Intelligent YACHTS

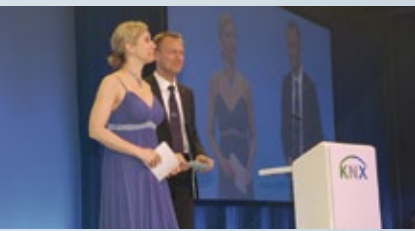Yachts equipped with KNX® technology

Speak KNX®

Winner of the KNX Award 2012
In the „Special" category

eibmarkt®.com GmbH, a 100% subsidiary of EIBMARKT GmbH Holding has earned the KNX® AWARD with the motor yacht KONNEXA 42 in the category „Special". This award is considered the highest honour for the most intelligent and most extraordinary KNX® projects worldwide.

Several thousand project applications were submitted. eibmarkt®. com GmbH has come out on top against top-class projects from different continents. More than 1,500 spectators from 76 nations followed the Award ceremony in the course of the KNX Top Events at the light+building trade fair in Frankfurt. The honoured projects from Asia, the USA and Europe demonstrate a variety of clever solutions using KNX.

The **Winner** of the
KNX Award 2012 in „Special" category

WINNER

KNX Award
2012

Chosen from several thousand
projects from 48 countries

WINNER in the „special" category   **KNX**

eibmarkt®.com GmbH is the first company that has equipped a sport yacht with KNX®. In the motor yacht KONNEXA 42, KNX is not only used for comfortable light scenes, room temperature regulation and media control but also for monitoring functions, energy and load management, presence simulation etc. A special highlight is the interface with the nautical onboard electronic system NMEA and the machine protocol CAN Bus where all important ship data can be visualized.

The future on 42 ft – no compromise

Marco Labáhn (CEO)

The 21st century is marked by high tech and the increasing requirements as to a networked world. The vision to manage your free time in a safe and highly technical way becomes a reality for yachting, now.

KONNEXA 42 has been fully equipped with automation technique by eibmarkt.com GmbH following a two-year planning stage. It is the first KNX® yacht in the sports boat sector under 20 m length that comes with modular KNX® packages as standard delivery.

For decades, the importance of KNX® as the only open standard worldwide for applications in the building automation has been increasing. KNX® – a synonym for safety, convenience and efficiency.

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A MILESTONE for shipyards, dealers
and owners thanks to modular KNX® equipment packages.

The KONNEX Bus (KNX®) in the high seas?

On big ferries KNX® is already partially applied in simple structures but not in the sports boat sector. Here, deep-rooted and long-lived "isolated solutions" can be found in the area of automation that can now be improved considerably by the use of KNX®. The project posed many different challenges such as the contact with extreme conditions (heat, cold, movement, very salty air, strong movements and hits) or the often huge amount of data from the CAN bus or the NMEA system.

After a two-year planning stage and 8 months of system integration as well as many different approval tests and examinations by SeeBG (ship safety) later, MY KONNEXA is currently the first KNX® yacht for commercial use worldwide that has been equipped with standard modular KNX® packages and that disposes of a licence as exhibition and training yacht in the sport boat sector.

All incorporated KNX® devices, such as sensors and actuators can understand each other to **100%** no matter what manufacturer.

Empty batteries?

Blown onshore power supply fuse due to too high power consumption? Annoying, noisy devices during the night? Missing light effects? Temperature fluctuations on board? Inefficient air-conditioning concepts? No central yacht surveillance functions? Fuel consumption too high? Want to call up weather data wherever you are? Has the yacht been moored safely? Have really all flooding valves been closed? These and many more are problems many "Yachties" have to cope with everyday.

KNX® deals with these problems and looks after them basically round the clock. KNX® optimizes the connections depending on the wishes of the owner. It regulates controls and visualizes all processes.

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Presence simulation – prevent burglary and theft before it is too late

You can log directly onto the visualization server and view the video system and all electric and electronic components on board. You can follow the movements of the yacht or listen to live audio data on board. Theoretically, you would even be able to park the yacht using your iPhone! Of course, this is not allowed, but it is made possible thanks to the integrated interface with NMEA, the standard protocol on yachts for nautical on-board electronics and the CAN bus, a protocol for machines/engines (known from the automobile industry and process control engineering).

eibmarkt.com GmbH in cooperation with IT-GmbH have developed an interface between KNX® and NMEA and, thus, are able to visualize all relevant ship data and use them in control and regulating processes. You can have the current weather data wake you up, communicate via voice control with the yacht or control the applications directly with the help of mobile phone or PC conveniently from home or any other place.
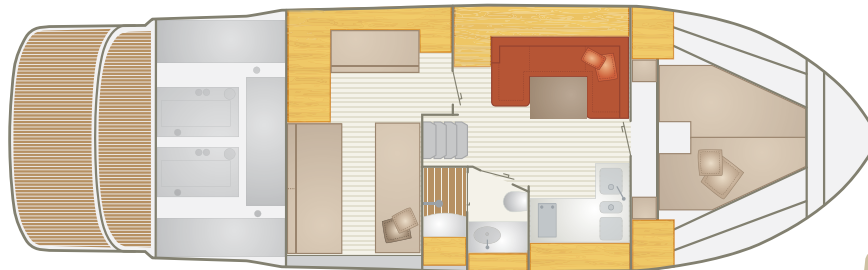
When the onshore power supply is disconnected, all flooding valves are closed AUTOMATICALLY by KNX® and opened again if required by means of the presence detector.

KNX® automation on board

It is the owner who determines the degree of automation and the complexity of the functions on board! All automatic functions can be visualized individually on the touch screen, modified by a simple mouse click or influenced by manual and automatic functions, timer programmes and many more. A visualization PC or KNX® touch screen monitor is an important and wise feature. Here, a Touch PC from Pro Face was used that disposes of the relevant certifications with regard to the load types temperature, humidity, vibrations, EMC etc (CE, DNV) for the use in yachts.

Presence detectors serve multiple purposes, from light control over day and night operation in different light scenes up to the operation of the alarm system.

Internet, multimedia as well as malfunction, operation and status messages are as self-evident as automatic smoke detectors and bilge monitoring with special KNX® compatible water sensors.

For the surface design (sensor technology) the decision fell on a touch sensor module & RCD room controller made of stainless steel from the Albrecht Jung GmbH & Co. KG. It is not only the many different functions but also the elegant, timeless and appealing flat design with large touch areas that makes it ideal for yachts.

The KNX® system was integrated parallel to the existing system and is completely independent, it can be switched on or off at any time.

Besides multiple convenience and monitoring functions SAFETY PACKAGES play a particularly important role in all KNX® on-board functions.

KNX® intricacies – to the last detail

As far as possible, the sophisticated lighting system was designed in a dimmable way using LED RGB technology. Sensors installed in the floor area activate specific scenes such as illuminating the way to the bathroom without glaring lights in night operation or the way to the exit in case of smoke and fire.

Weather warnings are executed via KNX® on the visualization touch screen and flush-mounted KNX® displays. The air pressure is monitored chronologically since a fast drop within a short time indicates a serious deterioration of the weather. A KNX® weather station installed on the roof and specially adapted to the extreme conditions and mounted on a special equipment rack supplies further measured data for evaluation. Using phenomenological criteria, the Beaufort scale for wind speeds of 1 – 12 Bft is displayed via KNX® based on the incoming weather station data directly on the KNX® server and is visualized on the connected control terminals in real time.

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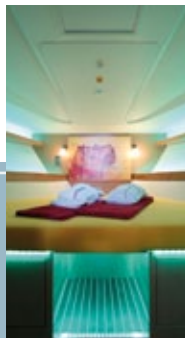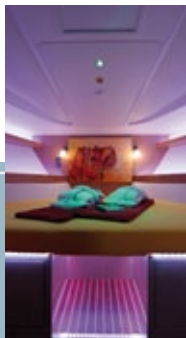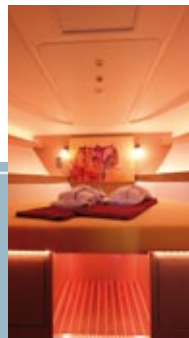
Yachts equipped with KNX® receive a considerable
INCREASE IN VALUE

KNX® system integration data

On the KONNEXA yacht approx. 100 m of KNX® bus cable, 800 m of single core, 350 m of highly flexible special 230 V cable, 350 m of network and multimedia cable and 200 m of other types of cable and electric lines were installed. In five electrical distributions and six rooms all in all 91 KNX® devices of different manufacturers were installed as DIN rail-mounted devices as well as flush-mounted and on-wall that communicate via approx. 1,800 group addresses in the bus system (incl. NMEA).

Besides KNX® logic modules and KNX® routers a KNX® server captures and processes all information and visualizes it on a KNX® touch screen monitor and 4 other TV control panels via a HDMI matrix.

In addition to the usual 230 V electric circuit the onboard 12V circuit had to be extended considerably to permit the 12V/230V mixed operation typical onboard.

Especially the energy and load management for a secure supply via onshore power supply, battery stacks, power inverter and generator and their interaction was a real challenge but could be solved by means of KNX® in an intelligent way. The completely new legal and safety-relevant requirements in seafaring and, thus, the enormous complexity of automation and installation as well as the high number of trades to be included made more than 2,000 hours of planning, testing and system integration necessary.

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Now, KNX® has been accepted in countless fields of operation in almost all countries worldwide and stands for

LIFELONG QUALITY.
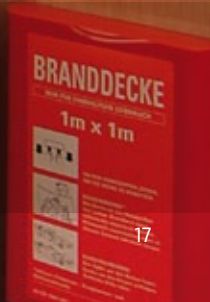
KNX® installation KONNEXA 42

1. Visualization server KNX® with touch screen and customer ports

2. Connection of different trades NMEA 0183, NMEA 2000, CAN to KNX® server

3. System integration KNX® Volvo Penta, generator, inverter, Raymarine

4. Central and peripheral LED light effects inside/outside, light scene control

5. Energy and load management of consumers, history administration

6. Maintenance management, motor management, Eco drive calculation

7. Timer programmes, counter value capture, counter administration

8. Room controller light and single room regulation heating/ventilation

9. Media control multimedia, internet, video

10. SMS, IP, voice data transfer, voice response/voice control

11. Smoke and leakage detectors of all bilges

12. Window and door monitoring, malfunction, operation and alarm messages

13. Protection function against cold and heat, flap and valve control

14. Weather station with data recording, limit value monitoring

15. Presence simulation, video surveillance, alarm system

16. Service connection remote server eibmarkt.com GmbH

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At the helmstand,
KNX® DISPLAYS
inform the skipper about all relevant data.

Unlimited applications with KNX®

Installation chaos during the system integration

With KNX® you experience almost unlimited possibilities of application – from the alarm system over the regulation of heating, climate and ventilation up to multimedia, convenience and safety packages. Special importance was attached to alleged details. So, freely configurable dimming parameters are integrated in the KNX® depending on day/night operation as well as a KNX® touch cleaning control to detect operating errors. Safety-relevant data such as water invasion & locating information are immediately reported all over the ship by means of voice response.

If the maximum onshore power is exceeded, the KNX® current actuators and logic functions start immediate action (current inverter with own battery stack, generator etc.) to cover the energy requirements without blowing the onshore power supply fuse or switching off devices. The operating mode "Sailing" is detected by the specially developed KNX® NMEA interface and, thus, eco modes for devices are made possible. This special interface permits countless other applications. For example, malfunction, alarm and operation messages of the nautical sensors or engines can be responded to in time. All nautical ship data can be visualized and evaluated in the KNX® server for further calculation. Thus, monitoring consumer and engine data permit a KNX®-calculated and time-related eco drive (fastest and slowest eco drive) depending on wind, waves and load.

Ventilated, rubberized KNX® interface and line sub-distribution

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Technical data KONNEXA 42

CE-category	B=outside coastal waters
Length, overall	13.00 m (42 ft)
Width	4. 00 m
Displacement	11.00 t
Motorization	2xVolvo Penta D6 370
Maximum speed	38 knots (approx. 70 km/hr)
Passage height	approx. 4.00 m
Fuel tank	720 l
Water tank	250 l
Cabins below-deck	3 + bathroom/shower/WC
Berths	4 + 2
Maximum passengers	12
Headroom below-deck	permanent min. 2.10 m
Basic price ex works	EUR 399 T
Value after modification	EUR 599 T

Special features:

Following a two-year design stage, KONNEXA 42 was fully equipped with KNX® automation technique by eibmarkt.com GmbH. It is the first KNX® motor yacht in the sports boat sector under 20 m length that has been equipped with modular KNX® packages available as standard delivery and is certified as training yacht.

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