



XRGI[®]

OPERATING INSTRUCTIONS

FOREWORD

We congratulate you on purchasing your XRGI® system. It offers you an economically viable solution to reduce your energy costs in an environmentally friendly way. The XRGI® system uses the combined heat and power principle system to utilise the available resources in an extremely efficient way - by up to 96 %. This is environmentally friendly and reduces your energy costs significantly. A special feature of this proven method is: The resulting heat during the electricity generation process will be usable for you and not emitted with harmful consequences for the environment. For this reason, a combined heat and Power Unit is rightly regarded as a sustainable, energy generation process for the future. It is an active, contributory factor to environmental protection. Therefore, this process is welcomed by environmental groups and is supported by the federal government. The combined heat and Power Unit clearly stands out from other environmentally friendly, sustainable energy generation methods. Compared to solar and wind power plants, a combined heat and Power Unit is not actually dependent on weather conditions. A co-generation system saves resources in all weather conditions and reliably supplies electricity and heat. Therefore, electricity and heat are always available for you - you can rely on this!

We would like to wish you a lot of pleasure and maximum energy profit with your new XRGI® system.



INFO! Please contact your EC POWER dealer when you have any questions regarding your XRGI® system.

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1. IMPORTANT SAFETY INFORMATION

Please read the following section carefully and observe the safety instructions. If you are unsure about any matters, or any information cannot be understood, please contact your EC POWER dealer. The XRGI® system was constructed according to the current applicable rules and standards for technical equipment and in compliance with recognised, conventional safety measures. To achieve the maximum possible safety, it is essential that all the safety information contained in these operating instructions is adhered to and fully implemented. To avoid any residual hazards and/or risks, it must be ensured that no unauthorised persons (especially children) can come into contact with the XRGI® system.

1.1 UTILISED SAFETY SYMBOLS

Safety symbols are utilised in this document depending on the potential dangers and/or hazards relating to the situation.

Utilised safety symbols and information symbols



INFO!

The info symbol is not a safety symbol. It is intended to provide you with important and useful information regarding to the topic concerned.



ATTENTION!

This safety symbol refers to a potentially dangerous situation that could lead to slight personal injury. This notification will also be utilised in instances of imminent damage to property.



WARNING!

This safety symbol refers to a potentially dangerous situation that could lead to serious personal injury or fatal injuries.

1.2 GENERAL SAFETY INFORMATION



WARNING! If the safety devices and/or equipment are overridden, bridged, manipulated, damaged or removed, or the XRGI® system is operated with defective safety devices and/or equipment, then there is a risk of physical injury.
Safety devices and/or equipment may not be manipulated or overridden.

Please ensure you observe the safety instructions listed below for protection against electrical shock, personal injury and fire:

- Please retain the instruction manual and safety instructions!
These documents must be included with the XRGI® system if acquired by a third party.
- The XRGI® system must be used only for its intended field of application, in accordance with the instruction manual.
- The XRGI® system must be installed on a stable foundation.
- Before commissioning the system, ensure that the on-site mains voltage matches the line voltage specified on the machine's rating plate. When using or replacing the mains voltage supply cable with the XRGI® system, ensure compliance with the line voltage specified by the manufacturer. Never handle the power plug with wet hands.
- Ensure the power cable is undamaged. Any rough or sharp-edged object has the potential to damage the cable. If the cable is damaged, replace it immediately.
- Take care to ensure that the supply line and/or extension cable is not damaged by being run over, crushed or stretched. Protect cabling from heat, oil and sharp edges. Cabling must have the diameter given in the XRGI® manual and have a "splashed water" protection class. Cabling must not be in permanent contact with water.
- Always ensure the XRGI® system is switched off before connecting supply cabling.
- Always use the manufacturer's original accessory and replacement parts for the XRGI® system.
- Do not wear any jewellery or clothing that could become caught in the machine's moving parts.
- Protect electrical equipment from moisture and rainfall, never immerse in water. Do not use in a humid environment or in areas with high atmospheric humidity.

- Your reaction speed can be influenced by the consumption of alcohol, medicines and drugs, and by illness, fever and tiredness. Do not use the XRGi® system if such circumstances apply.
- Children must be kept away from the XRGi® system at all times. The XRGi® system may be used only by persons who have received training on the system or who have provided evidence of their ability to use it, and who have been expressly authorised to use the system. The XRGi® system must not be operated by children or adolescents.
- Never reach into the Power Unit with bare hands or materials when the machine is running.
- Do not use wet cleaning tools on the XRGi® system.
- Do not use solvents, turpentine, petrol, abrasive cleaning agents or similar materials. Before re-commissioning the machine, ensure all parts have dried out thoroughly.
- All repairs must be carried out by specialist technicians as authorised by EC POWER.

1.3 WORKING WITH ELECTRICITY



WARNING! Danger to life when working on electrical and electronic components.

- Work on electrical or electronic components may only be carried out by electro-technical, skilled personnel and executed in accordance with the current, valid electro-technical regulations.

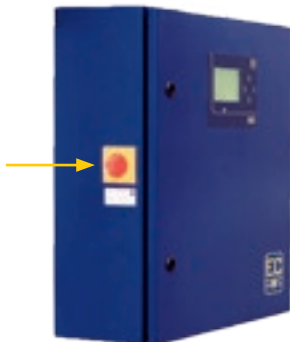
1.4 SAFETY DEVICES AND/OR EQUIPMENT IN THE XRGi® SYSTEM

The XRGi® system is equipped with a number of protective devices that enable safe operation. The safety devices and/or equipment include:

- Main switch
- Sound insulation cladding (all cladding and/or trim panels)

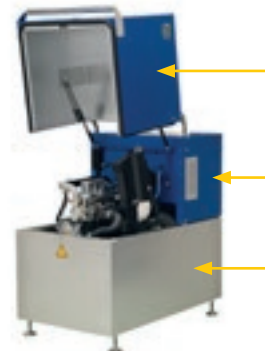
Main switch on the iQ-Switching cabinet

Illustration 1



Sound insulation cladding on the Power Unit

Illustration 2



INFO! The warning information labels (stickers), which are affixed on the XRGi® system, must always be clearly visible, undamaged and complete. Damaged or dirty warnings must be replaced. The warning information labels can be obtained from your EC POWER dealer.

2. GENERAL INFORMATION RELATING TO THE XRG1® SYSTEM

2.1 MANUFACTURER

The manufacturer of the XRG1® system is:

EC POWER A/S
Address Samsøvej 25
DK-8382 Hinnerup

2.2 CONFORMITY DECLARATION

The XRG1® system is designed and constructed according to the current applicable rules and standards for technical equipment. The relevant declaration of conformity is included with the documentation.

2.3 ABOUT THIS USER MANUAL

This manual provides important information for operating the XRG1® system. Please read the operating instructions for the operator thoroughly before utilising the XRG1® system, especially the safety instructions. If you have any problems understanding the contents contained therein, please contact your EC POWER dealer before commencing any works and/or operations. Always position this manual in a visible and accessible location near the XRG1® system.

Information, amendments

All information is provided without any guarantee. Errors and omissions excepted. The manufacturer reserves the right to implement and/or introduce technical alterations and/or modifications without prior notice. The images and/or illustrations can differ from the original.

2.4 INTENDED USE

The XRG1® system is designed for heat and electricity generation.

The functions described will only be achieved when the XRG1® system is installed and operated according to the regulations and standards of the manufacturer. The operating instructions and, where applicable, the additional manufacturer's instructions must be thoroughly and carefully read and understood before the initial commissioning to avoid any misuse. If you have any problems understanding the contents contained therein or have any questions, please contact your EC POWER dealer.

Misuse



ATTENTION! If the XRG1® system is not utilised for its intended use, then there will be a risk of physical injury. Components can become overloaded, overstressed and damaged or other dangerous, resulting modifications may occur when the system is utilised in any way other than its intended use.

The complete system and system elements may not be misused, used for purposes other than those intended or manipulated.

Loss of the CE-Symbol



INFO! If the XRG1® system is not utilised for its intended use or is manipulated in any form or converted, then this will invalidate the manufacturer's Declaration of Conformity (CE). Furthermore, every non-intended utilisation, improper use or incorrectly connected services will invalidate any guarantee and/or warranty claims.

3. OPERATOR-SIDE PREREQUISITES

The operator of the XRGI® system has a duty of care to ensure that the given prerequisites in the operating instructions for safe operations are adhered to. This include, among others, e.g. the situation and conditions at the installation location, the regulations and requirements of the local authority for a safe, installation location, the instructing of the operating personnel with regard to the XRGI® system, adhering to the stipulated servicing and maintenance works, the monitoring of the correct and proper utilisation of the XRGI® system. The operating instructions must be positioned on the XRGI® system. Also observe the additional documents in the technical documentation. The system operator has a duty of care to ensure that the XRGI® system is only utilised when all the safety devices and/or equipment are available, activated and undamaged. The system operator must have read and fully understood these operating instructions before they operate the XRGI® system.

Specialised, skilled personnel

The personnel who are responsible for the commissioning, troubleshooting, remedying errors and disruptions and servicing/maintenance on the XRGI® system must be familiar with the XRGI® system and the special requirements, risks and hazards involved with the works and must have been specially trained and instructed by the manufacturer of the system. They must have read and understood this documentation and the operating instructions in the technical documentation. In addition, their safety training instructions must have provided them with the required knowledge to be able to avoid, or reduce to a minimum, any residual risks and/or hazards to themselves and other third parties, especially during maintenance works.

The personnel involved must be trained and authorised by the manufacturer of the system in order to achieve the required, specialised qualifications.

If the operating instructions refer to the EC POWER dealer, then this exclusively refers to the “specialised, skilled personnel”.

Definition of electro-technical, skilled personnel

Works on current carrying elements of the XRGI® system may only be executed by inspected, skilled electricians. The works must be executed in accordance with the current, valid technical regulations for electro-technical units and systems. The skilled electricians must additionally possess an accreditation from the relevant power supply company and/or utilities company.

3.1 WARRANTY INFORMATION

Professional installation and operation in accordance with the valid, applicable EC POWER instructions.
Regular maintenance in accordance with the applicable maintenance manuals only by trained, skilled personnel who have been authorised by EC POWER.

Caveat emptor

Any guarantees and warranties provided will be particularly excluded for damage which the manufacturer has no direct or indirect influence such as e.g.

- Poor planning and installation (e.g. fuel supplies, hydraulics and electrical integration, exhaust extraction).
- Commissioning, maintenance, and repair by the purchaser or by third parties.
- Natural wear and tear.
- Faulty, careless handling, alteration works, repair works.
- Unsuitable operating resources and/or mediums, non-approved lubricants.
- Use of heating water that does not comply with the technical guidelines.
- Chemical, electro-chemical and electrical influences.
- Use of drinking water that does not comply with the recognised, accepted rules of technology.

The current edition of the guarantee and warranty stipulations in the General Terms and Conditions from EC POWER A/S and EC POWER GmbH will be considered as valid.

Obligation to take back the product

As long as the XRGi® system can be shown to have property damage, material damage or defect of title (hereinafter: defects) at the time of delivery and which were proved to exist at the time of handover of risk, then the purchaser has the right to supplementary performance in the form of remedial works or replacement in accordance with the method selected by EC POWER. If the supplementary performance fails to provide satisfaction, then the purchaser is entitled to select either a reduction in the remuneration due or to a termination of the contract (GT&C's under www.ecpower.eu).

A prerequisite for liability for defects on behalf of EC POWER is that:

- There has been no evidence of misuse of the system, incorrect installation and/or commissioning, careless and neglectful usage or implementation of unsuitable operational mediums, lubricants, lubrication additives, water and/or substitute materials by the owner, operator or any other third parties, natural wear and tear, inappropriate construction works, chemical, electro-chemical or electrical influences and/or effects.
- The purchasers have correctly adhered to their obligations with regard to inspections and reproof in accordance with Section 377 HGB (German Commercial Code). Defects have been reported in writing within 10 days of receipt of the delivered object at the delivery location or, when these are not identifiable by means of an adequate and orderly inspection, within 10 days of their initial identification.
- The purchaser is not in arrears with their payment obligations.

Behaviour in cases of emergency

Gas smells

Please observe the following measures if there are any gas smells:

- Do not activate any electrical switches! Do not unplug any electrical equipment!
- Do not utilise any electrical doorbells!
- Do not use any matches or cigarette lighters - no naked flames!
- Do not smoke!
- Do not use a telephone, cordless telephone or mobile phone in the danger area!
- Open the doors and windows immediately!
- Extinguish all naked flames!
- Immediately close the shut-off cock on the main gas meter or the main, cut-off cock in the cellar!
- After closing the shut-off cock and/or the shut-off cock on the main gas meter, close the gas shut-off cock on the connection panel of the XRGi® system and subsequently inspect whether all the gas valves and cocks on all other devices and equipment are closed! Close all the other, open gas valves and cocks (pilot flame cocks, gas-cooled refrigerators etc.)!
- Warn other occupants of the building and evacuate the building!
- The lights may only be turned back on when there are no more traces of gas and/or gas smells!
- Do not only rely on your own sense of smell, always ask the opinions of others!
- If the cause of the gas smell cannot be identified although all the gas valves are closed, then the gas supply company and/or utilities company must be contacted immediately. The responsible company must also be informed about weak gas smells when their source cannot be located and/or identified!
- If gas smells emanate from rooms which are not readily accessible, then the police and/or fire brigade must be immediately informed as the bodies with permission to force entry to such areas; the gas supply company and/or utilities company must also be contacted immediately!
- If the source of the gas leak is thought to be in the cellar, then the cellar must be thoroughly ventilated but not entered; the other occupants of the building must be informed and the gas supply company and/or utilities company must also be contacted immediately!
- Do not attempt to repair disruptions or damage on gas services yourself! These may only be remedied by qualified, skilled workers; these are personnel from the gas supply company and/or utilities company and those companies which are contracted for such works!
- The area concerned must be kept accessible for the operatives concerned!

Cases of fire or water ingress

Please observe the following measures in cases of fire or water ingress:

- Switch off the all-pole disconnecting point!
- Switch off the main switch on the device!
- Close the shut-off cock on the gas supply line!
- Inform the responsible service department!
- In the event of fire outbreaks, immediately close the gas shut-off cock on the connection panel and the main shut-off cock on the gas service's pipe, prevent fresh air from entering the fire zone and inform the local fire service!
- Only use approved fire extinguishers for trying to put out a fire!
- Warn other occupants of the building and evacuate the building!

Exhaust gas smells

Please observe the following measures if there are any exhaust gas smells:

- Shut down the system.
- Open all the doors and windows.
- Inform the specialised heating company.

Protection against frost

Ensure that when you are not in attendance during periods of frost and/or the winter months that the XRGI® system remains in operation and that the area is suitably heated.



ATTENTION! The monitoring systems are only activated when the device's main switch is set to position "I" and the device has not been isolated from the power supply system.

A possibility to provide protection against frost would be to drain the XRGI® system. If you decide to drain the XRGI® system, then you have to ensure that it is drained completely. Always take the advice of your EC POWER, authorised professional trade worker.

Danger from contact

Behind the covers, which can only be removed by auxiliary means (keys, tools) with special tools, are components which can cause injury when one comes into contact with them (hot and/or electrical conductive parts). These covers may only be removed by EC POWER authorised skilled personnel.

The door on the switching cabinet is provided for your protection. It may only be opened by personnel who are instructed in electro-technical matters. The main switch (red switch) is located on the left-hand side of the iQ Control Panel. When switched on, there is a danger that coming into contact with the control components could result in an electrical shock. The iQ Control Panel contains sensitive electrical components. Any unprofessional actions can lead to damage on the XRGI® system. The cowling on the Power Unit is provided for your protection. If you have to open it, you must pay attention to the following points:

The engine generates heat. There is a risk of burns when coming into contact with the engine and numerous other components. There are parts under the protective cowling which start to rotate when the XRGI® system is started and when it is operating. Touching these parts during operating is perilous. The contact with components under the protective cowling during operation is only permitted for authorised and instructed personnel. Wearing loose fitting clothing and jewellery during visual inspections should be avoided. They could be caught up in rotating parts.

The generator and other numerous parts are connected to the power supply system. Coming into contact with non-isolated parts is perilous.

There is a risk of hearing damage when remaining close to a switched on XRGI® system with an open cowling. Please wear approved hearing protection equipment when the cowling is open.

Combustion air supply

Maintain an unrestricted, combustion air supply to the XRGI® system. Never position any devices with exhaust vent units (e.g. ventilators, fans, tumble dryers or extractor hoods) near the XRGI® system without prior consultation with your EC POWER authorised, professional trade organisation.

If sealed, airtight windows are built into the room and/or area, then you are duly bound to consult with your EC POWER authorised, professional trade organisation to subsequently guarantee that there is still sufficient intake of combustion air for the XRGI® system. The combustion air for the Power Unit must be free of solvents or halogen compounds. Such materials will lead to corrosion and damage when operating the XRGI® system.

Halogen compounds are utilised in industry, commerce and in the production of household goods.



ATTENTION! Closed air intake openings can lead to incomplete combustion and a build up of carbon monoxide. This may lead to possible poisoning.

Recognised, primary sources are:

Industrial sources

Chemical cleaning	Trichloroethylene, Tetrachloroethylene, Fluorinated hydrocarbons
Degreasing baths	Perchloroethylene, Trichloroethylene, Methylene chloride
Printers	Trichloroethylene
Refrigerating machines	Methylene chloride, Trichloroethane, Dichlorodifluoromethane

Domestic sources

Cleaning and degreasing agents	Perchloroethylene, Methyl chloroform, Trichloroethylene, Methylene chloride, Carbon tetrachloride, Hydrochloric acid
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Hobby areas

Solvents and various thinners	Chlorinated hydrocarbons
Spray cans	Chlorofluorocarbon hydrocarbons (Frigene)

This list does not purport to be complete.

They are a practically important, utilised solvent for cleaning materials, adhesive materials and/or paints. Chemical cleaning and degreasing baths are sources for halogen compounds and floor covering adhesives and other materials also come into question. Building lacquer, building paint and building adhesives have been produced for many years without halogenated hydrocarbons. Air-borne halogen compounds are often released when thinners containing chlorinated hydrocarbons or solvents for removing adhesives which contain chlorinated hydrocarbons are utilised as well as new coatings in heating plant rooms. Bleach alkaline or hydrochloric acid, which are often utilised for disinfection and cleaning processes, must also be considered as causes for corrosion. Paint sprays or adhesives which contain CFC are hardly ever utilised any more by tradesmen who consider themselves to be professional.

If the sources of halogenated hydrocarbons cannot be totally disregarded (e.g. hairdressing salons, swimming pools, dry cleaning premises etc.), then the combustion air supply must be exclusively provided from a non-contaminated area.

Filling water and topping up water

Scaling and encrustation as well as corrosion can often lead to problems. As well as scaling, it is very important to prevent corrosion. Quantities like the oxygen and carbon dioxide content, the pH-Value and the conductivity (salt content) play a very important role with regard to corrosion build-up in the heating circulation system. In order to avoid expensive repair works in the pipework on the XRGI® system which could be caused by corrosion build-up, you must introduce the demineralized water into the engine circulation water when filling or topping up the system – 20-Litres of demineralized water will be supplied in the scope of delivery for each, new XRGI® system. The heated water is to be utilised exclusively for heating purposes in the closed circuit and may not be drained off and used for any other purposes.

Filling and topping up the engine circulation water is executed via the faucet cock on the Power Unit.

The following technical operating, protective measures are recommended:

- Keep the volume of topping up water to a minimum by introducing line cut-off valves for cases of repair and regular controlling of the expansion vessel.
- Introducing chemicals for stabilising the hardness of the water is not recommended as the limescale could develop into sludge.

3.2 REQUIREMENTS FOR THE INSTALLATION AREA

Particular attention must be paid to the local, customary regulations and provisions for technical rooms, the regulations and provisions of the power supply company, as well as those from TRGI when selecting the installation area. The installation room must be equipped with the stipulated ventilation openings according to the provisions of TRGI and must be frost free. The requirements from TRF 2008 must be adhered to when utilising propane gas as a combustion fuel.

The Power Unit may not be installed in direct contact to ventilation openings (risk of freezing during downtimes). The minimum space requirement for installing a Power Unit XRGI® 6/9G-TO has been calculated as 3.5 m² and for a Power Unit XRGI® 15/20G-TO as 4 m².

Minimum distances

Please ensure that there is a clear accessibility and working area around the installation area. The Power Unit must be easily accessible from all sides for the required servicing and maintenance works. The following illustrated free space should be retained for servicing and maintenance works:

XRGI® 6/9

Top view

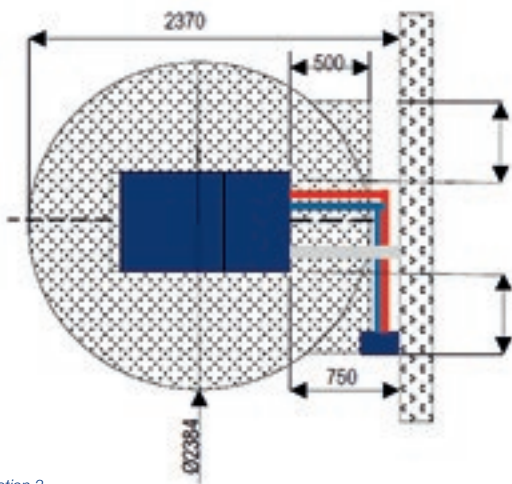


Illustration 3

Side view

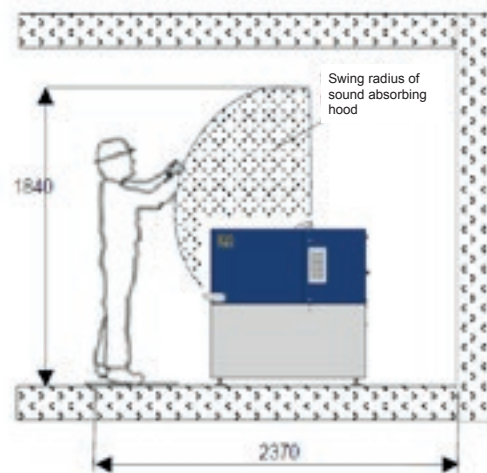


Illustration 4

XRGI® 15/20

Top view

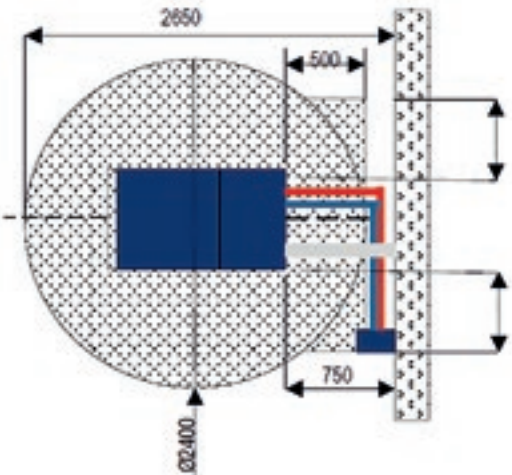


Illustration 5

Side view

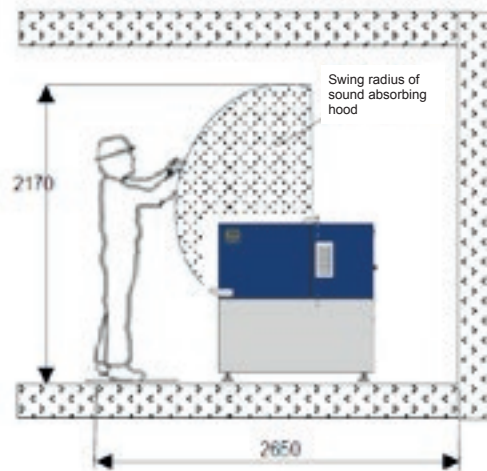


Illustration 6

The installation area must be clean and dry so that the service life of the ventilation filter is not affected. The room temperature should not exceed 35 °C. 40 °C is possible for a short period of time although this will reduce the life-cycle of certain, individual components (electrical components). The combustion engine requires sufficient fresh air for the combustion process. Ensure that the operating area has sufficient ventilation. If this is not physically possible, then the area must be ventilated mechanically to ensure a regulated room temperature.

Ensure a flat, level surface for the installation area. The installation area must be firm and non-slip.



INFO! Installations on screeded floors can lead to noise and vibration problems.

The installation area and the transport routes to the installation area must be suitably load-bearing for the intended purpose. Please pay attention to the weight of the system and any required means of transportation.



WARNING! Danger from explosions from incorrect installation locations in explosible regions. The system may not be installed and operated in areas which are classified as explosion hazards.

Alterations in the area of the XRGI® system

Amendments and/or modifications may not be executed on the following facilities and/or equipment:

- On the XRGI® system
- On the services for gas, ventilation, water and electricity
- On the exhaust system
- On the safety valve and the drain pipe for the heating water
- On structural objects which might have an influence on the operational safety of the XRGI® system.



ATTENTION! There may not be any amendments and/or modifications made to the XRGI® system components without the prior, written permission from EC POWER.

Explosive and easily inflammable materials

Do not utilise or store any explosive or easily inflammable materials (e.g. petrol, paper, paint) in the location area of the XRGI® system. Do not utilise any sprays, solvents, cleaning materials which contain chlorine, paints, adhesives etc. near the XRGI® system. These materials could not only be an ignition hazard but also lead to corrosion - also in the exhaust system.

Transport and installation

A Power Unit weighs between 440 kg and 750 kg, depending on the Power Unit model. The duty of care for, and all liabilities for, the XRGI® system are transferred to the customer upon handover of the system to the transport company or freight forwarder, at the latest when the system leaves the works or the distribution warehouse. This is also valid when CPT, Incoterms have been agreed (GT&C's on www.ecpower.eu).

The simplest way to transport the Power Unit into the facility is with a pallet truck for Euro-Pallets. The pallet truck must be positioned in the middle of the pallet for an even, balanced load. The Power Unit must be transported as a complete system and may not be either positioned vertically or on its side during transportation. A tilt angle of 45-50°, for example when transporting via stairs, with a crane etc. may not be exceeded. Dismantling and reassembling the system on site is only permitted after consultation with EC POWER! Despite all possible measures to ensure quality assurance, it is not completely possible to preclude any damage(s) to the Power Unit. If there should be any serious damage(s) to the Power Unit such as damage(s) to the engine or generator, then these can only be repaired in the EC POWER works. Please therefore ensure, in such cases, that the Power Unit has to be removed from the premises as a complete system. An agreement for regulating the installation and dismantling costs in these cases will be separately negotiated with EC POWER.

Soundproofing

A Power Unit is equipped with a high-quality, air-borne and structure-borne sound insulation. (<47 to <49 [± 2] dB(A), within a distance of 1 m with a closed cowling (refer to the technical data for the individual Power Unit). Therefore, selecting the installation area should be considered on the basis of noise abatement and noise-sensitive areas. To prevent the affects of noise transference from the structure, all connections for the XRG1® system to the in-house services should be made with flexible connections (hoses) or suitable, approved noise-reduction, bellow expansion joints. Connectors with noise abatement fittings must be utilised exclusively for installing the exhaust pipes (Classification T160). The exhaust pipes may not, at any time, come into direct contact with the building structure. The exhaust from the combustion engine pulses in time with the cycle of the combustion engine and therefore regulates the exhaust pipe accordingly. It cannot be compared accordingly with the exhaust flow from the heating chamber.

Despite the high-quality, structural sound insulation and air-borne sound insulation which is incorporated in the Power Unit, there might be an additional requirement for noise-abatement measures in areas which are sensitive to noise levels.

A tried and tested solution for structural sound installation is to position the Power Unit on a steel reinforced concrete slab with the dimensions L x W x H = 1,400 x 800 x 200 mm (weight approx. 500 kg) which should also be positioned on a full-surface area, Sylomer insulation material.

The installation of a vibration damper kit reduces the structurally-borne sound levels in the construction corpus.

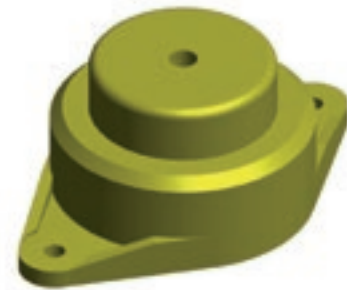


Illustration 7

4. OPERATION – SOFTWARE VERSION 1.8.7 -> 1.9.X

The following chapters will describe how the XRGI® system will be operated via the controls. The operations, which are described in these chapters, can be executed by the owner and/or operator. If you should have any questions relating to the operating instructions, please contact your EC POWER dealer.

4.1 OPERATING ELEMENTS

The XRGI® system will be exclusively operated with the iQ Control Panel.

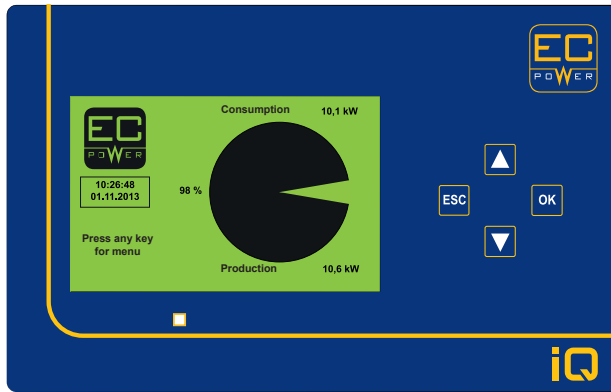
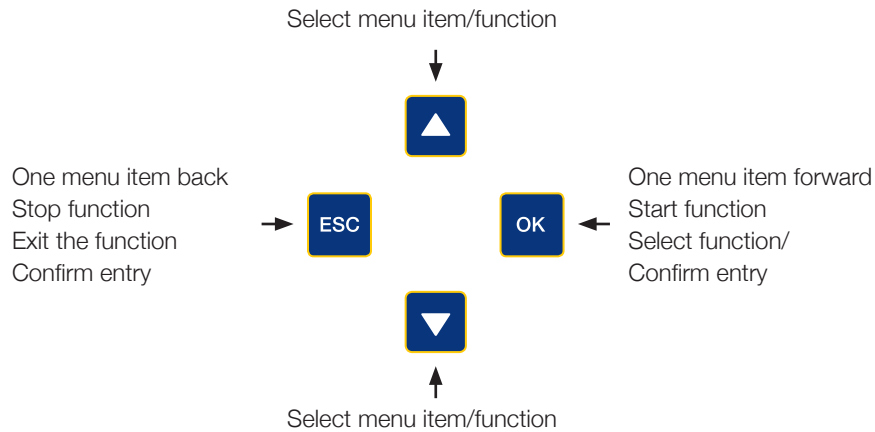


Illustration 8

Operation of the keys

The 4 keys in the iQ Control Panel allow the following functions to be selected in the menu:

Illustration 9



The display

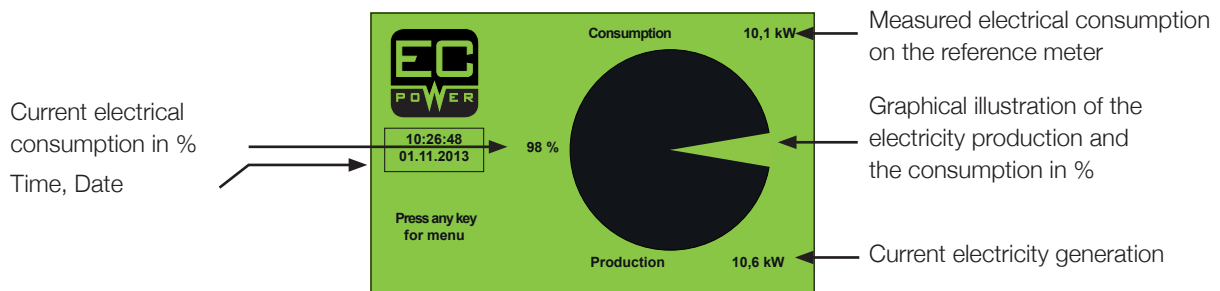


Illustration 12



Illustration 13



Illustration 14

■ Automatic operation
 ■ Alarm Stop
 ■ Manual operation

4.2 START AND STOP FOR AUTOMATIC OPERATION

When the XRGI® system is operated in the full-automatic mode, the controls ensure a continuously optimised and economic supply for the actual electricity and heat requirements.

Manual stop

The XRGI® system can be switched off as follows:

Selection of menu items

Service -> OK

Selection of menu items

System on/off -> OK

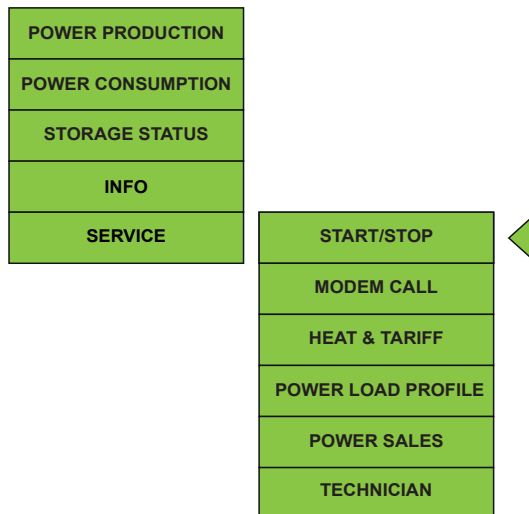


Illustration 13

The following request will be displayed in the following operation modes:

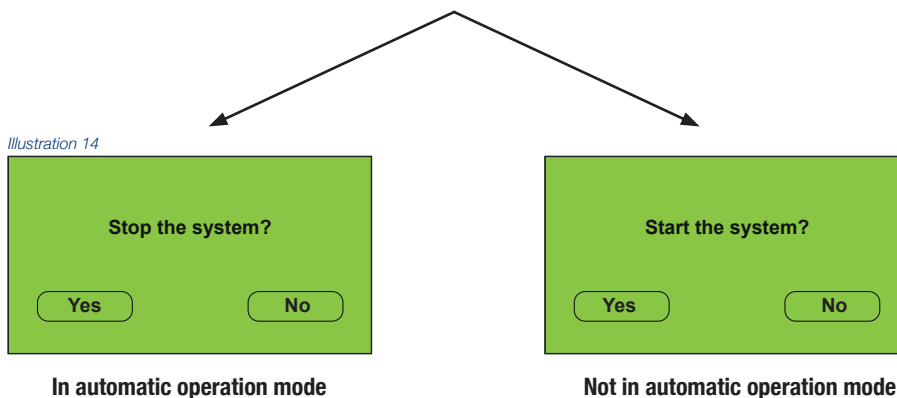


Illustration 14

Select with the keys ▲▼ to choose whether the automatic operation mode should be switched off or switched on. Pressing **OK** will execute the selected switch, pressing **ESC** will exit the menu.

Manual start

If the XRGI® system is in the standby position during the automatic operation mode, then the system can be started up as long as the accumulator is not full. If the request “Stop the System?” is answered with “No”, then a request will be made to ask whether the XRGI® system should be switched on.

Automatic operation

The electricity and heat consumption will be continuously monitored during the automatic operation mode to ensure the best possible, economic operation.

In the normal, automatic operation mode, the XRGI® system switches on and off as required as illustrated below:

Standby: Waits for an increase in the electricity and heat requirement.

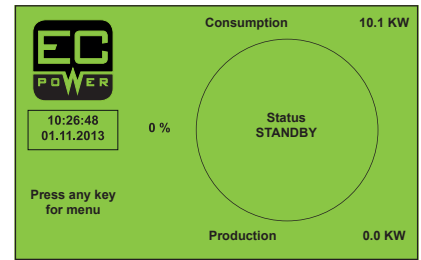


Illustration 15

Starts: The system starts up.

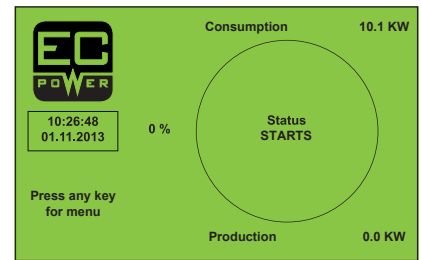


Illustration 16

Ventilation: The fuel metering system and engine block will be ventilated with fresh air.

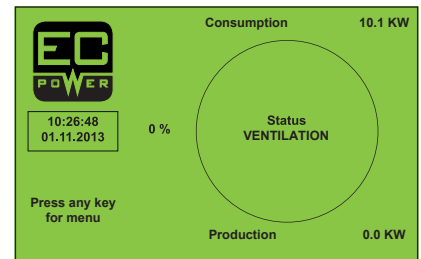


Illustration 17

Calibration: The control unit inspects the function of the system.

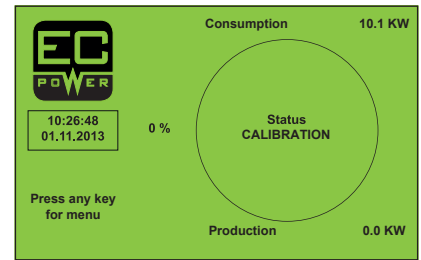


Illustration 18

Normal: Automatic regulating of the performance.

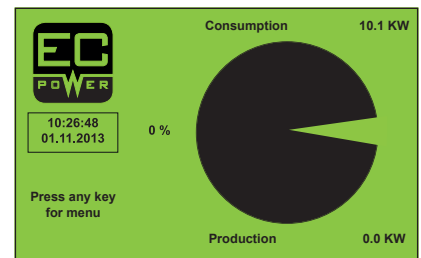


Illustration 19

Stop: The system switches off due to insufficient electricity or heat demands.

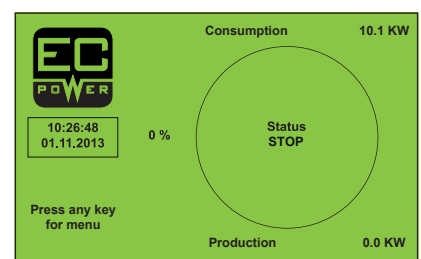


Illustration 20

Alarm Stop

If an error occurs during the operation, then the XRGI® system will switch off automatically. The light emitting diode on the control panel will glow in red to indicate errors. The control units automatically transmits the identified error via the integrated modem to the central database.

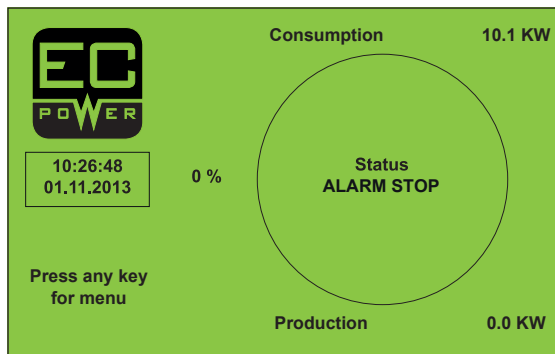


Illustration 21

Error description for alarms

Pressing the key displays the error description for the alarm stop. A new start up of the XRGI® system should only be executed after consultation with a service technician. Resulting damage(s) from an incorrect new start up will invalidate any guarantees and/or warranties.

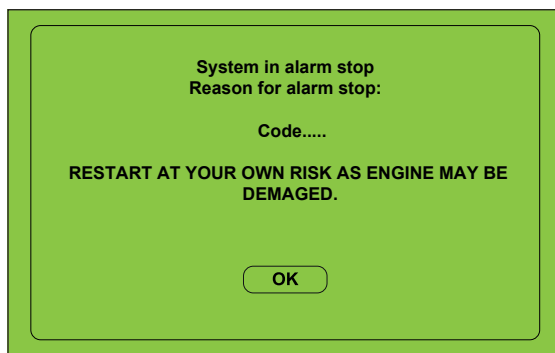


Illustration 22

Acknowledging alarms

Press **OK** to reset the alarm to zero.

4.3 STATISTICS

24-hour statistics

The menu item will be displayed below:

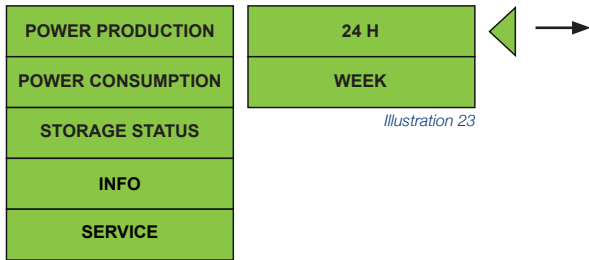


Illustration 23

Press **OK** and the 24-hour statistics will be displayed.

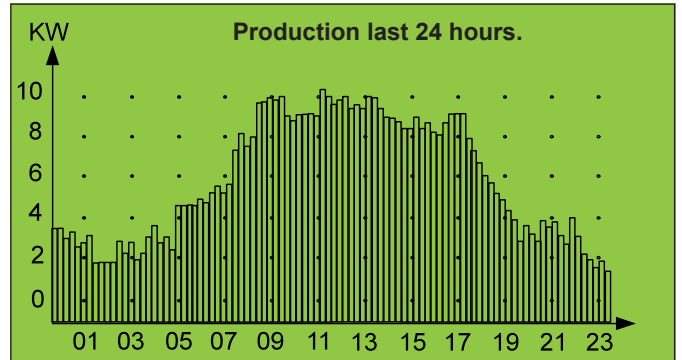


Illustration 24

The kW axis will be automatically scaled to display the statistics as exactly as possible.

The time axis displays the last 24 hours and the kW axis displays the average electrical performance in kW for a 15 minute period. That means: If a production from 13.0 kW is displayed at 2 p.m., then this is the average for the period from 1.45 p.m. to 2 p.m. The statistics will be updated every 15 minutes. Press **ESC** to return to the menu.

Weekly statistics

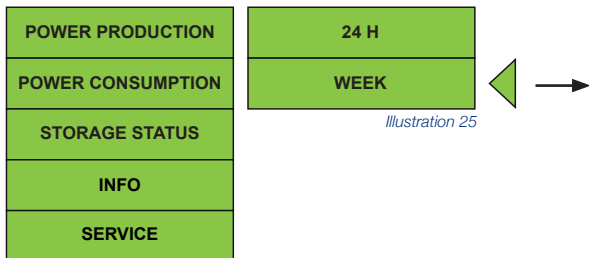


Illustration 25

Press **OK** and the weekly statistics will be displayed.

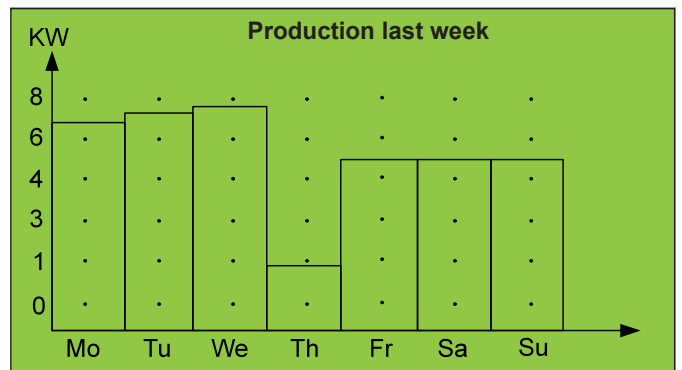


Illustration 26

The kW axis will be automatically scaled to display the statistics as exactly as possible.

The time axis displays the week day; every column is an average for the relevant 24 hours. The statistics will be updated at midnight. Press **ESC** to return to the menu.

4.4 STORAGE TANK AND HEAT PRODUCTION

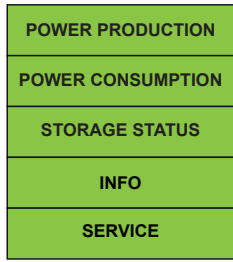


Illustration 27

Press **OK**, select the Storage Tank and the system overview with the input status will be displayed.

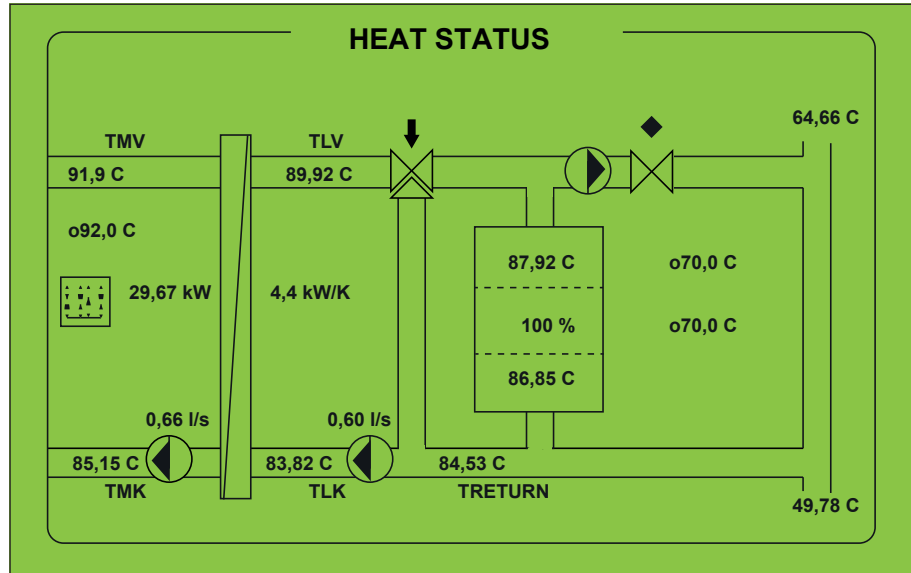
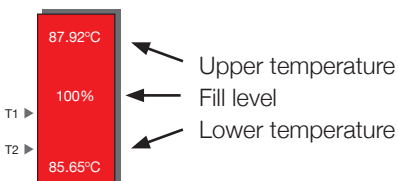


Illustration 28

Designations

TMV	Flow temperature from the engine
TMK	Return flow temperature to the engine
TLV	Flow temperature after passing through the heat exchanger
TLK	Return flow temperature before reaching the heat exchanger
	Heat production/heat performance of the engine 29.67 kW
kW/K	Efficiency of the heat exchanger in kW/K (below 2.5 kW/K is critical)
T RETURN	Return flow temperature from the Storage Tank and network to the Q60/Q40-Heat Distributor
s70.00°C	Target value for the flow temperature to the heating grid (adjustable)
o70.00°C	Operative target value
64.66°C	Flow temperature to the heating grid
	Return flow temperature from the heating grid
49.78°C	

Status of the Storage Tank



Valve identification

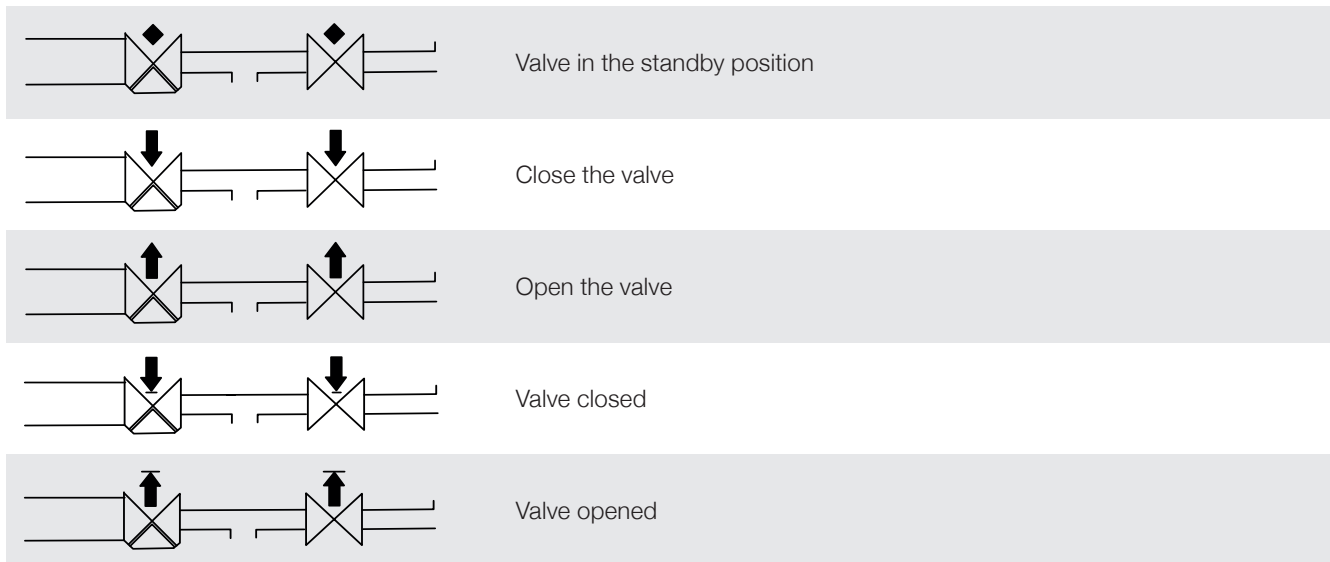


Illustration 29

► Press **ESC** to return to the menu.

4.5 OPERATION INFORMATION

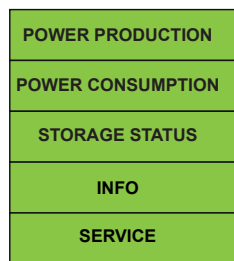


Illustration 30

Press **OK** to display the operational information.

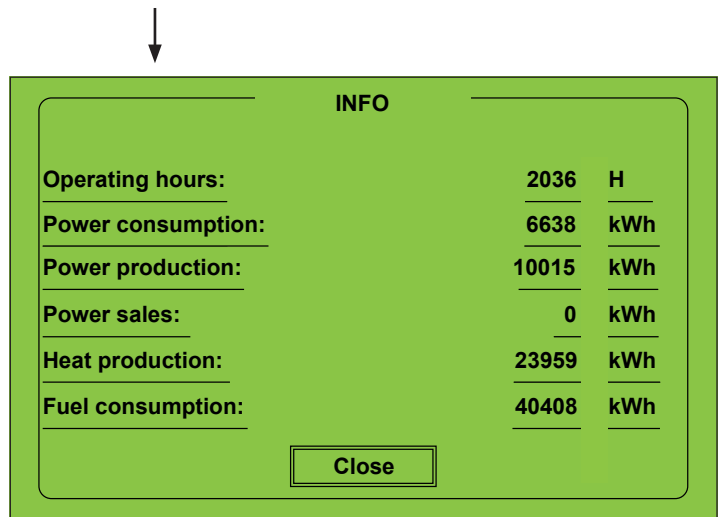


Illustration 31

Operational information online

Clicking on service.ecpower.dk will display the entries for the User name and Password as well as the operational information for the XRGI® system. Switching off your XRGI® system has to be specifically agreed in consultation with your specialist firm.

4.6 HEAT & TARIFF

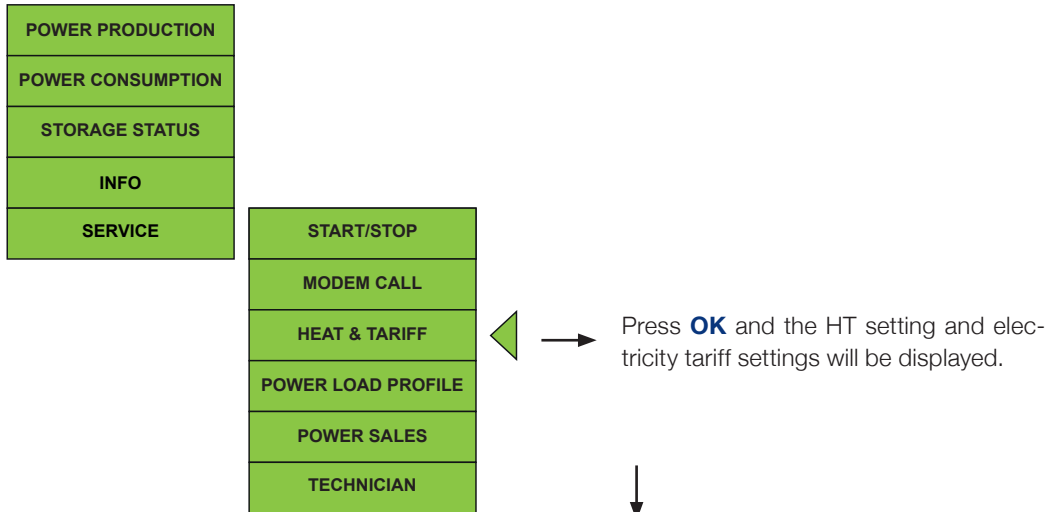


Illustration 32

Illustration 33

If the heating installation is equipped with e.g. a boiler and the XRGI® system should be switched off in low-demand periods, then select **Yes** accordingly.

High tariff periods for electrical production with multiple tariffs.

- ▶ Press **OK/ESC** to abort the entry.
- ▶ Press **OK** to save the entries.

Heat backup

If a heat backup is available (e.g. a boiler), then this entry can be set to **Yes** accordingly. The iQ Control Panel will then switch to the boiler as a heat source in periods of low heat requirements and electricity requirements. The XRGI® system will then remain switched off in these periods and the iQ Control Panel will wait until higher heat requirements and electricity requirements are requested. If the XRGI® system should also satisfy the basic-load, heating requirement outside the high tariff periods, then the heat backup must be selected as **No** accordingly.

- ▶ The keys ▲ ▼ will move the cursor to the heat backup lines.
- ▶ Press **OK** to select amendments for the settings.
- ▶ The keys ▲ ▼ will select **Yes/No** and pressing **ESC** will end the action.



ATTENTION! If the boiler is temporarily out of service, then the setting must be amended to **No** and the XRGI® system will then ensure the heat production at all times.

High-tariff period

If the installation only has one electricity tariff, then the highest tariff will be set for all 24 hours of the day. This setting will be displayed in the display.

If there are numerous tariffs, then these will be entered at the beginning and end of the High-tariff period (HT).

3 periods are possible:

- Every working day
- Saturdays
- Sundays

Example of an entry

	Beginning	End
24-hour high tariff	0:00	23:59
HT in special time periods	6:00	21:00
No HT within 24 hours	0:00	0:00

Utilising the entered time periods optimises the controlling of the heat production and electrical production.

If e.g. the XRGI® system is preferred as the method for satisfying the peak electrical requirement for certain times of the day, then these times can be programmed here as high tariff periods. The setting for heat backup enables the selection of whether the XRGI® system will operate outside the peak electrical period(s) or should be switched off.

Entries

- ▶ Move the cursor with the keys ▲ ▼ to a time point which has to be amended and press **OK**.
The cursor will then flash on the hour digit.
- ▶ Press the keys ▲ ▼ to select the hours, press **OK** and the cursor will switch over to the minute digit.
- ▶ Press the keys ▲ ▼ to select the minutes and press **OK** to complete the process.
- ▶ Press the **ESC**-key to toggle between the minutes and hours.

Please implement this procedure for amending all time periods and/or entries.

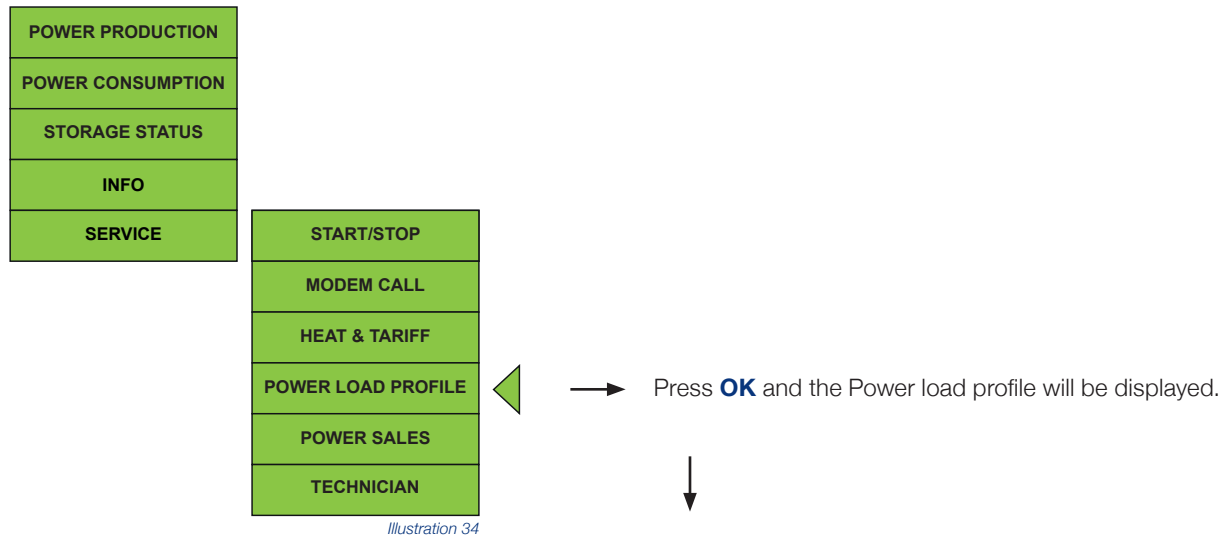
- ▶ Move the cursor to **Save** and press **OK** to save.

The amendments will be effective after a few seconds. The settings can be amended at any time - even during the automatic operating mode.

4.7 POWER LOAD PROFILE AND HEAT-CONTROLLED

If a reference meter for the electricity consumption of the object is available and switched off, Power load profile will be displayed in the display. Otherwise, the menu item will display the indication for heat operated (refer to the next section).

Power load profile



	Start:	End:
Mo – Fr :	00:00	23:59
Sa:	00:00	23:59
Su:	00:00	23:59

Illustration 35

- ▶ Press **OK/ESC** to abort the entry.
- ▶ Press **OK** to save the entries.

Load periods can be entered in the aforementioned menu. The load periods are the time periods in which the electricity consumption is the highest and which will be utilised for optimising the heat production and electricity production. A manual or automatic setting for the load period can be freely selected. The periods for every day will be adjusted accordingly at midnight in the automatic function with regard to the measured consumption.

Manual entries

The periods can be freely selected in the manual entries.

- ▶ Move the cursor with the keys **▲▼** to the line for manual entry.
- ▶ Press **OK** to select amendments for the settings.
- ▶ The keys **▲▼** will select **Yes/No**, with **ESC** it will be ended.

Load period

If manual settings are implemented, then the time period with the highest electricity consumption should be entered.

3 periods are possible: Every working day
 Saturdays
 Sundays

Example of an entry

	Beginning	End
24-hour high tariff	0:00	23:59
HT in special time periods	6:00	21:00
No HT within 24 hours	0:00	0:00

Utilising the entered time periods optimises the controlling of the heat production and electrical production.

Entries

- ▶ Move the cursor with the keys ▲▼ to a time point which has to be amended and press **OK**.
The cursor will then flash on the hour digit.
- ▶ Press the keys ▲▼ to select the hours, press **OK** and the cursor will switch over to the minute digit.
- ▶ Press the keys ▲▼ to select the minutes and press **OK** to complete the process.
- ▶ Press the **ESC**-key to toggle between the minutes and hours.

Please implement this procedure for amending all time periods and/or entries.

- ▶ Move the cursor to **Save** and press **OK** to save.

The amendments will be effective after a few seconds. The settings can be amended at any time - even during the automatic operating mode.

Heat-controlled

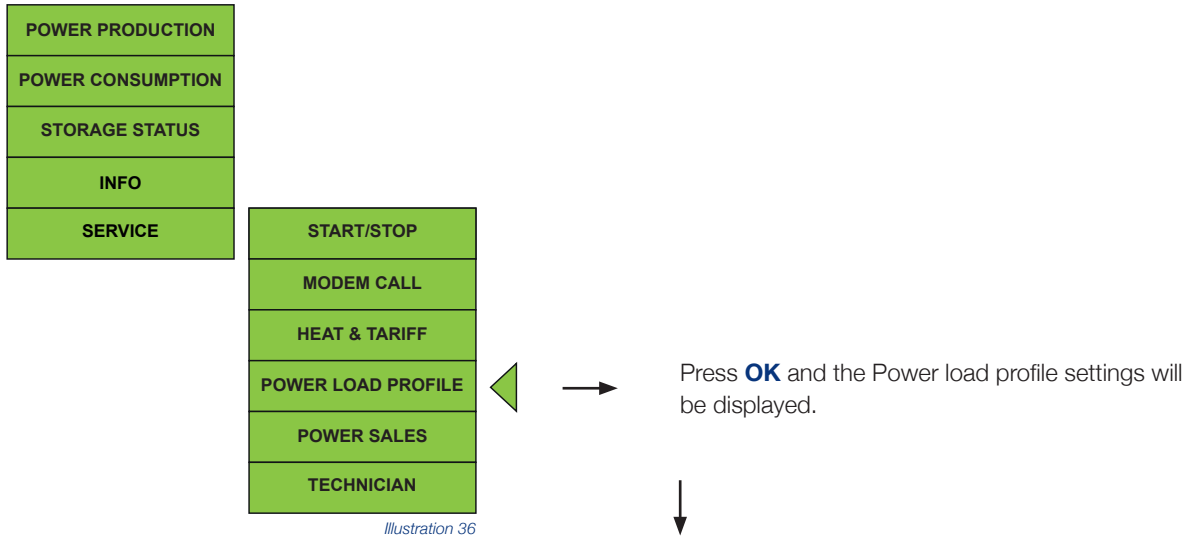


Illustration 36

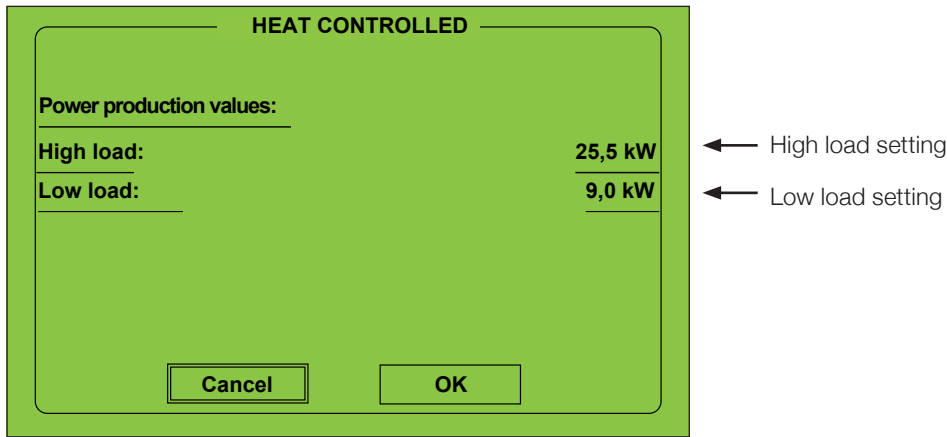


Illustration 37

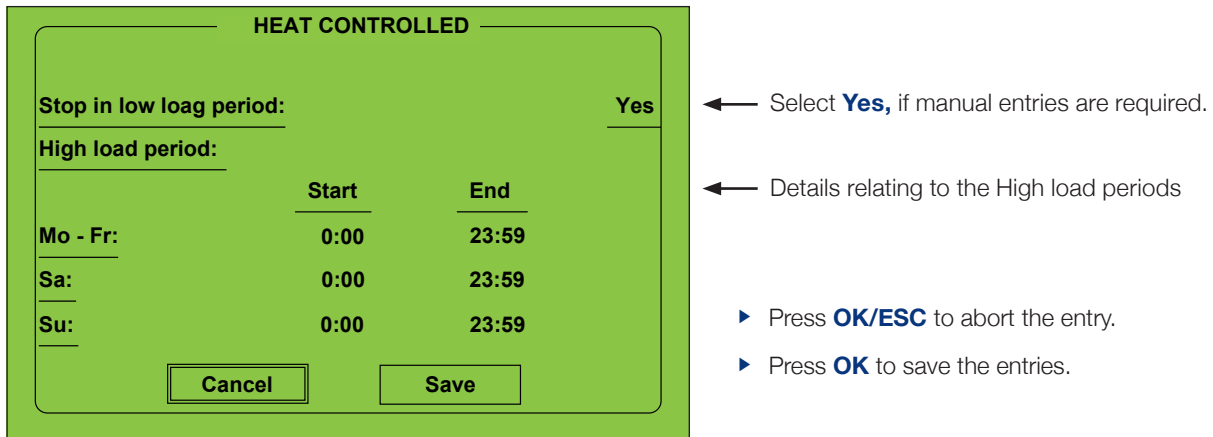


Illustration 38

Entering the consumption value in maximum and minimum load as well as the associated High load periods will set the consumption template for the XRGI® system.

Stop in low load period

If the XRGI® system should switch off with possible minimum loads, then Stop in low load period should be answered with **Yes** accordingly. If a heat backup is available, then the system will switch off in cases of minimum loads. If there is not a heat backup available, the XRGI® system will only continue to operate to prepare a minimum of heat in the vessel.

- ▶ Pressing the keys ▲ ▼ will set the cursor to **Stop in low load period**.
- ▶ Press **OK** to select amendments for the settings.
- ▶ The keys ▲ ▼ will select **Yes/No**, with **ESC** it will be ended.

Load period

The high load period determines the time in which the preferred electricity will be produced. The minimum load value is valid for periods outside these time periods.

3 periods are possible: Every working day
 Saturdays
 Sundays

Example of an entry

	Beginning	End
24-hour high tariff	0:00	23:59
HT in special time periods	6:00	21:00
No HT within 24 hours	0:00	0:00

Utilising the entered time periods optimises the controlling of the heat production and electrical production.

Entries

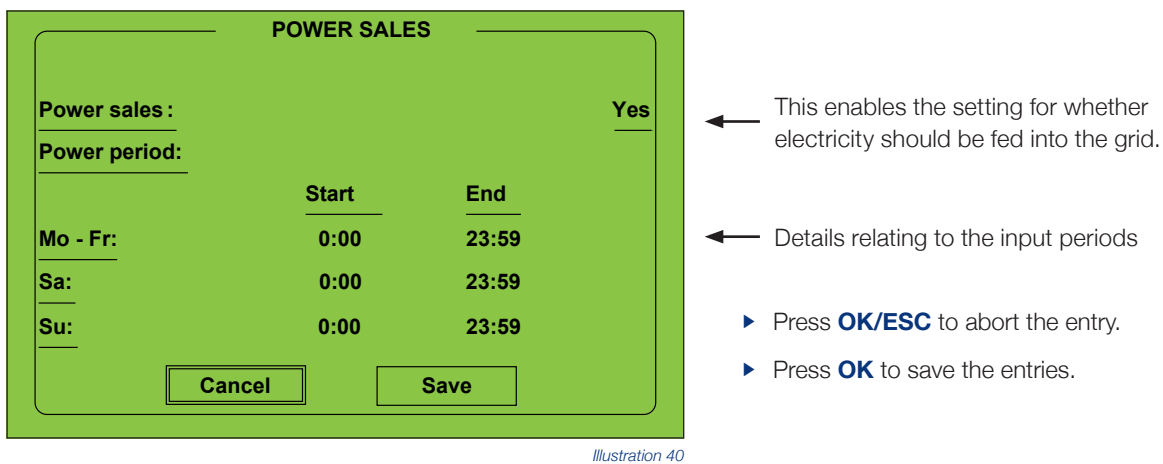
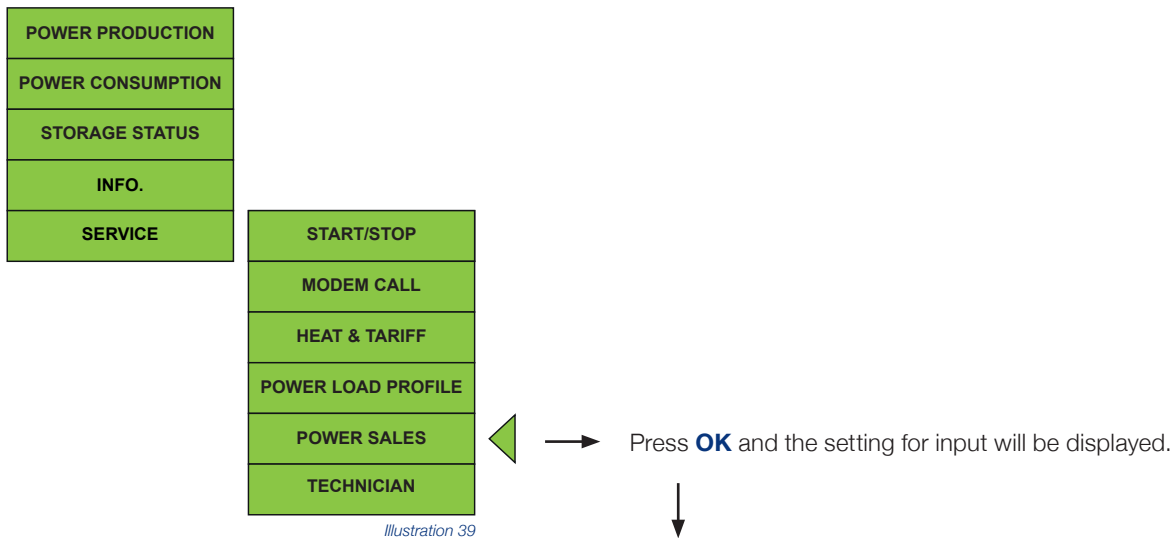
- ▶ Move the cursor with the keys ▲ ▼ to another time point and press **OK**.
The cursor will then flash on the hour digit.
- ▶ Press the keys ▲ ▼ to select the hours, press **OK** and the cursor will switch over to the minute digit.
- ▶ Press the keys ▲ ▼ to select the minutes and press **OK** to complete the process.
- ▶ Press the **ESC**-key to toggle between the minutes and hours.

Please implement this procedure for amending all time periods and/or entries.

- ▶ Move the cursor to **Save** and press **OK** to save.

The amendments will be effective after a few seconds. The settings can be amended at any time - even during the automatic operating mode.

Power sales



Power sales

If the electricity produced should not be fed into the grid, then **NO** (Standard) should be selected. The entered HT times will not be implemented. The iQ Control Panel will then attempt to generate the resulting performance on the basis of the manual entries or the reference measurement. If electricity should be fed into the grid, then **YES** must be selected here. In addition, the time period can be set here for when the electricity can be sold to the grid operator. The iQ Control Panel will then attempt to sell the electricity within the given period as long as the produced heat will be accepted.

Sales periods

The periods agreed with the grid operator will be given.

3 periods are possible: Every working day
 Saturdays
 Sundays

Example of an entry

	Beginning	End
24-hour high tariff	0:00	23:59
HT in special time periods	6:00	21:00
No HT within 24 hours	0:00	0:00

Utilising the entered time periods optimises the controlling of the heat production and electrical production.

Entries

- ▶ Move the cursor with the keys ▲ ▼ to a point in time which has to be amended and press **OK**.
The cursor will then flash on the hour digit.
- ▶ Press the keys ▲ ▼ to select the hours, press **OK** and the cursor will switch over to the minute digit.
- ▶ Press the keys ▲ ▼ to select the minutes and press **OK** to complete the process.
- ▶ Press the **ESC**-key to toggle between the minutes and hours.

Please implement this procedure for amending all time periods and/or entries.

- ▶ Move the cursor to **Save** and press **OK** to save.

The amendments will be effective after a few seconds. The settings can be amended at any time - even during the automatic operating mode.

4.8 MODEM CALL

The modem connection on the system will periodically transmit (around 2 times a day) the service information and operational information to EC POWER A/S and/or the relevant partner firm. This is also available as a call-up with the relevant customer log-in following an appropriate agreement with your professional trade partner.

In order to test the connection or update the database, the modem call up can be manually deleted:

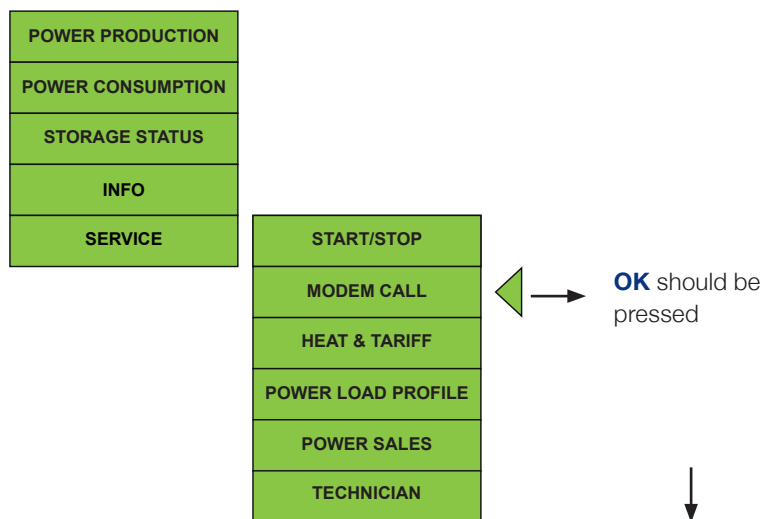


Illustration 41

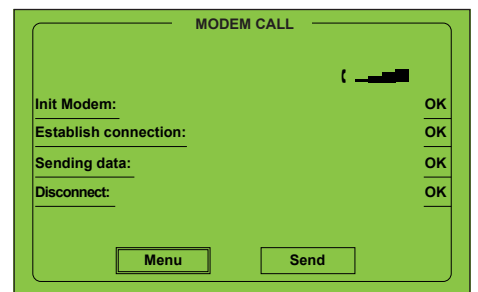


Illustration 42

The keys ▲ ▼ will position the cursor on **Send** and **OK** should be pressed to call up and to send. The communication system will be initialised.

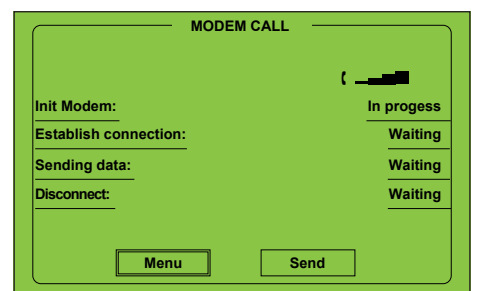


Illustration 43

The connection will be established.

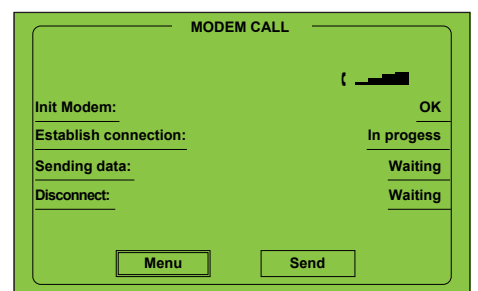


Illustration 44

The data will be transmitted.

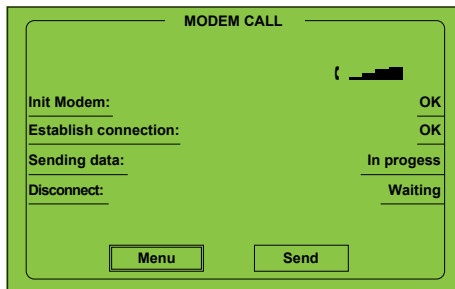


Illustration 45

The connection will be terminated.

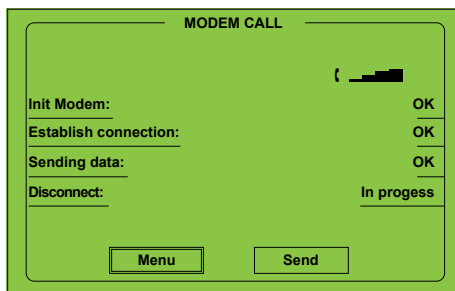


Illustration 46

4.9 TECHNICIAN

The menu item technician contains the password-protected access for the installation technician and service technician. Any unauthorised utilisation of the functions within this menu item and the possible resulting damage(s) to the system will invalidate any guarantees and/or warranties.

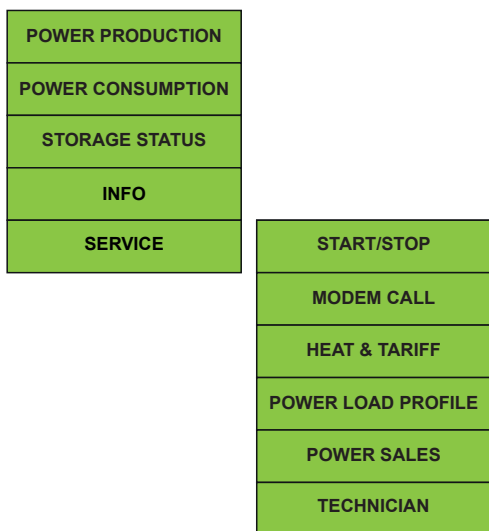


Illustration 47

Press **OK** and the Technician Login will be displayed.

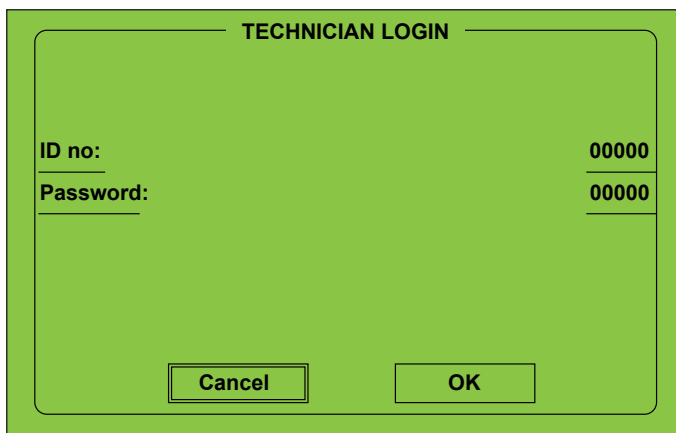


Illustration 48

5. OPERATING INSTRUCTIONS FOR SOFTWARE VERSION 1.10.XX ->

The following chapters will describe how the XRGI® system will be operated via the controls. The operations, which are described in these chapters, can be executed by the owner and/or operator. If you should have any questions relating to the operating instructions, please contact your EC POWER dealer.

5.1 OPERATING ELEMENTS

The XRGI® system will be exclusively operated with the iQ Control Panel.

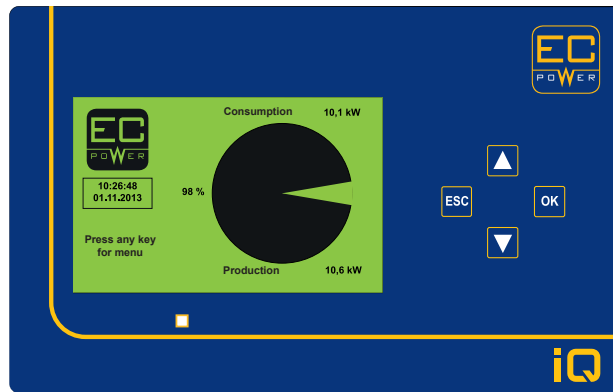


Illustration 49

Operation of the keys

The 4 keys in the iQ Control Panel allow the following functions to be selected in the menu:

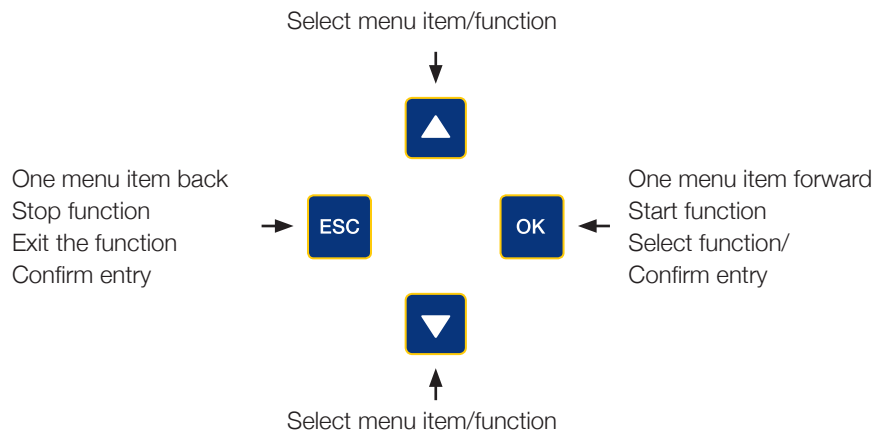


Illustration 50

The display

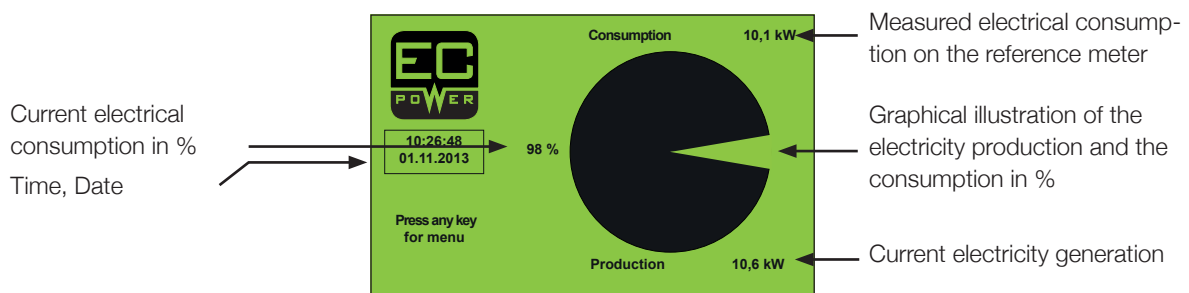


Illustration 51



Illustration 52



Illustration 53

■ Automatic operation
 ■ Alarm Stop
 ■ Manual operation

5.2 SYSTEM ON/OFF



INFO! There is a risk of injury when all the provisions and requirements for safe operation are not fulfilled.

- All safety equipment and/or devices and protective measures must be available and functioning. Safety equipment and/or devices may not be removed, amended, modified or manipulated.
- The XRGI® system must be professionally installed, connected and commissioned.

Manual start

- Inspect whether all the noise-abatement cladding has been professionally installed.
- Inspect whether any shut-off cocks in the heating oil supply line(s) could be open.
- Inspect whether the shut-off valve in the hot water supply pipe is open.
- Switch on the main switch on the iQ Control Panel.

When the XRGI® system is operated in the full-automatic mode, the controls ensure a continuously optimised and economic supply for the actual electricity and heat requirements.

The XRGI® system can be switched off as follows:

- ▶ Select in the menu item **System on/off -> OK**

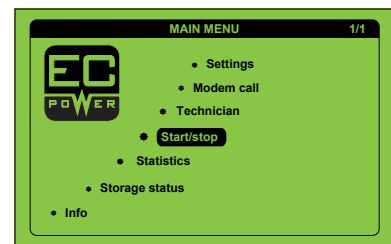


Illustration 54

The following request will be displayed:

- ▶ Press **OK**, to switch on the XRGI® system.



Illustration 55

Manual stop

The XRGI® system can be switched off as follows:

- ▶ Select in the menu item **System on/off -> OK**

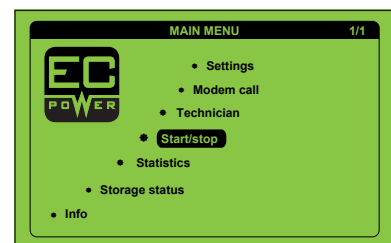


Illustration 56

The following request will be displayed:

- ▶ Press **OK** to switch off the XRGI® system.



Illustration 57

Automatic operation

The electricity and heat consumption will be continuously monitored during the automatic operation mode to ensure the best possible, economic operation.

In the normal, automatic operation mode, the XRGI® system switches on and off as required as illustrated below:

Standby: Waits for an increase in the electricity and heat requirement.

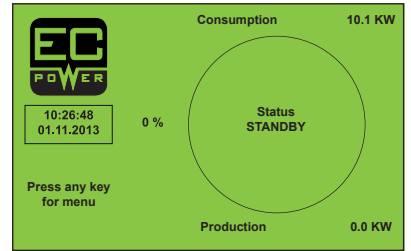


Illustration 58

Starts: The system starts up.

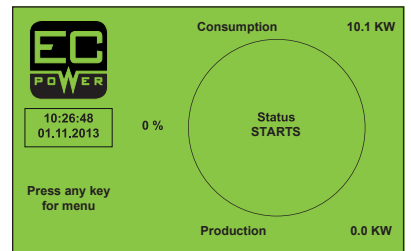


Illustration 59

Ventilation: The fuel metering system and engine block will be ventilated with fresh air.

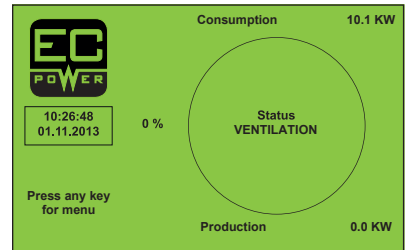


Illustration 60

Calibration: The control unit inspects the function of the system.

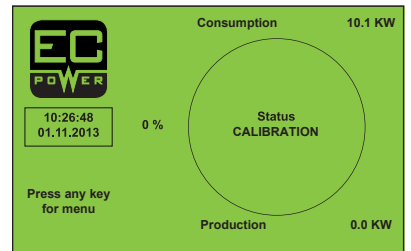


Illustration 61

Normal: Automatic regulating of the performance.

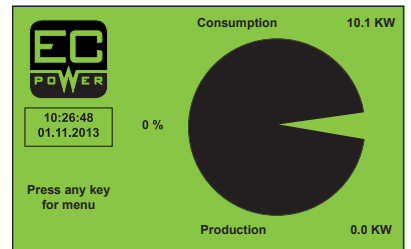


Illustration 62

Stop: The system switches off due to insufficient electricity or heat demands.

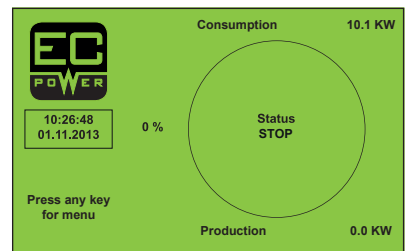


Illustration 63

5.3 STATISTICS

The iQ Control Panel has a function for 24-hour statistics and weekly statistics for electricity consumption and electricity generation. Both functions are designed the same.

- ▶ Move the cursor to Statistics and press **OK** to display the statistics.

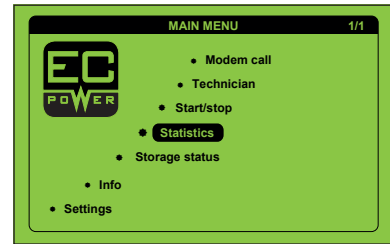


Illustration 64

24-hour statistics

The kW axis will be automatically scaled to display the statistics as exactly as possible. The time axis displays the 24 hours and the electrical performance levels as average for 15 minutes, this means: If a production of 13.0 kW is displayed for 2 p.m., then this is the average for the period from 1.45 p.m. to 2 p.m. The statistics will be updated every 15 minutes.

Consumption for the last 24 hours

- ▶ Clicking with the keys ▲▼ enables you to access the next pages.

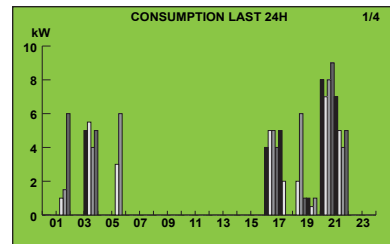


Illustration 65

Production for the last 24 hours

- ▶ Press **ESC** to return to the menu.

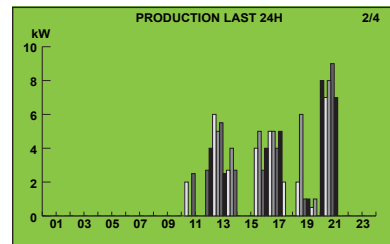


Illustration 66

Weekly statistics

The kW axis will be automatically scaled to display the statistics as exactly as possible. The time axis displays the week day; every column is an average for the relevant 24 hours. The statistics will be updated at midnight.

Consumption for last week

- ▶ Clicking with the keys ▲▼ enables you to access the next pages.

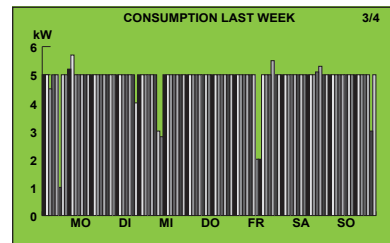


Illustration 67

Production for last week

- ▶ Press **ESC** to return to the menu.

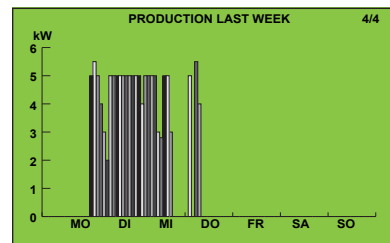


Illustration 68

5.4 INPUT STATUS

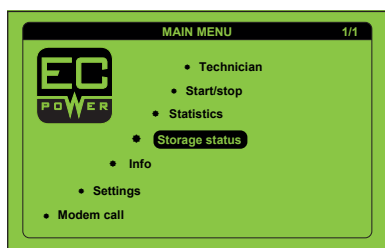


Illustration 69

→ Move the cursor to Input Status and press **OK** to display the system overview with input status.

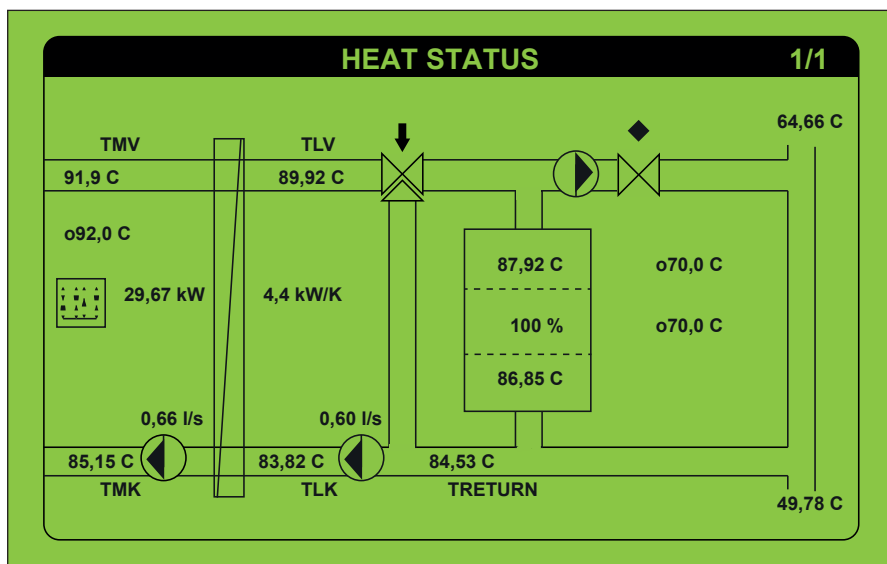





Illustration 70

Designations

TMV	Flow temperature from the engine
TMK	Return flow temperature to the engine
TLV	Flow temperature after passing through the heat exchanger
TLK	Return flow temperature before reaching the heat exchanger
	Heat production/heat performance of the engine
29.67 kW	
kW/K	Efficiency of the heat exchanger in kW/K (below 2.5 kW/K is critical)
T RETURN	Return flow temperature from the Storage Tank and network to the Q60/Q40-Heat Distributor
s70.00°C	Target value for the flow temperature to the heating grid (adjustable)
o70.00°C	Operative target value
64.66°C	Flow temperature to the heating grid
	Return flow temperature from the heating grid
49.78°C	
	Status of the Storage Tank
	Upper temperature
T1 →	Fill level
T2 →	Lower temperature

Valve identification

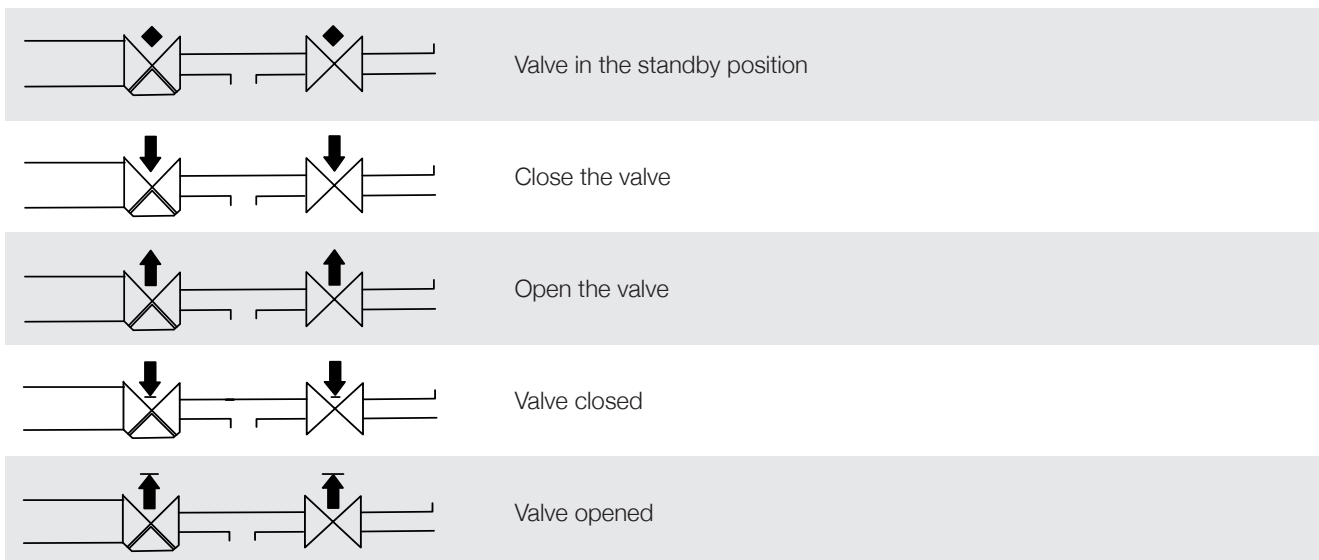


Illustration 71

▶ Press **ESC** to return to the menu.

5.5 INFO (OPERATION INFORMATION)

▶ Move the cursor to Info and press **OK** to display the operational information.

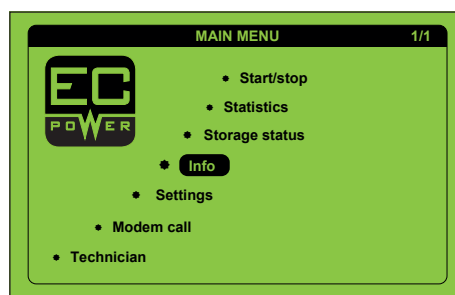


Illustration 72

Without input

INFO		1/1
Operating hours:	2036	H
Power consumption:	6638	kWh
Power production:	10015	kWh
Heat production:	23959	kWh
Fuel consumption:	40408	m3
Time to service:	8182	H

Illustration 73

With input

INFO		1/1
Operating hours:	2036	H
Power consumption:	6638	kWh
Power production:	10015	kWh
Power sales:	0	kWh
Heat production:	23959	kWh
Fuel consumption:	40408	m3
Time to service:	8182	H

Illustration 74

▶ Press on **ESC** to return to the menu.

5.6 SETTINGS

The following will describe the amendment(s) to the most important values in the iQ Control Panel. The values have already been set by the EC POWER dealer during the commissioning. If you should however wish to amend any value(s), please take especial care. We recommend that you note the initial value(s) before amendments so that, when necessary, they can be reset again at a later date. If you are unsure whether you are allowed to amend a value or not, please consult your EC POWER dealer beforehand.



INFO! Incorrectly entered and/or amended setting values can lead to a malfunction or shut down of the XRGI® system.

- ▶ Move the cursor to **Settings** and press **OK** to display the settings.

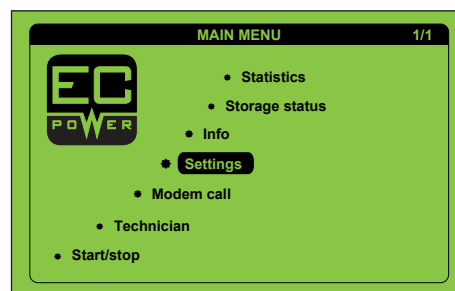


Illustration 75

Time and language

- ▶ Pressing the keys ▲▼ will move the cursor to the value's line.
- ▶ Press **OK** to amend the value.
- ▶ The keys ▲▼ amend the value.
- ▶ Press **OK** to save the new value.
- ▶ Press **ESC** once more to return to the menu.
- ▶ Clicking with the keys ▲▼ enables you to access the next pages.

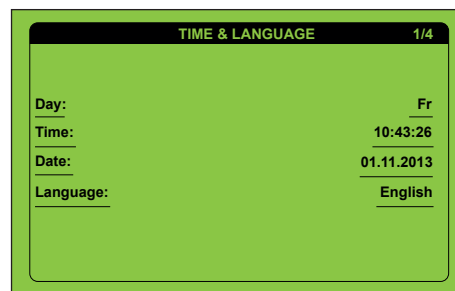


Illustration 76

Heat and Tariff

If the heating installation is equipped with e.g. a boiler and the XRGI® system should be switched off in minimum power periods, then select **Yes**. High tariff periods for electrical production with multiple tariffs.

Heat backup

If a heat backup is available (e.g. a boiler), then this entry can be set to **YES** accordingly. The iQ Control Panel will then switch to the boiler as a heat source in periods of low heat requirements and electricity requirements. The XRGI® system will then remain switched off in these periods and the iQ Control Panel will wait for higher heat requirements and electricity requirements. If the XRGI® system should also satisfy the basic-load, heating requirement outside the high tariff periods, then **NO** must be selected by heat backup.

- ▶ Pressing the keys ▲▼ will move the cursor to the heat backup line.
- ▶ Press **OK** to amend the setting.
- ▶ The keys ▲▼ will select **Yes/No**, with **ESC** it will be saved.

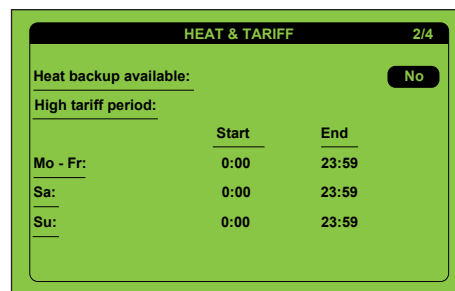


Illustration 77



ATTENTION! If the boiler is temporarily out of service, then amend the setting to NO. The XRGI® system will ensure the heat production at all times.

High load periods

If the installation only has one electricity tariff, then the highest tariff will be set for all 24 hours of the day. If there are multiple tariffs, then the periods for the maximum tariff period will be entered at the beginning and end of the period.

3 periods are possible: Every working day
 Saturdays
 Sundays

Example of an entry

	Beginning	End
24-hour high tariff	0:00	23:59
HT in special time periods	6:00	21:00
No HT within 24 hours	0:00	0:00

Utilising the entered time periods optimises the controlling of the heat production and electrical production.

If e.g. the XRGi® system is preferred as the method for satisfying the peak electrical requirement for certain times of the day, then these times can be programmed here as high tariff periods. The setting for heat backup enables the selection for whether the XRGi® system will operate outside the peak electrical period(s) or should be switched off.

Entries

- ▶ Move the cursor with the keys ▲▼ to the time to be amended and press **OK**.
The cursor will then flash on the hour digit.
- ▶ Press the keys ▲▼ to amend the hours, press **OK** and the cursor will switch over to the minute digit.
- ▶ Amend with the keys ▲▼ **OK** to complete the entry.
- ▶ Press the **ESC**-key to toggle between the minutes and hours.

Please implement this procedure for amending all time periods and/or entries.

The amendments will firstly be effective after a few seconds. The settings can be amended at any time - even during the automatic operating mode.

Power load profile

If a reference meter for the electricity consumption of the object is available and switched off, then **Power load profile** will be displayed. Otherwise, the menu item will display at this point **Heat-controlled** (refer to the next section).

Load periods can be entered here. The load periods are the time periods in which the electricity consumption is the highest and which will be utilised for optimising the heat production and electricity production.

A manual or automatic setting for the load period can be freely selected. The periods for every day will be adjusted accordingly at midnight in the automatic function with regard to the measured consumption.

Manual entries

- ▶ The periods can be freely selected in the manual entries.
- ▶ Move the cursor with the keys ▲ ▼ to the line **Manual Input**.
- ▶ Press **OK** to select amendments for the settings.
- ▶ The keys ▲ ▼ will select **Yes/No**, with **ESC** it will be ended.

High load periods

If manual settings are implemented, then the time period with the highest electricity consumption should be entered.

3 periods are possible:

- Every working day
- Saturdays
- Sundays

Example of an entry

	Beginning	End
24-hour high tariff	0:00	23:59
HT in special time periods	6:00	21:00
No HT within 24 hours	0:00	0:00

Utilising the entered time periods optimises the controlling of the heat production and electrical production.

Entries

- ▶ Move the cursor with the keys ▲ ▼ to the time to be amended and press **OK**. The cursor will then flash on the hour digit.
- ▶ Press the keys ▲ ▼ to select the hours, press **OK** and the cursor will switch over to the minute digit.
- ▶ Press the keys ▲ ▼ to select the minutes and press **OK** to complete the process.
- ▶ Press the **ESC**-key to toggle between the minutes and hours.

Please implement this procedure for amending all time periods and/or entries.

- ▶ Move the cursor to **Save** and press **OK** to save.

The amendments will firstly be effective after a few seconds. The settings can be amended at any time - even during the automatic operating mode.

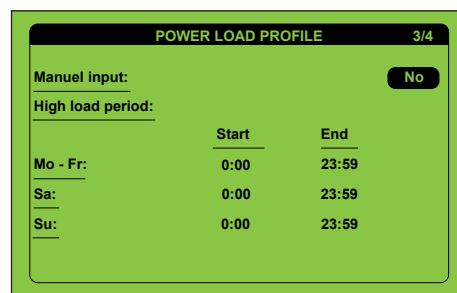


Illustration 78

Heat-controlled

Entering the consumption value in maximum and minimum load as well as the associated High load periods will set the consumption template for the XRGI® system.

Stop in low load period

If the XRGI® system should switch off with possible minimum loads, then **Stop in low load period** should be answered with **Yes** accordingly. If a heat backup is available, then the system will switch off in cases of minimum loads. If there is not a heat backup available, the XRGI® system will only continue to operate to prepare a minimum of heat in the vessel.

- ▶ Pressing the keys ▲▼ will set the cursor to **Stop in low load period** accordingly.
- ▶ Press **OK** to select amendments for the settings.
- ▶ The keys ▲▼ will select **Yes/No**, with **ESC** it will be ended.

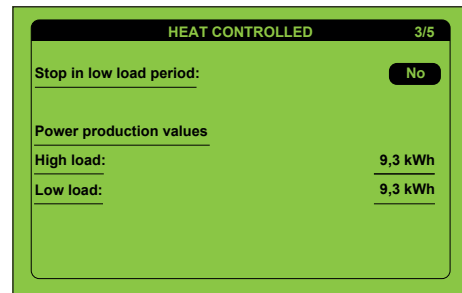


Illustration 79

High load periods

The High load period determines the time in which the preferred electricity should be produced. The minimum load value is valid for periods outside these time periods.

3 periods are possible: Every working day
 Saturdays
 Sundays

Example of an entry

	Beginning	End
24-hour high tariff	0:00	23:59
HT in special time periods	6:00	21:00
No HT within 24 hours	0:00	0:00

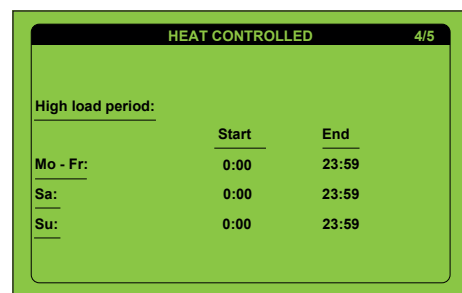


Illustration 80

Utilising the entered time periods optimises the controlling of the heat production and electrical production.

Entries

- ▶ Move the cursor with the keys ▲▼ to a time point which has to be amended and press **OK**. The cursor will then flash on the hour digit.
- ▶ Press the keys ▲▼ to select the hours, press **OK** and the cursor will switch over to the minute digit.
- ▶ Press the keys ▲▼ to select the minutes and press **OK** to complete the process.
- ▶ Press the **ESC**-key to toggle between the minutes and hours.

Please implement this procedure for amending all time periods and/or entries.

- ▶ Move the cursor to **Save** and press **OK** to save.

The amendments will firstly be effective after a few seconds. The settings can be amended at any time - even during the automatic operating mode.

Input

This enables the setting for whether electricity should be fed into the grid.

Power sales

If the electricity produced should not be fed into the grid, then **NO** (Standard) should be selected. The entered input times will not be implemented. The iQ Control Panel will then attempt to generate the resulting performance on the basis of the manual entries or the reference measurement.

If electricity should be fed into the grid, then **YES** must be selected here. In addition, the time period can be set here for when the electricity can be sold to the grid operator. The iQ Control Panel will then attempt to sell the electricity within the given period as long as the produced heat will be accepted.

	Start	End
Mo - Fr:	0:00	23:59
Sa:	0:00	23:59
Su:	0:00	23:59

Illustration 81

Input periods

The periods agreed with the grid operator will be given.

3 periods are possible: Every working day
 Saturdays
 Sundays

Example of an entry

	Beginning	End
24-hour high tariff	0:00	23:59
HT in special time periods	6:00	21:00
No HT within 24 hours	0:00	0:00

Utilising the entered time periods optimises the controlling of the heat production and electrical production.

Entries

- ▶ Move the cursor with the keys ▲ ▼ to a time point which has to be amended and press **OK**. The cursor will then flash on the hour digit.
- ▶ Press the keys ▲ ▼ to select the hours, press **OK** and the cursor will switch over to the minute digit.
- ▶ Press the keys ▲ ▼ to select the minutes and press **OK** to complete the process.
- ▶ Press the **ESC**-key to toggle between the minutes and hours.

Please implement this procedure for amending all time periods and/or entries.

- ▶ Move the cursor to **Save** and press **OK** to save.

The amendments will firstly be effective after a few seconds. The settings can be amended at any time - even during the automatic operating mode.

5.7 MODEM CALL

The modem connection of the XRGI® system will periodically transmit (around 2 times a day) service information and operational information to the EC POWER service database. This is also available as a call-up with the relevant customer log-in following an appropriate agreement with your professional trade partner.

In order to test the connection or update the database, the modem call up can be manually deleted:

- ▶ The keys ▲▼ will position the cursor on **Send** and pressing **OK** will call-up and send. The communication system will be initialised.

The connection will be established

The data will be transmitted

The connection will be terminated

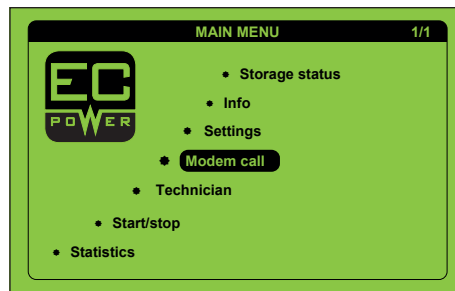


Illustration 82

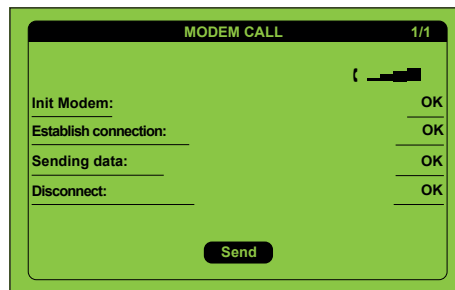


Illustration 83

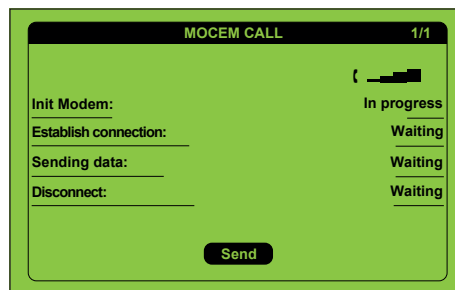


Illustration 84

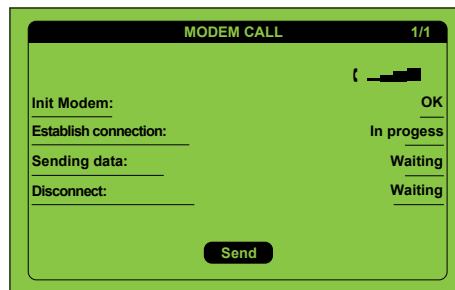


Illustration 85

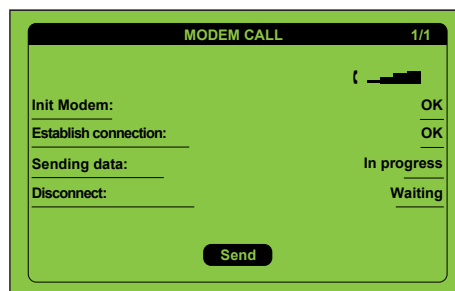


Illustration 86

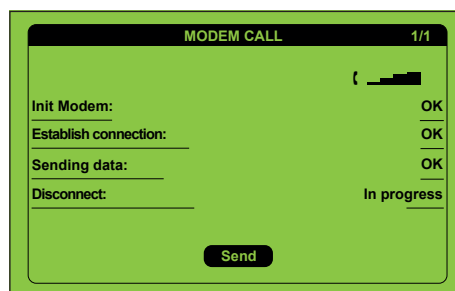


Illustration 87

5.8 TECHNICIAN

The menu item **Technician** contains the password-protected access for the installation technician and service technician. Any unauthorised utilisation of the functions within this menu item and the possible, resulting damage(s) to the system will invalidate any guarantees and/or warranties.

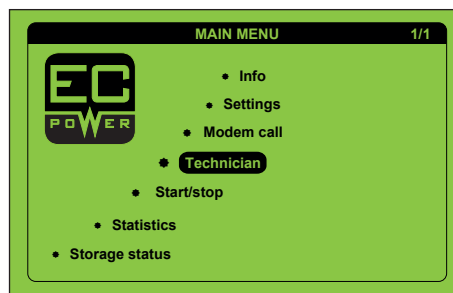


Illustration 88



Illustration 89

6. ERRORS AND TROUBLESHOOTING



ATTENTION! Hazards during troubleshooting.

- To prevent any hazards, danger, risks to yourself and/or damage(s) to the XRGI® system, you should assign any troubleshooting works to your EC POWER dealer.

6.1 DISPLAY FOR ERROR NOTIFICATIONS

If an error occurs during the operation, then the XRGI® system will switch off automatically. The light emitting diode on the control panel will glow in red to indicate errors. The control units automatically transmits the identified error via the integrated modem to the central EC POWER service database.

Error description for alarms

Pressing the key displays the error description for the alarm stop. A new start up of the XRGI® system should only be executed after consultation with a service technician. Resulting damage(s) from an incorrect new start up will invalidate any guarantees and/or warranties.

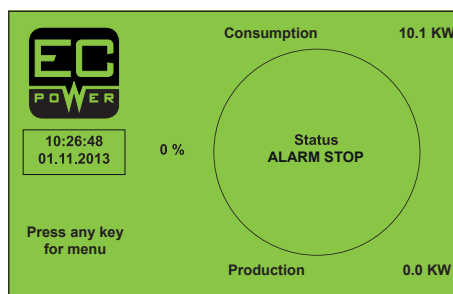


Illustration 90

Acknowledging alarms

- ▶ Press **OK** to reset the alarm to zero.



ATTENTION! Hazards from non-remedied errors.

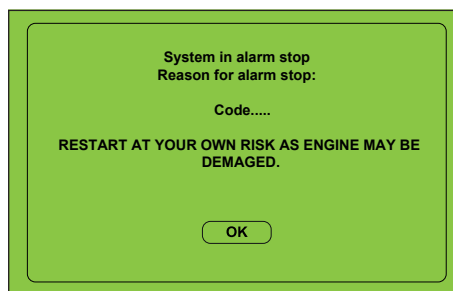


Illustration 91

The cause of the error must be identified and professionally remedied before deleting the error notification.

7. CARE AND MAINTENANCE

Servicing works may only be executed by authorised EC POWER personnel.



ATTENTION! Only execute servicing works on the XRGi® system when it is in a shut down condition and when it has completely cooled down! Otherwise, there will be a risk of burns from hot surfaces, parts and/or scalding from mediums which may leak and/or escape.

Contact with engine lubricants and moving parts



ATTENTION! Always wear protective gloves and safety glasses when coming into contact with engine lubricants!

Contact with engine oil:

- **Objects:**
Clean up with absorbent materials and dispose of as hazardous waste. Replace clothing and shoes which are saturated with oil. Do not put any oily rags and/or cloths in your pockets.
- **Skin:**
Clean with water and soap or specialised, hand cleaning agents and, where necessary, with a nail brush. Petrol, solvents or other similar fluids should not be utilised as cleaning agents. Smear the skin with fatty, skin creams after washing and cleaning.
- **Eyes:**
Cover; and visit an ophthalmologist immediately.

7.1 CARE

Clean the cladding of your device with a damp cloth and a little bit of soap. Do not utilise any abrasive agents or cleaning agents which could damage the cladding or the operating elements which are made of plastic.

7.2 MAINTENANCE

The servicing of your XRGi® system with the service kit must be executed in accordance with the following intervals:

XRGi 6G-TO	10,000 Operating hours
XRGi 9G-TO	10,000 Operating hours
XRGi 15G-TO	8,500 Operating hours
XRGi 20G-TO	6,000 Operating hours

or, at the latest, after 2 years so that the XRGi® system can operate safely and reliably.

e.g. (XRGi 20G-TO):

- 6,000 hours or, at the latest, after 24 months
- 12,000 hours or, at the latest, after 48 months
- 18,000 hours or, at the latest, after 72 months
- 24,000 hours or, at the latest, after 96 months
- 30,000 hours or, at the latest, after 120 months

Regularly implemented servicing complies with the requirements and provisions for a long-term, operational availability as well as product sustainability, reliability and the anticipated operating life-cycle of your XRGi® system. A professionally and regularly serviced XRGi® system will operate more efficiently and will therefore be more profitable.

A service kit is necessary for the servicing works.



DANGER! Never attempt to execute servicing works or repairs on your XRGI® system yourself. Assign any such works to a recognised, professional trade organisation. We recommend that you take out a full service contract. Improper or irregular servicing can affect the operational safety of the device and lead to damage to objects and injuries to personnel.



INFO! If the servicing works are executed later than 200 operating hours after the recommended operating hour's interval, then the guarantees and/or warranties provided will be invalidated. Only approved spare parts and components from EC POWER may be utilised. If other components and materials are utilised, then the guarantees and/or warranties provided will be invalidated.

Service interval indication display

You can monitor the operational hours of your XRGI® system in the EC POWER service database. This position will additionally indicate, with the following symbols, when your XRGI® system is due for its next service:



Next service in:

Please inform your EC POWER qualified skilled tradesman and let them execute the service. If a service interval is not indicated, then a service on your XRGI® system is necessary after a period of no longer than 2 years. The service handbook must be filled out and signed on site by the service technician after every service.

7.3 ADDITIONAL SERVICE PACKAGE

In addition to the regular, service intervals, your XRGI® system must be serviced in accordance with the following, periodical intervals with the additional service packet:

XRGI 6G-TO	30,000 Operating hours
XRGI 9G-TO	30,000 Operating hours
XRGI 15G-TO	25,500 Operating hours
XRGI 20G-TO	18,000 Operating hours

or, at the latest, after 3 years so that the XRGI® system can operate safely and reliably.

e.g. (XRGI 20G-TO):

- 25,500 hours or, at the latest, after 36 months
- 50,000 hours or, at the latest, after 72 months
- 75,500 hours or, at the latest, after 108 months



www.ecpower.eu

XRGI[®]
ELECTRIFYING HEAT