checking system and will not bring attention until awoken from it's idle state or an error is detected. The CP2 may be used to open hatches or close fire doors. The HM-0710 has a rechargeable back-up battery (HM-0725) in case of power failure on the ships 24V DC emergency power supply.

INPUT SENSORS

Input Sensors are optional input connecting to your Control Unit to increased functionality. These relays inform the Control Panel 2 when they detect abnormalities or when a switch has been turned on. Depending on the urgency the Control Panel 2 may proceed with a launch or generate an alarm.

Examples of Input Sensors are;

- Extra release push buttons located at the embarkation station
- Sensors for water detection in critical spaces
- List Angle Detection (LAD) can detect a critical list angle from which a vessel cannot recover and release LSA
- Hydrostatic Pressure Switch (HPS), a sensor detecting water pressure

24 V

Possible option

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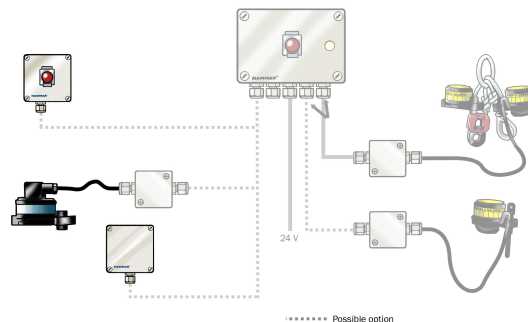
RELEASE UNITS

Release units can be activated from one or several Control Panel 2 or from added devices, Input Sensors, connected to the panel's inputs. The system can be configured to activate in forced manual sequence, forced automatic sequence, combination of these or by manual selection of available outputs or groups of outputs. Each panel has 10 outputs for releasing H20 ERU, 2 relay outputs and 1 alarm relay output.

24 V

········· Possible option
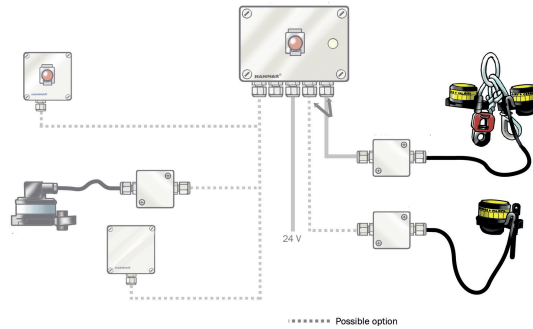
SYSTEM CHECKS

Control Panel 2 automatically perform system checks, which monitors internal battery, emergency power voltage, ERU circuits and the wiring to Input Sensors. If the system check detects an error, an alarm message will appear on a display and on an alarm output if connected.

POWER SUPPLY

The Control Panel 2 is powered by the ship's 24 VDC emergency power supply. Control Panel 2 (HM-0710) is also equipped with a back-up battery to enable operation even if the ship's power supply is down.

PROGRAMMABLE

The performance of the system is defined by the customized configuration of the Control Panel 2. The programming allows the system to meet specific requirements for each installation.

The configuration of the Control Panel 2 is individually programmed for every vessel and position onboard. The configuration parameters are saved at Hammar and it is possible to quickly deliver a preconfigured replacement panel if needed.

Customization Parameters:
- Enable activation of LSA in the Control Panel or in any connected Control Panel in a network.
- Create sequences of activation that must be triggered in a specified order.
- Create sequences with specified time delays between activations.
- Enable manual toggle between connected LSA or groups of LSA from the Control Panel.
- Give each connected LSA a name and description that will be shown on the display at manual activation.
- Program Control Panel 2 for activation of any connected LSA based on commands from Input Sensors.

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OPEN DOOR
RELEASE MES
RELEASE RAFT 1 SB fwd
RELEASE RAFT 2 SB aft

MAINTENENCE   SELECT

4 INPUT SENSORS +2 OPTIONAL

10 RELEASE UNITS + 2 RELAYS

BACK UP BATTERY

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TECHNICAL SPECIFICATIONS

TEMPERATURE RANGE

Control Panel 2 operates between -30 C to +65 C
Protect from environment when installing.

INTERNATIONAL PROTECTION RATING

Control panel: IP 66
Connector boxes for H20 ERU: IP 66

WEIGHT

ERRS control panel 2: 2800 gram
Connector box for H20 ERU: 150 gram

DIMENSIONS

L x H x D: 222 x 125 x 84 mm

POWER SUPPLY

Main source: 24 VDC max 0,5 A (16-36 VDC) , Shall be installed to ships emergency power
Rechargeable back up battery: Pb, 6 VDC

I/0

Inputs: 4 (closing contacts) with broken wire detection
Isolated Inputs: 2
Outputs: 10 (for H20 Electronic Release Units, ERU)
Relay outputs: 2
Alarm relay output: 1 (normally closed when system ok)

USER INTERFACE

Display: OLED display - size 63x33 mm
Membrane switch: 6 buttons

OPERATIONAL LIFETIME

Expected 15 years

CABLES

Cable from Control Panel to Release Switch – HM-0436
2 x 2 x 0,75mm2, diameter 10mm
Cable from Control Panel to connector box – HM-0440
1 x 2 x0,75mm2, diameter 8mm
General specification: Marine approved, screened. If the cable is sourced locally, it is important that the same quality and dimensions are used. Use of larger diameter cable will not fit the cable glands.

Note: Check electric wiring drawing.

CABLE GLANDS

Standard cable glands included with delivery:
M16 metal EMC Cable Glands for cable diameter 5,0 -10,0 mm, screen diameter 3,5-8,0 mm
M20 metal EMC Cable Gland for cable diameter 7,5 – 14,0 mm, screen diameter 5,5-11,0 mm

CONFIGURATION

N° of release objects (life rafts). Display text/language/sequence.
Several CP2 may be connected in a network.
All parameters are programmed into the system by C M Hammar upon delivery. There are several possibilities to further adapt the system. Please consult us for specific requirements.

COMMUNICATION PROTOCOL

RS485

CONNECTION TERMINALS

Max. wire area 2,5 mm2

MAXIMUM CABLE LENGTHS

The maximum wire length between each control panels is 1000 meters.

The maximum wire length between a control panel and its connected H20 ERU is 150 meters.

MAXIMUM NETWORK OF CP2

Up to 8 control panels can be connected in a network giving a maximum of 80 H20 ERU outputs, 16 relay outputs and 48 inputs for the complete network.

SYSTEM TEST

The system continuously runs a system check for battery, power supply, H20 ERU, cables and for the panel communication.
An error relay output can be connected to any external alarm system. System error is shown on the display.

DOCUMENTATION and CERTIFICATION

Product Information, Product Data Sheet, User Manual, Installation Manual & Technical Product Information. CAD- Dimensional drawings available upon request

GROUND CONNECTION DEVICE

The device is designed to ensure a good permanent electrical connection between the ERRS Control Panel 2 system and to the ships ground. Each Control Panel 2 must be connected to ships ground. The Ground Connection Device is available in two sizes for different cable diameters.

Ground connection device M20 for cables diameter of 6 -12 mm, screen diam. 4,5 – 10 mm. Part no: HM-0730
Ground connection device M25 for cables diameter of 12 – 18 mm, screen diam. 7 – 14 mm. Part no: HM-0735

TRANSPORTATION AND STORAGE

No restrictions for transportation, Battery is of lead type.
Store in temperate, dry and away from sun light

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INSTALLATION MANUAL

PLACEMENT

Control Panel 2

The CP2 shall be placed in a protected position with respect to environment, mechanical damage, and unintended activation from unauthorized persons. For outside placement use a protective enclosure, seal of the enclosure with an easy-to-break seal.

The front and back part of the CP2 must be mounted together, for achieving correct environmental protection. **Separating the parts in the installation will void guarantees.**

Note cable glands are facing downwards and will add increase the dimension of the CP2 with approximately 10 cm

Ground Connection Device

Preferably added to the incoming power supply cable. The device shall be mounted in vicinity of Control Panel 2.

Connector Box

The standard length of an H20 ERU cable is 1,8 m. The Connector Box shall be installed in such a way, installing the ERU to the box is made easy. Excess ERU-cable may be coiled with a cable tie. The H20 ERU with cable and Connector Box shall be mounted in a way to avoid mechanical damage. Mount the Connector Box with cable glands horizontally to avoid any water ingress. Seal of the cable glands whenever a Box is left without cables to avoid water ingress.

Input Sensors

Intelligent Remote Push Button, IRPB

The IRPB shall be placed in a protected position with respect to environment, mechanical damage, and unintended activation from unauthorized persons. For outside placement us a protective enclosure, seal of the enclosure with an easy to break seal. Each IRPB switch must be marked with the object it will release when the button is activated

Water Sensors

Refer to Installation Manual for Water Sensor.

Note! Before performing service or installation: secure rafts.

Note! For Control Panel 2 installed before Dec 2021: A battery connected to the system it will automatically take over the power supply to the CP2 system when the ships emergency power supply is switched off or interrupted. The battery will lose capacity by repeated deep discharging cycles. To avoid the battery discharge, disconnect in situations where an interrupted emergency power supply can be expected, for example during a stay at a shipyard.

Be aware that each Control Panel 2 in a network has a backup battery.

Note! Do not make any machining to the CP2, drill extra holes or fittings. This will void any guarantees.

Every Control Panel 2 is accompanied by an electrical wiring diagram for the specific installation.

INSTALLATION OF CABLES

See the Wiring Diagram for the connections inside of the CP2.

Cables shall not be installed in cable groves containing high voltage cables. Make sure the cables are installed so they are protected against mechanical damage. For the enclosure cable glands to seal properly; the outer diameter of the cables must be in within specifications, see specification in wiring diagram.

Cable Types

Marine approved screened cables shall always be used. This is very important for the function of the system.

CABLES FOR OUTPUTS: Maximum length 150 meter.
For cables with a length of maximum 75 meter use 2x0.75 mm2 screened cable.
For cables with a length of 75 to 150 meter use 2x1.5 mm2 screened cable.

CABLES FOR RELAY OUTPUTS: Maximum length 150 meter.
For cables with a length of maximum 75 meter use 2x0.75 mm2 screened cable.
For cables with a length of 75 to 150 meter use 2x1.5 mm2 screened cable.

CABLES FOR INPUTS: Maximum length 150 meter.
Use 2x0.75 mm2 or 3x0.75 mm2 screened cable.

CABLE FOR 24VDC POWER SUPPLY: Maximum length 150 meter.
For cables with a length of maximum 75 meter use 2x0.75 mm2 screened cable.
For cables with a length of 75 to 150 meter use 2x1.5 mm2 screened cable.

CABLE FOR ALARM OUTPUT: Maximum length 150 meter.
Use 2x0.75 mm2 screened cable.

CABLE FOR COMMUNICATION BETWEEN CONTROL PANELS: Maximum length 1000 meter.
- For cable with a length of maximum 500 meter use 2x2x0.5 mm2 twisted pair, screened cable.
- For cable with a length of 500 to 1000 meter use 2x2x0.75 mm2 twisted pair, screened cable.

Connection cable screens to EMC cable glands

NOTE: All cable screens shall be connected to ships ground and in one end of the cable only.

The CP2 is delivered with EMC cable glands for the connection of the screen to the CP2 enclosure. Only use the original type of cable glands. Additional cable glands can be ordered from CM HAMMAR AB.

The back part of CP2 shall be connected to ships ground by the Ground Connection Device, see section below.

If the screen of the 24 VDC power supply cable is connected to ground at the switchboard it shall then be isolated from the cable gland and enclosure at the CP2 panel.

If more two or more CP2 are connected in a network the communication cable between the control panels shall be connected in the EMC cable gland in only one of the control panels. At the other end of the cable the screen shall be isolated from the cable gland and enclosure.

EMC Cable Glands

The metal EMC cable glands are designed to ensure a good connection between the cable gland and the cable screen. Inside EMC cable glands there are contact fingers that grips around the cable screen and connects the screen to the cable gland and the enclosure.

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INSTALLATION OF CABLE GLANDS
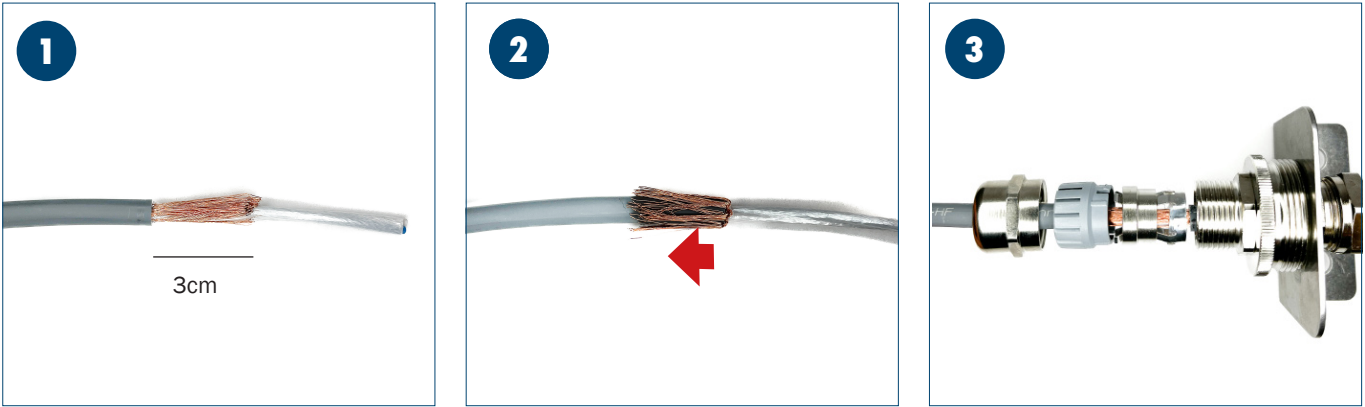
1 Strip the cable and cut the screen to approximately 3 cm.

2 Fold back the screen before inserting the cable into the cable gland.

3 Insert the cable into the cable gland until the screen gets in line with the inner end of the cable gland. This will ensure that the EMC fingers will connect the screen to the cable gland when the cable gland nut is tightened.

INSTALLATION OF GROUND CONNECTION DEVICE

The screen for the 24VDC power supply cable shall be connected to ground in the Ground Connection Device Mount the Ground Connection Device to a clean metal surface that gives a good connection between the device and ships ground.
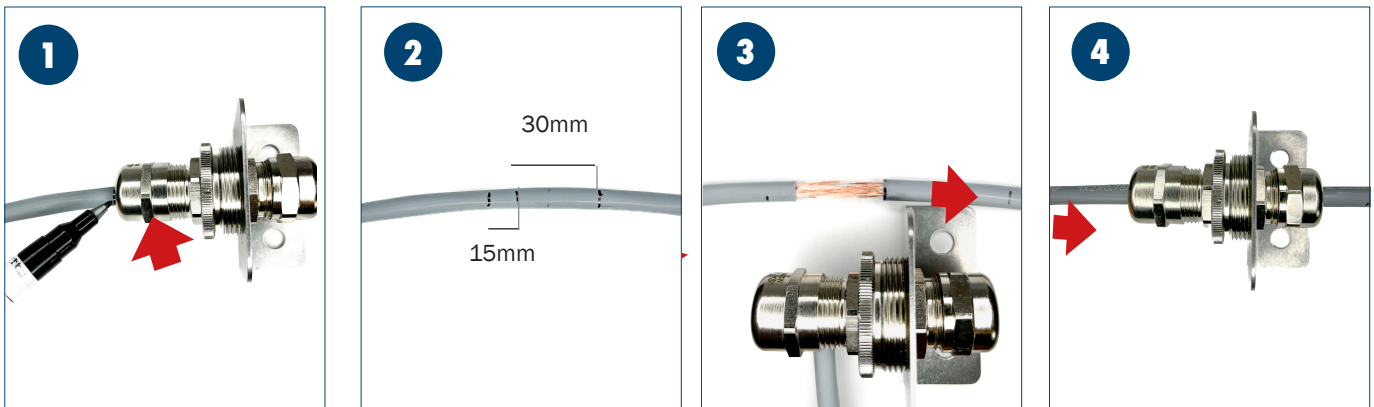
1 Insert the cable through the device and make a mark at the cable where it enters the EMC cable gland. Note that only the left cable gland in the pictures below is an EMC cable gland! The cable gland to the right is a standard cable gland.

2 Pull the cable out of the device and make another mark 15 mm from the first mark. Make a third mark 30 mm from the second mark.

3 Remove the outer isolation between the second and the third mark to expose the screen of the cable.

4 Insert the cable into the device until the first mark is in line with the nut on the EMC cable gland and tighten both cable glands. The EMC cable gland is the cable gland on the left side of the device in the pictures.

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Inside Control Panel 2

The terminals inside the CP2 enclosure are of spring-loaded type. Inset a small screwdriver in the slot beneath the opening for the wire and bend gently downwards to open the terminal to insert the wire. The maximum wire area for the terminals inside the ERRS CP2 enclosure is 2,5 mm2.

Multiple CP2 in Network

The communication between ERRS CP2 Control Panels in a network is a RS 485 communication using 3 wires.

Power Supply

Emergency power shall be connected to all ERRS Control Panels. The voltage level must be within the range 16 - 36 V DC
The maximum current consumption for the system is 0,5 A. Internal fuses S1 – 1.0AF 5x20 mm glass tube fuse.
See wiring diagram for maximum cable length and area.

External alarm

The CP2 can be connected to the ships general alarm system. The external alarm function is an isolated normally closed contact (when system is ok). When an alarm occurs, the contact will open and remain open until the cause for the alarm is sorted out. Maximum 1,0 A and 24VDC.

TESTING AND VERIFYING THE INSTALLATION

The main purpose of performing the testing is to verify correct set up and programmed installation. For example, that rafts release in the intended order.

Material Needed
*   ERU Emulator, HM-0467, Please see User Manual for instructions of use.
        o If Emulator is not available, testing Outputs by using 200mAF glass tube fuses is possible, see separate instruction after this section.
*   Jumper Wire

The Control Panel 2 will not be damaged by activating outputs with jumper wires connected between the output terminals.

Test and verification of connections

Setting up the System for Testing Outputs
1. Secure all LSA connected to the ERRS to prevent any unintended launching in case of a mistake in the testing procedure.
2. At each Connector Box
        o Open the Box and disconnect the wires to the H2O ERU, chose one of the two options below:
                1. Connect a ERU Emulator (one in each Box, in as many Boxes as available Emulators). No polarity of cables on the Emulator
                2. Connect Jumper Wire between the terminals.

3. On the ERRS CP2 control panel push the button MAINTENANCE to enter the maintenance menu. Use the toggle buttons (yellow arrow up/down) to select menu item 2 - SYSTEM ERRORS and push the SELECT pushbutton. The system shall now report back that "there are no errors".

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Testing the systems outputs

1. Press the ON/OFF pushbutton for 5 seconds to enter Activation Mode (a progress bar will go from left to right on the display when the button is pushed). The display will now show items possible to release.
2. Toggle to the corresponding Output to which an ERU Emulator is connected.
3. At the CP2, Push the RELEASE button for 5 seconds (a progress bar will go from left to right on the display when the button is pushed). When the display reports "RELEASING: [chosen Output]", the RELEASE button may be let go.
4. At the Connector Box, confirm that the ERU emulator connected to chosen Output is flashing RED.
    o. If flashing GREEN, proceed to Troubleshooting.
5. At the Connector Box, Remove ERU Emulator and install Jumper Wire in terminals.
6. Proceed to next Connector Box with Jumper Wire and install ERU Emulator in terminals. Confirm ERU Emulator is indicating GREEN flashes.
7. Repeat steps 4 – 8 until all Outputs have been verified correct.
8. Return to the Control Panel 2

    o Push ON/OFF button to exit Activation Mode
    o Push the MAINTENANCE pushbutton.
    o Toggle to menu item 5 - RESET SYSTEM.
    o Push SELECT

9. For each Connector Box connect the designated H20 ERU.
10. At the CP2 panel, confirm no errors are present by:

    o Confirming OLED Display is without information.
    o Go to MAINTENANCE menu, select menu item 2 - SYSTEM ERRORS and push the SELECT. The system shall now report back that "there are no errors". Push once on MAINTENANCE or ON/OFF button to exit menu.

11. System testing is now completed.

Optional, Testing the Using Fuses

Connect a fuse between the terminals in ERU connection box for the output to be tested. Connect jumper wires between the terminals in all other ERU connection boxes. Place an observer at the Connector Box of the designated Output.

Push the ON/OFF pushbutton on the CP2 panel and toggle to and select the Output to be tested. Pushing the RELEASE pushbutton, the fuse has to be monitored closely at the activation to be able to visually verify that the activation current reaches the fuse. The fuse will give a very short flash of light at the activation. Even if the output is ok, it does not always burn the fuse. Repeat until all Outputs are tested. Finalize by completing steps 11-13 above.

If the system is configured for activation by activating the CP2 system inputs, it shall be verified that the activation of the different inputs activates the correct outputs or sequence of outputs

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Trouble Shooting at Installation

The general guidance for troubleshooting is to start with a reset (MAINTENANCE - 5. RESET SYSTEM). Check if error remains. If Display shows "Check System", see MAINTENANCE - 2. SYSTEM ERRORS. Proceed to section Trouble Shooting in User Manual.

If error remains, work from the CP2 and outwards towards the Connector Box and H20 ERU.
- Measure input voltage to 24VDC.
- Check connection between front and back part of CP2 Enclosure
- Check for cables with poor connections.

Confirm Ground Connection Device is connected and screen in cables are touching cable glands, if not there might be some interruption from other devices

ERROR	SOLUTION
After activation, ERU Emulator is flashing GREEN	Confirm correct installation of wiring and no damage to cables.
CP2 in network are not communicating	• Check correct front part is connected to matchingback part, both parts are marked with a label for position. Reefer to Wiring Diagram. • Check ID-switch is in correct position according to Wiring Diagram. • Check the connection of the 3 wires in cables connecting CP2s are in correct ports, refer Wiring Diagram.
ERROR CODES FOR CP2 IN NETWORK	
"Communic ([ID of panel)" -	Test of communication between control panels connected in network has failed to specified panel. • Check wiring between panels for breakage. • Confirm correct wiring according to Wiring Diagram.
"Remote (ID of panel)" -	Faults in other Control Panels in the network. • Confirm correct front part is mounted in correct back part.
"Address"	Incorrect network address (ID) in another panel. Appears with Error Code "Communic ([ID of panel]). • Check ID switch is in the correct setting in the specified panel.

Technical Product information Control Panel 2, 202405_ver2

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USER MANUAL

INTRODUCTION

The Control Panel 2 (CP2) is the Control Unit in an Electronic Remote Release System (ERRS) from Hammar. Remote Release Systems can release Life Saving Applications from a remote position onboard. It is likely this system was chosen for your vessel to promote safer evacuation, easier monitoring, and centralized control of releasing Life Saving Appliances, such as life rafts.

A Remote Release System when installed on a SOLAS vessel shall have suitable Release Units to allow for the Float-Free Arrangement of Life Raft. Hammar supply several different options of Release Units under the H20 umbrella.

The parts in an RRS are divided into Control Unit, Installation Components, Release Units, and Input Sensors. The system works like the light switch for turning on the light on your, for example, bridge, from the Control Unit (light switch) you can release H20 ERUs (light bulbs), the signal travels thru wires

(Installation Components) to the designated ERU. You may also have motion detectors for your light, sensors may be included in a RRS in form of extra Release Switches or Water Sensors (Input Sensors).
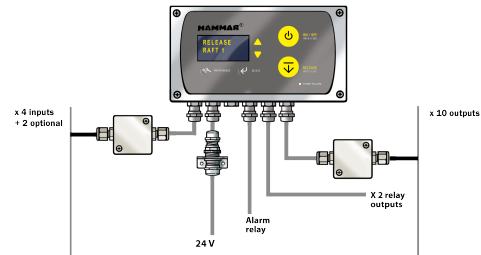
When installed the Control Panel 2 needs minimum attention and service. Every second year you need to replace your ERUs and in between the CP2 OLED display will tell you how and when you need to interact with the system. When an ERU is connected to a Control Unit it is considered an Output from the Control Units perspective.

ERUs connected to the CP2 may be activated in a forced manual sequence or as an automatic sequence or as a combination of manual and automatic sequence. Scrolling between the available outputs or group of outputs can be enabled or disabled. Using Input Sensors such as a Water Sensor, the CP2 can be programmed to different levels of autonomy and using a Remote Push Button, local release of the LSA can be added. Still with full monitoring from the Control Panel 2.
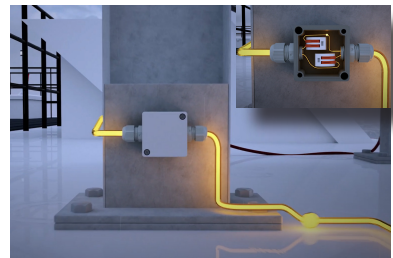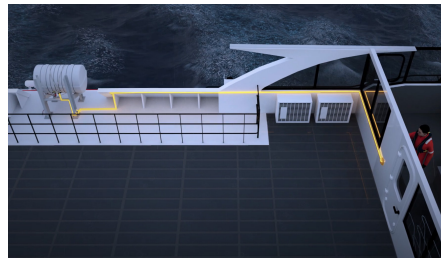
IMPORTANT: Each Control Panel 2 shall be provided with a wiring diagram.

KEYBOARD
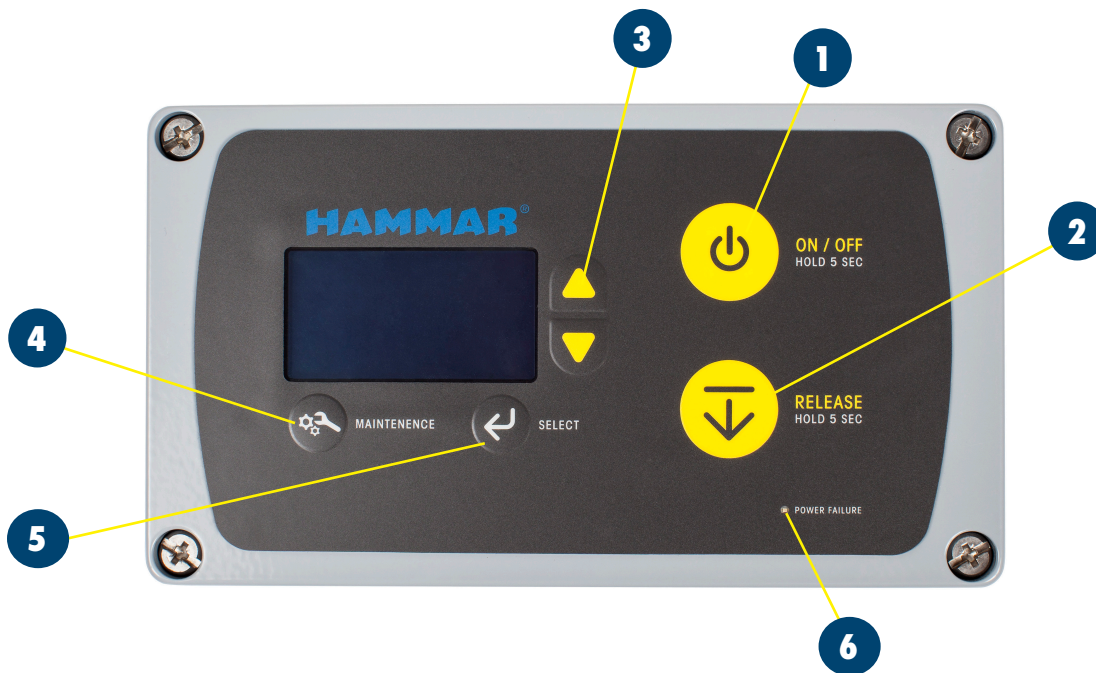
1 ON/OFF button: takes the system between Sleep Mode and Activation Mode. The button must be pressed for 5 sec to turn the system into Activation Mode (a progress bar will go from left to right on the display when the button is pushed). In Activation Mode display will show items possible to release. A push to the ON/OFF button will take system to Monitoring Mode.

2 RELEASE button: in Activation Mode, is used to activate the H2O ERU or relay outputs by pressing and holding the button for 5 sec (a progress bar will go from left to right on the display when the button is pushed). When Activation Mode is off the RELEASE button is without function.

3 Scroll buttons: (arrows to the right of the display) are used to toggle between objects on the display. The scroll buttons are also used in the MAINTENANCE menu.

4 MAINTENANCE: in Monitoring Mode pushing the MAINTENANCE button enters Maintenance Mode. It is also used to exit a sub-menu in the Mode.

5 SELECT: used to select options in menus in Maintenance Mode.

6 POWER FAILURE led indicator.

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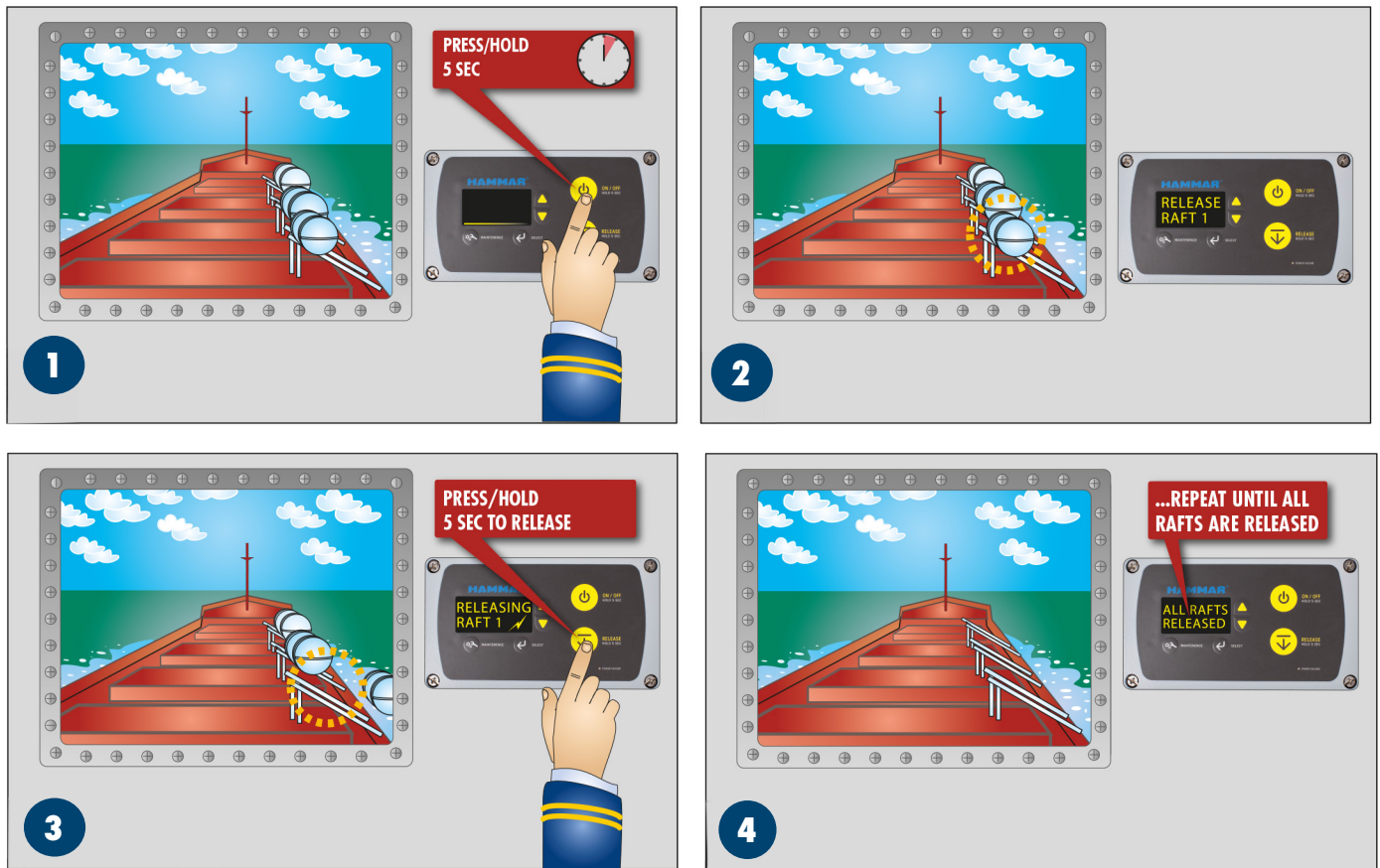
1. Push and hold the ON/OFF button for 5 sec (a progress bar will go from left to right on the display when the button is pushed)

2. Scroll with yellow arrows (if possible in your configuration) to select the item you want to release.

3. Push and Holding the RELEASE button for 5 sec (a progress bar will go from left to right on the display when the button is pushed).

4. Raft/output released. Repeat until all rafts are released.

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SYSTEM MODES

Monitoring Mode

The system is in default in Monitoring Mode. The display is blank if no errors are present. If an error is detected the display will show "Check System", see Maintenance Mode.

Push ON/OFF once to enter Monitoring Mode.

Activation Mode

Activation Mode is entered by pushing and holding the ON/OFF button for 5 sec (a progress bar will go from left to right on the display when the button is pushed).

In Activation Mode Outputs may be activated by pushing and holding the RELEASE button for 5 sec (a progress bar will go from left to right on the display when the button is pushed).

The display will show a list of the possible outputs to activate. If the scroll function is in the software configuration for the specific Control Panel the Scroll Buttons may be used to scroll between options to release.

To exit Activation Mode, push ON/OFF button once.

Maintenance Mode

To enter Maintenance Mode, confirm system is in Monitoring Mode and push the MAINTENANCE button.
In the Maintenance Mode the system status can be examined.
The menu has 7 sub-menus:
1. – System status
2. – System errors
3. – Log of events
4. – Service mode
5. – Reset system
6. – Programming
7. – Battery test

Use the Scroll Buttons to choose a sub menu and push the SELECT button to enter the menu.

1. System status
Provides status information for the Control Panel2:
1. – Supply voltage
2. – Battery voltage
3. – Internal temperature in CP2 enclosure
4. – System input no: 1, on or off
5. – System input no: 2, on or off
6. – System input no: 3, on or off
7. – System input no: 4, on or off
8. – Number of outputs activated after last system reset
9. – Version of installed system software
A – Time of operation after last system reset
B – Address of local control panel in network
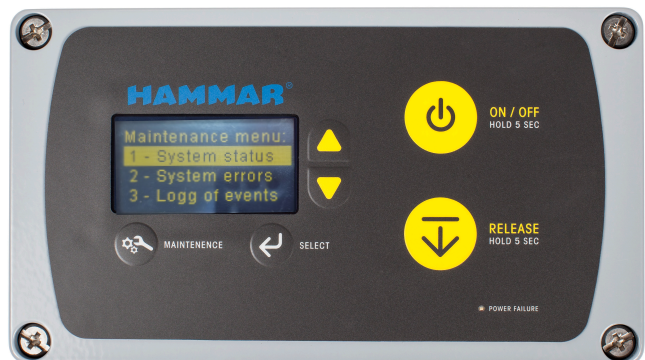
2. System errors

Provides information about system errors.

Error Codes:
- "Supply voltage" - Low voltage of power supply.
- "Battery voltage" - No connection to back-up battery.
- "Battery capacity" - Low voltage of back-up battery.
- "Temperature" - High or low internal temperature.
- "Output [Output number]" - Fault in circuit to H2O ERU unit, Output as per Wiring Diagram.
- (Optional) "Input [Input number]". Broken circuit for "Broken Cable"-test on systems using an Input Sensor. Input as per Wiring Diagram

For installation with multiple CP2 in network:

- "Communic ([ID of panel)" - Test of communication between control panels connected in network has failed with specified panel.
- "Remote ([ID of panel])" - Faults in specified Control Panel in the network.
- "Address" - Incorrect network address (ID) in another panel.

3. Log of events

List of system events. Can be used by CM Hammar to analyse eventual system failures.

4. Service mode

When selected a message showing "Service ongoing." is displayed on the display. This is to provide information to the ship's crew that the system is taken out of service due to ongoing service on the connected lifesaving equipment. Press ON/OFF to exit from Service mode.

5. Reset system

When selected a system reset is carried out for the Control Panel 2.

A system reset shall be carried out after any output has been activated and the connected (used) H2O ERU has been replaced with a new unit. N.B! Other connected lifesaving equipment may also need to be returned into operational status before the complete system is returned to operational status.
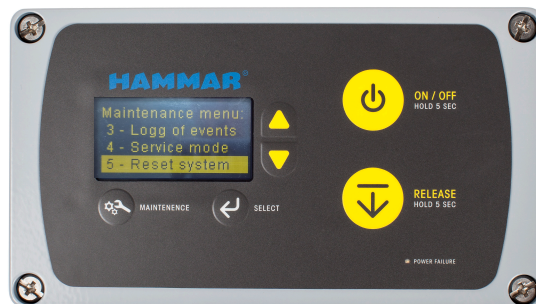
6. Programming

For Hammar use only.

Programming is only used when downloading new software into the Control Panel 2.

If this option is selected by mistake, just wait for a couple of minutes and a message "Programming error - Press any key" will appear.

Press any key to exit the programming section.

7. Battery test

For Hammar use only.

The battery test measures the time to discharge the battery to a nearly empty level. Note, the result is not equivalent of the time that the system can run on the back up battery. The system will be able to run on the backup battery for about: twice the measured time in the battery test.

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SYSTEM CHECK

The CP2 perform internal checks at short intervals.

The functions checked by the System Check are:
- Voltage of power supply
- Voltage of back-up battery
- Internal temperature
- Output circuits to H20 ERU units
- "Broken cable" on system inputs (optional)
- Communication between control panels in connected network
- Faults in other control panels in the network
-

In case of a power failure on the 24VDC power supply a red LED marked "Power failure" will light up on the front of the control panel. The "Check system" message will not come up on the display to save battery power. The alarm relay output will open to indicate failure.

PERIODIC CHECKS AND TESTS

Once per month (advised).

Press MAINTENANCE, to confirm panel wakes up, this check confirms power supply. Press ON/OFF once to go back to Monitoring Mode

PERIODIC MAINTENANCE

Before performing service or test; Secure Rafts.

The H20 ERUs has a limited service-life when installed onboard. The expiry date of the units shall be scraped on the date label of each ERU upon installation.

IMPORTANT: For CP2 installed before Dec 2021: After the battery has been connected to the system it will automatically take over the power supply to the CP2 system if the ships emergency power supply is switched off or interrupted.

The battery will lose capacity by repeated deep discharging cycles. It is important that the battery is disconnected in situations where an interrupted emergency power supply can be expected, as for an example during a stay at a shipyard.

Be aware that there is a backup battery in each CP2 Control Panel if more than one panel is connected in a network.

TROUBLESHOOTING

ERROR	SOLUTION
Panel is not responding to pushes to button	Inside the CP2: • Check incoming Power Supply. Use a multimeter to check incoming power is 24VDC in ports: - D1 (+) & E1 (-) - C9 (+) & C10 (-) • Check for bad connections in ports D1 & E1. • Check for bad connections in C9 & C10. • Check the fuse, check correct resistance. Reposition panel, if still unresponsive, contact CM Hammar for support.
Intermittent error	If the error can be isolated to certain section of the system: • Check the section for corroded connections and • cables, all the way from CP2 to Connector Box and ERU. • Check for cable breaks and poor connections in rest of system.
Red LED "Power Failure" is on	See section below Error Code "Supply Voltage"
Display in Activation Mode shows: "All Rafts Released"	Perform a system reset. (MAINTENANCE - 5. RESET SYSTEM)
Display shows "Check System", check Error Codes in MAINTENANCE - 2. SYSTEM ERRORS	
Error Code "Supply Voltage"	• Check the voltage on the power supply in MAINTENANCE - 1. SYSTEM STATUS. The supply voltage shall be about 24VDC. If the voltage is to low check the fuses at the main supply switchboard and the fuse in the CP2 enclosure (1 A 5x20 mm glass tube fuse). Inside the CP2: • Check incoming Power Supply. Use a mulitmeter to check incoming power is 24VDC in ports: - D1 (+) & E1 (-) - C9 (+) & C10 (-) • Check for bad connections in ports D1 & E1. • Check for bad connections in C9 & C10. • Check the fuse, check correct resistance. • Check the fuse holder for poor connection to fuse
Error Code "Battery voltage"	• Check the voltage of the battery MAINTENANCE - 1. SYSTEM STATUS. Normal voltage 6,8V (+/-0,4V) • Monitor the voltage and check if battery is charging. • Replace the battery if battery not charging and current <4V.

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Error Code "Battery capacity"	• Check that the connection plug for the battery is properly inserted in its terminal on the connection terminal circuit board. • If error remains, Replace the Back-up battery
Error Code "Temperature"	• Check the internal temperature in MAINTENANCE - 1. SYSTEM STATUS. • Check the temperature at the location where the CP2 enclosure is mounted. The operating temperature range for the system is -30 to +65 °C. If outside range, arrange with heating or cooling at the CP2 mounting location.
Error Code "Output [Output number]"	An unused H20 ERU connected to a Control Panel 2 creates a low resistance closed circuit. The System Check is testing this closed circuit, which means that it can detect a released or missing H20 ERU as well as a cable breakdown (open circuit) but not a short-circuit in the cable. The error can be of the following types: • Broken circuit to the ERU. Check the wiring to the ERU and check all terminals for bad connection and corrosion. Disconnect the ERU and replace the ERU with a jumper wire between the connection terminals. If the error indication goes away, there is a broken circuit in the ERU, replace the ERU. • Short circuit between the wires to the ERU and ships ground. Check the wiring and connection terminals for corrosion. • Short circuit between the wires to the ERU and the ships 24VDC power supply. Check the wiring and connection terminals for corrosion.
Error Code "Input [Input number]"	Check the wiring to the indicated input for damages, bad connections, and corrosion.
Error Code "Remote ([ID of panel])"	Fault in specified Control Panel in the network. • Go to specified panel and check MAINTENANCE - 2. SYSTEM ERROR • Resolve specified error.

IMPORTANT: All service and repairs should be performed in accordance with ship's SMS. Troubleshooting according to table below may be performed by personal trained in handling electrical installations.

REPLACEMENT MANUAL

REPLACING BATTERY

Replacement Part number HM-0725, Rechargeable Battery Pack for Control Panel 2

1. Switch of the circuit to which the CP2 is connected for power supply.
2. Standing in front of the Control Panel 2, remove the front part by the 4 Ph2-screws in each corner of the panel.
3. Carefully place the front part in a place where in will not be damaged.
4. Replace the battery and dispose the old in an environmentally friendly way.
5. Reattach the front part.
6. Switch on circuit for power supply
7. Check Battery voltage (MAINTENANCE - 1. SYSTEM STATUS)
8. Confirm voltage is increasing to normal operating voltage, 6,8V (+/-0,4V)
9. Replacement completed.

REPLACING H20 ERU

Refer to specific information for the type of H20 ERU installed. Replacement generally performed by a service technician.

Technical Product information Control Panel 2, 202405_ver2

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