Project Book

B & R DESIGN

Dear Customers and Designers !

You get into the hand the new issue of the project catalog of program-mable controllers produced by Teco a.s.
This project book is dedicated to PLC system Tecomat Foxtrot desig-ned for any application in industry, transport, measurement and energy control etc.
Foxtrot system is younger and smaller brother of time-proven big mo-dular system Tecomat TC700. But smaller dimensions doesn´t mean smaller range of functionality. On the other way, you may find in it all functions of big programmable controllers with IEC EN 61131 standard compatibility, even combined with latest technologies known better from IT, telecommunication and internet.
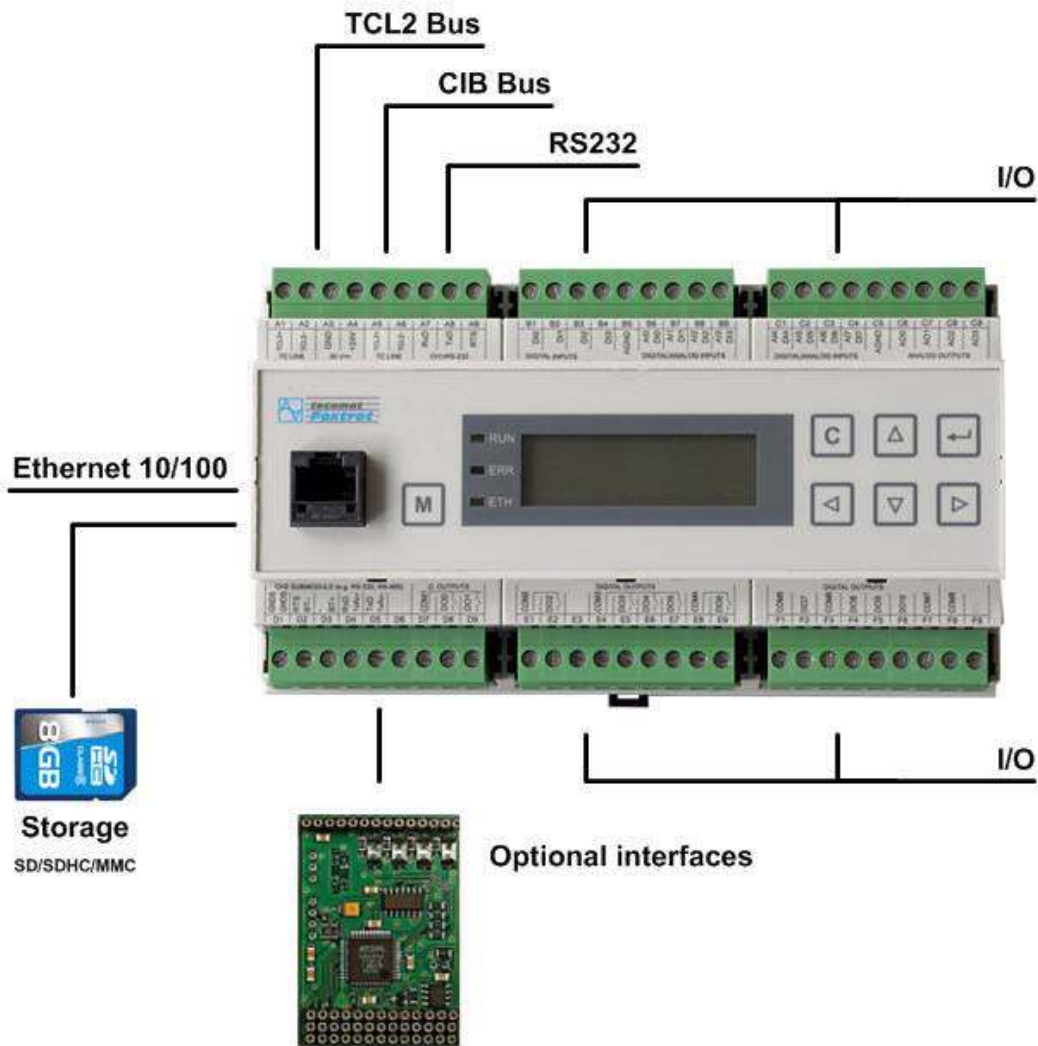
Our company B&R design BV starts 3 years ago with the exploration of this Foxtrot PLC's and all his interfaces. The combination of this PLC with his internal WEB interface makes it very useful in remote applications. Tablet PC's like the iPad and Smartphone's became the base for a lot off control systems these days.
The advantage of a web interface like the Foxtrot, is that you only need a devices with a browser. No extra software or license is neces-sary to control the functions of the Foxtrot application.

There are a lot of ways to communicate with the Foxtrot PLC. There is the TLC bus, a RS485 bus to connect the lineup of Teco I/O modules. The CIB bus is a two-wire bus system to expand the Foxtrot system into field of intelligent building control and building management sy-stems. For wireless control there is the RFox system, a extension of Tecomat Foxtrot with wireless input/output modules in frequency band 868 MHz. The Foxtrot have also different TCP/IP and RS232/485 ports that can be used to setup interfaces to a lot of different other systems.

In the last 3 years we introduced the Foxtrot products in a lot of diffe-rent applications. Many interfaces where created and programmed in the Foxtrot PLC, some hardware was special designed to make every-thing possible that the customers asked for. A important issue here is the fantastic support of the people of Teco, they assist in software and hardware with a great passion for their products. In this project book we want to show you several possibilities with the Teco products and we hope to trigger more system designers to create their applications with these line of products.

B&R design BV

TCL2 Bus

CIB Bus

RS232

I/O

Ethernet 10/100

Storage
SD/SDHC/MMC

Optional interfaces

I/O

We have allready create software interfaces for these brands :

Global Caché
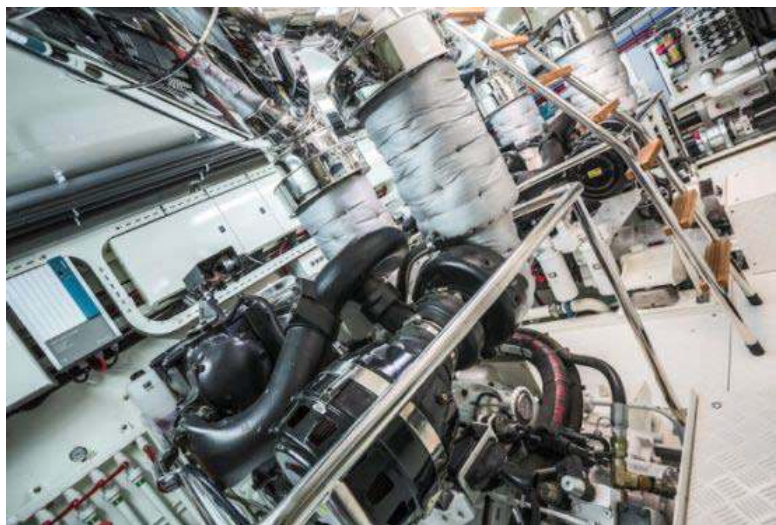
Mulder - Convertible 72 luxury yacht

Taking the successful Mulder 68 Convertible as its template, the Mulder Convertible 72 is the largest convertible yacht the shipyard Mulder have built to date.
Her interior and exterior were designed by Guido de Groot, and Vripack was responsible for the naval architecture. With her unique colours, deluxe appearance and superb finish, this 22-metre masterpiece has an exceptionally elegant character.
The exterior consists of a bicoloured hull with a finish that is continued in the superstructure. The decks are fitted with Estec and various stainless steel accessories, while the aft ship includes a garage for a 3.5-metre tender with jet propulsion and a hydraulic door.

Luxurious appearance

With an aluminium hull and super structure and an interior consisting of light materials, the Mulder Convertible 72 has the lowest possible weight. Installed in a very well-organised engine room with a superior finish, her two Caterpillar C18 engines of 1,018 hp each ensure a maximum speed of 26 knots. The insulated exhausts are finished in high-gloss stainless steel to enhance the luxurious appearance.

No buttons !

The inspiration for the interior of the luxury yacht Domino comes from the owners' request for a modern and contemporary home for themselves and their guests. The team at Guido de Groot Design, working in close cooperation with Mulder Shipyard, created a design concept which provided luxury, comfort and ease of use.
A big issue here where all the small control panels for lights, heating, air-conditioning, control of 32 electric blinds and screens.
The owner was pleased by the solution of Capi2 and Navetica, because control panels would be minimized and all the functionality would be available on 3 iPads and a small 10" panel PC.

So it was a challenge to get all the functions in the application.
Integration with Kabola heating and Webasto climate system where custom build for this application.

All the lights in the different zones are available in scenario's that the owner can create by himself on the iPad.
Also the 32 electrical blinds and screens are grouped and easy to control by the application. Very helpful when the owner wants to go to sleep.

On deck and inside the ship are all the "moving" parts controlled by the application, like the sunscreen, hatch, stairs, tables and TV.

Custom integration with :

CAPI2

Custom integration with :

KABOLA
heating systems

Custom integration with :

(J)ebasto
Marine Comfort
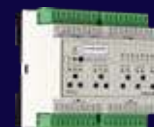
Foxtrot - CP1016

24V PSU

CAN bus Converter

CFox I/O module

UMTS Router

Trucks for Fire brigade "Port of Rotterdam"

In May 2012 we were asked by Cosmo Trucks to create a solution to monitor and control the new command vehicles for the Fire brigade of the "Port of Rotterdam". There was an order for three special DAF trucks, two of them are equipped with all necessary communication en computer equipment and the third is equipped with the necessary equipment for staff meetings between all the involved service departments.

The vehicles will be deployed in emergencies in the big harbor area of "Port of Rotterdam" and provide a mobile nerve center where all services like Fire brigade, Police, Medical Services and Port services are available. This mobile command centre makes it possible to centralize and control all the actions in case of a emergency.

In these vehicles are 42 sensors that are used to monitor the status of the truck. The status of various matters like all moving parts such as retractable antennas, SAT dishes, doors, stairs, storage compartments are monitored by the Foxtrot . Only when all sensors are in a save position again, the truck is "cleared" and ready to go. In addition to this monitoring, the Foxtrot is also used for the control of the Climate System, Victron UPS backup power, Fisher Panda Generator, door access control with IP camera and the diesel tank monitoring.

Mobile Connections

The system in the truck has two mobile connections, the first one is the SMS module with his own SIM card will send urgent messages direct to the people in charge. The SMS connection is used for urgent alarms like 230V power loss, generator failure, fuel level and temperature problems. If they receive a SMS alarm from one of the trucks, there is the possibility to login to the system in the truck. For this we have the second connection which is a UMTS Router in the truck that provides the mobile connection with a Smartphone (iPhone, Samsung, etc). Because the Foxtrot application is WEB based is can be opened on many devices that have a web browser.

The small web based application for the Smartphones makes it is possible to check the status of the truck.Also the status of each sensor unit or contact can be checked this way. This combination of alarm by SMS and login in the application makes service a lot easier and helps to keep these trucks available 24/7.

DAF
COSMO · TRUCKS

The OEM Foxtrot with the SMS module, CAN-Bus / NMEA2000 Converters and the I/O modules on the CIB bus system.

Monitor functions.

In the command centre, on work space 8, there is mounted a 10" panel PC that runs the WEB application of the complete system. When the truck is in action the head of staff can check the climate in the truck, status of al sensors and the Main Power that can be provided by batteries, generator or from the outside 230V net. Also the diesel fuel is monitored because the generator must have enough in case the truck is moving to another location.

To enter the command centre on the platform of the truck there is a code lock to open the door or a button with a buzzer. With a small camera they can see who is at the door and open the door from their workspace.

The truck is powered by 3 phase 380 Volt and have a powerful Victron UPS system to buffer the switching from normal Mains net to generator power. The advanced computer and communication equipment must stay working at any time.

Custom integration with :

victron energy
BLUE POWER

Custom integration with :

KABOLA
heating systems

Foxtrot - CP1016

24V PSU

CAN bus Converter

CFox I/O module

SMS Module

UMTS Router

VERBINDINGS-COMMANDO UNIT
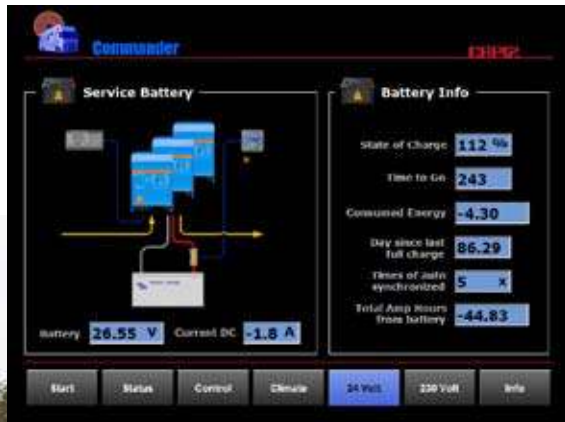
VERBINDINGS-COMMANDO UNIT

BRANDWEER

VC90-1

TECO
Advanced Automation

B & R
DESIGN

Home Automation in midsize appartment

Teco .... Home Automation Products

In addition to the powerful Foxtrot PLCs the company Teco also have a complete line of home automation products. The CFox products work with a two wire CIB bus protocol and can be used both centrally and locally . The operation can be performed with Teco switchgear or by combining it with the known switching equipment as Gira , Merten , etc. loose interfaces

This line of products can be any "Home Automation " project completed . Besides all the "standard " switching and dimming functions , the power is in the extra features of the Foxtrot . Issues such as energy measurement and management , climate controls , camera systems and audiovisual systems can be integrated into the same system .

One of the apartments of the complex " De Hofjes" features a Foxtrot CP1016 as the base for the operation of all lights , heating and the audiovisual system. In the house , the 24 switching groups (lamps and sockets) and 6 dimmer groups made possible with three multiple relay modules and three 2 -channel dimmer modules.

Heating

The heating installation is controlled by measuring the temperature in each room, and depending on the desired temperature the central heating boiler and radiators will turn on or off. The heating program can be adjust in a weekly clockprogram, this will make the heating system more effective and will lower the energie consumption.

Create your own Presets

The bedrooms and living room have recallable presets that can be programmed by the user The preset "Awake" will turn on the audiovisual system to watch the breakfast news, also the lights will switch on depending on the daylight situation. The preset "All Off" will switch off all the lights and audiovisual equipment. Because 30% of the 230V power outlets are controlled by the system, also the individual moodlights can be controlled.

Metering

In the meter, the meter readings of all gas , water and electricity meters digitally scanned and processed in the visualization . This can be used so the consumption of energy is displayed . The IP camera in the stairwell at the front door and the camera at the garage provide an extra bit of security . The application is in the house operated with an iPad which is incorporated in the wall , the residents also operate a web application on their Smartphone to the system both at home and on the go to .

Foxtrot - CP1016

24V PSU

CFox dimmer

CFox I/O module

WiFi Router

iTach AV Control

City archive ...... remote monitoring

Archive Surveillance

A specific application of the Foxtrot PLC is the "archive" application, it provides in the monitoring of many archives of town halls, museums and governments. In many cases these arcives are the cellars and dungeons beneath the buildings, and they must have the right circumstances. Mileage documents are stored in these areas a constant temperature and humidity is very important. Because these areas are not constantly visited by the staff is the Foxtrot PLC excellent guardian of these spaces.

The system measures the temperature and humidity in the various zones. Basements are often vulnerable to the ingress of water, so water sensors are placed on the floor to be able to detect this in time. The basic application can be used for four individual zones but is expanable to more zones. In a departure from the air, or flooding you instantly via SMS alarm message. You can then remotely log in, assess the situation and take measures to prevent annoying and costly damage. The system made a graph of temperature and humidity. This gives you a overview of the temperature and humidity over a period of time.

If an air conditioning system is present, the system can even keep continuous air quality for you. In a departure from the air, the Foxtrot the climate control system and sending a text message to the administrator for confirmation.

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Foxtrot - CP1016
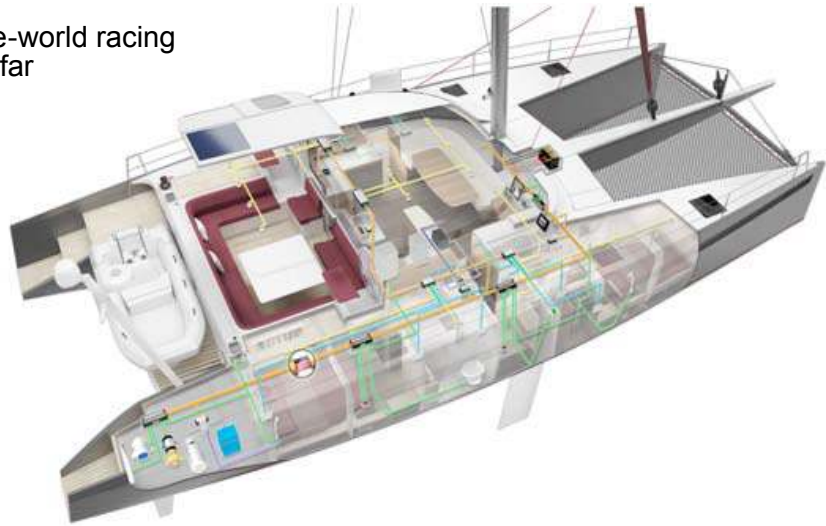
24V PSU

CAN bus Converter

UMTS Router

Navetica in impressive 66ft Catamaran

In cooperation with Capi2 Nederland BV we designed a touch screen control system for a 66ft Gunboat Catamaran. It is fully equipped with a Capi2 Navetica system mainly to control all electrical appliances, LED lights and pumps. The boat will is controlled by a 10.4" Panel PC and a iPad as backup. The yacht is built in South Africa.

Gunboats are engineered to round-the-world racing standards. Racing yachts are pushed far beyond the limits of any cruising boat, yet are a fraction of the weight. All unnecessary weight is engineered out of the structures, but superior safety margins to any cruising boat in production are retained.

The gunboat was launched in Cape Town South Africa in November 2013 and has traveled over the Atlantic Ocean to the Caribbean an North America in the last 6 months.

The complete system was pre-programmed in the Netherlands and build-in by the builders in South Africa. Some fine-tuning of the Web based program is done by remote programming over the internet.Also during the trip over the Atlantic we were able to support the costumer with remote service and fixed some issues on 5000 miles distance.

GUNBOAT

Foxtrot - Commander

24V PSU

WiFi Router

The Capi2 system works with his one communication bus to control all the electrical devices. This bus structure is very effective in such a large ship with two hulls. To control all devices there are several small Capi2 touch screens on different positions. To create one central control point the Capi2 bus system is connected with the Foxtrot "Commander" by a Capi2 bus Monitor. This bidirectional connection makes it possible to control the complete system with the web interface of the "Commander"

*The "Commander" and "Commander XL" are OEM Foxtrot PLC's

Teco Advanced Automation   by B&R design BV The Netherlands

Roelofsen .... Tailor-made transport solutions.

In May 2012, we introduced the "Capi2 Navetica" concept at the company Roelofsen in Raalte - The Netherlands, this company builds quality trucks for the equestrian business and we integrated the "Capi2 Navetica" system in their top truck RR6 line. The luxury RR6 Top Class Line is a horse truck for the equestrian sportsman who requires top quality without compromising on living comfort and convenience.

The "Capi2 Navetica" concept is the combination of the Capi2 bus system (12/24 Volt automation) and a OEM Teco PLC in this concept called the "Commander". By using this combination almost all the systems in these trucks are centrally controlled by a web based application. This provides a better overview of the entire system and limits the number of separate control panels of all the different brand and systems that in the normal installations should been used. From the start in May 2012 we have already installed 6 trucks with this concept and it is well received by both customers and the mechanics at Roelofsen.

The Commander serves the following systems:

- Capi2 System (lighting, screens, pumps, etc)
- Victron Quadro system (24-230 V Converter)
- Onan Generator set
- Multimedia system (Samsung / Bose)
- Several measurements tank and pumps.
- Kabola Heating system.

These systems are operated with fixed Panel PC and / or with a Smartphone or Tablet (Apple, Samsung, etc). By adding a UMTS router and a SMS module, the data can be read remotely read and alarms are sent to the owner by a SMS message.
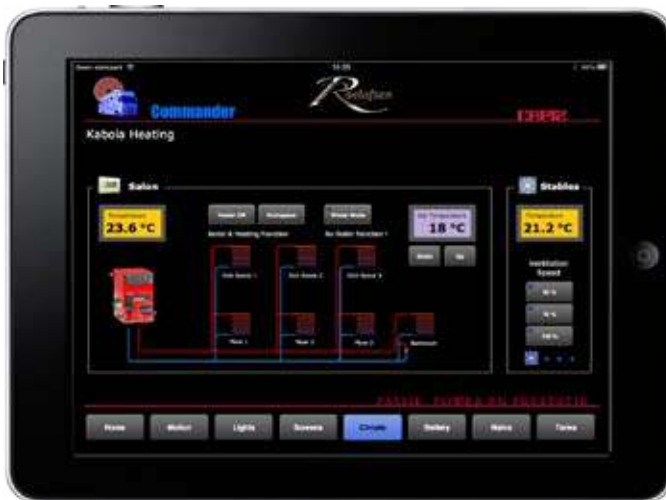
Custom integration with :

Custom integration with :

Custom integration with :

Foxtrot - CP1016

24V PSU

CAN bus Converter

UMTS Router
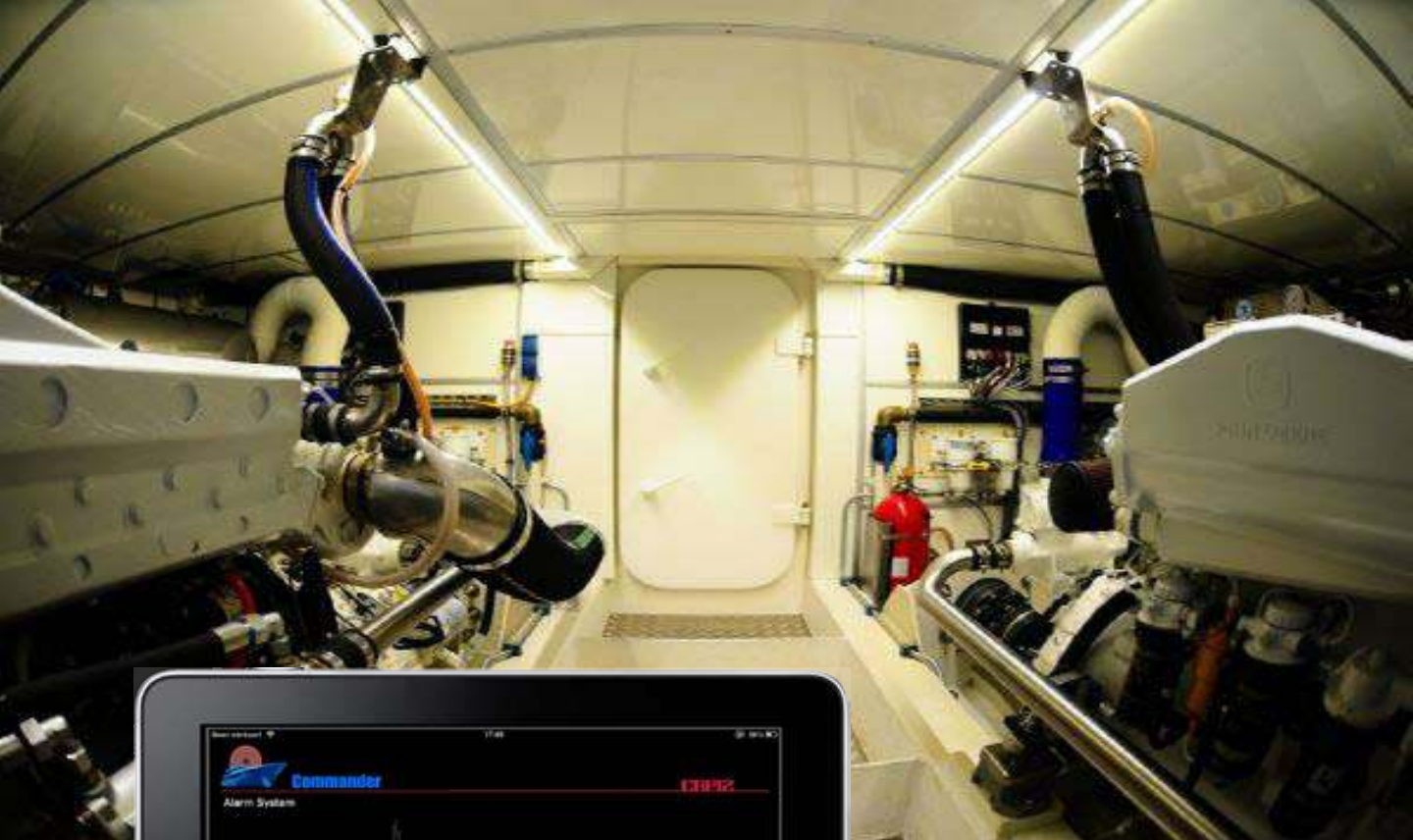
NED70 … Hiswa Boat of the Year 2013

IThis 21.45 m luxury yacht NED70 is designed by the Dutch company Vripack. The NED 70 provides three lovely cabins. There is the owner's cabin, which can be found in the front of the vessel, with two guest cabins, located in the back. The guest cabins are spacious, each with its own bathroom with a separated toilet as well as shower compartment. The front part of this splendid vessel offers the main saloon, along with the wheelhouse.

The control of all the low voltage users (LED lights, pumps, etc) is controlled by the Capi2 bus system in combination with Navetica" setup. The hart of system is the Teco Foxtrot PLC in this concept called the "Commander" .
By using this combination all the LED lights on board can be controlled with a iPad. Also the levels of all the tanks and the main power and battery power (Victron) are showed on the pages of the iPad (tablet) application.

This spectacular ship has won the Dutch "Boat of the Year" award of 2013.
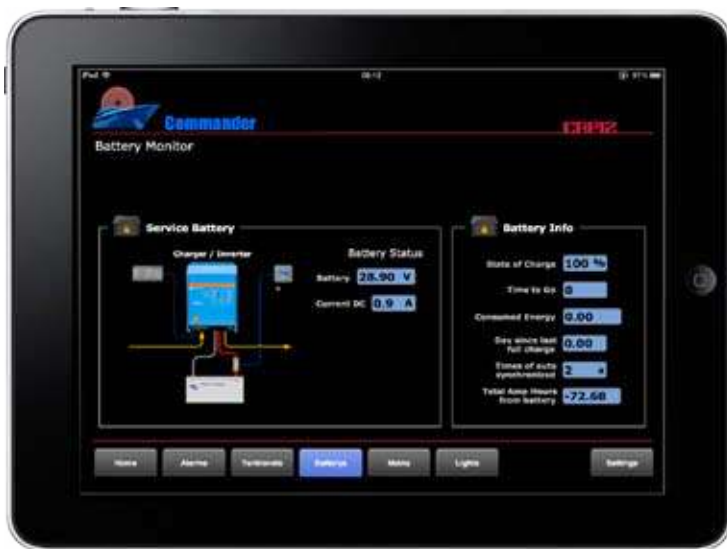
Custom integration with :

CBP12

Custom integration with :

VDO
Tank sensors

Custom integration with :

victron energy
B L U E   P O W E R

Foxtrot - CP1016

24V PSU

CAN bus Converter

UMTS Router

Web based Camera Control System

The web-based control solution in the Foxtrot PLC's is proven as a stable platform to control complex audio and video systems. The advantage of the web based situation is that it can be used on many devices like Smartphones and Tablets without the need of a expensive remote. This way of control in combination with all the controlports on the Foxtrot makes it a good solution for these kind of systems. The TCP/IP and RS232 ports of the Foxtrot can be used to control LED TV's, PTZ Camera's, Audio and Videomixers, etc. To control Infrared devices the Global Cache iTach controllers are a good solution, they are connected by a TCP/IP port and can send infrared from 3 different outputs.

A good example for these kind of applications are the video installations in Churches, these systems have devices like PTZ HD camera's, HD Videomixers, LED screens and Beamers. These installations must have a "simple" control system because they are controlled by volunteers of the church.

To make this possible we have made a special application in the Foxtrot CP1016 to run these systems. All the songs, Bible verses, presentations and "live" camera images are displayed on several LED displays and/or beamers in the church itself, and also send to the internet. Technically the computers and camera's are connected to a HD videomixer and after the processing the image is send to the displays and other devices.

The application have a master page to power on/off all devices separately or with one button using the internal macro function. To control the camera's and videomixer we have two options, "manual control" and "half automation control". On both pages the necessary buttons are on the page to control the system, but in the half automation option, the control of the video mixer is done automatically. In that case only the next camera preset have to be selected and a macro function will do the rest. In the "manual control" page the control of camera's and video mixer must be done manually. The web based application runs on a iPad or iPad mini and can be used by volunteers from any position in the church.
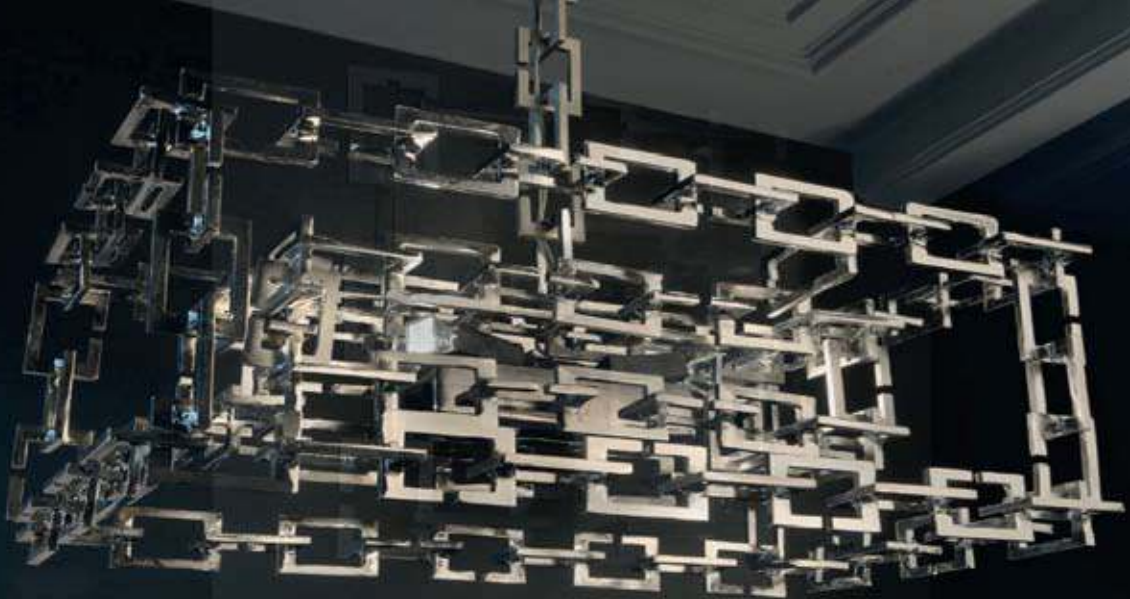

Foxtrot - CP1016

WiFi Router

iTach AV Control

Fuljhari Lighting .... Design Studio

The light creations of Fuljhari Lighting are exhibited in a beautiful historic building, on the Brink in Deventer. From this inspiring place Fuljhari Lighting designs, manufactures, and sells her exclusive light creations. Each design has a unique character and a distinct twist. Client's wishes are translated to tailormade light creations that ensure that "Struck by Lighting' feeling.

Each Fuljhari creation is unique. Creations are developed according to our vision leading to innovative designs.
These involve experimentation and material processing, providing a personal signature.
This uniqueness we guarantee by every Fuljhari design due to a signed certificate of authenticity.

In this case Fuljhari Lighting asked us for a control system for the lights, audio visual setup and a CCTV camera for a overview in the design studio.
For this system we used a CP-1016 with 3 dimmer modules and some RFox switchers. The RFox parts work on wireless RF and must be used because there was no cabeling possible with CFox.
At the entrance is a four buttons panel that have three presets and a master OFF switch.
Because the system is connected to the internet it is possible to control the system with a Smartphone.

Active Shopping

During a visit at the Fuljhari Light-
ing design studio you can experi-
ment with the light creations by
controlling any light creations on
a touch screen. For this interac-
tive customer service there is a
special iPad on a standard.

All the pages are stored in the
Foxtrot, they start on the homep-
age with information of the
Fulhari Design Studio.
The next step is the page where
the visitor can choose one of the
design lines.
Each design has a page with
information about the lights and
how it is created. On the same
page are also buttons to dim or
switch the fixtures of this design.
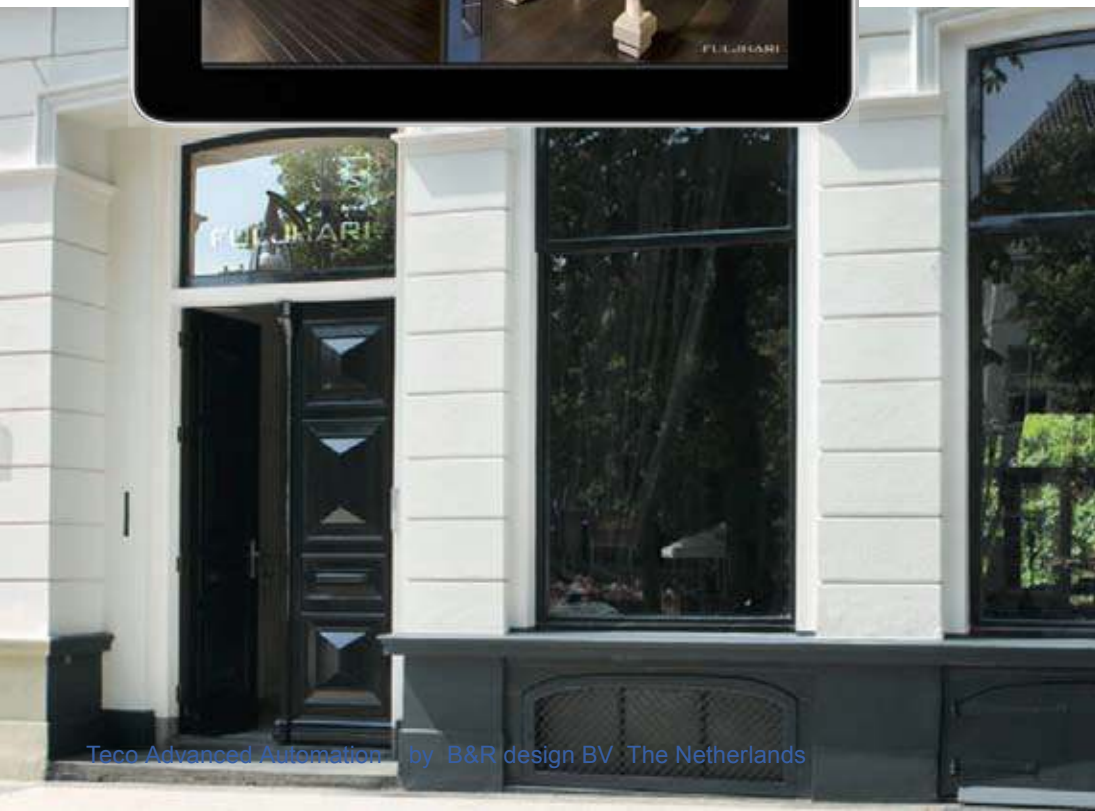Creative lights in a creative way
of shopping.

Rodman 69 ... Floating laboratory of the sea

The Belgium government orders a new polyvalent measuring vessel for the Scheldt and the coastal waters of the North Sea. This vessel will be a floating laboratory that will collect all kind of data for water quality and hydrographic information. The order went to the Spanish shipyard Rodman Poly Ships, this builder had also delivered the police boats 'SPN 14' and 'SPN 15' for the Belgium Coastguard.

The multifunctional catamaran is almost 23 meters long and 6.5 meters wide and has a lot of technical installations on board. To control al the electronics on board the shipyard decide to use the Capi2 bus system for all the 24Volt systems en lights on board. The Navetica concept was introduced to control all these functions and monitor several systems on board.
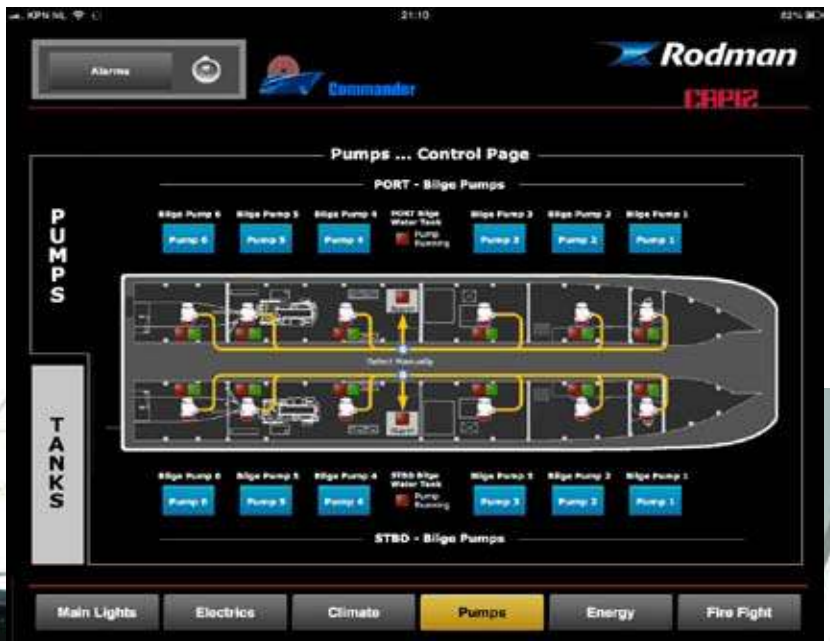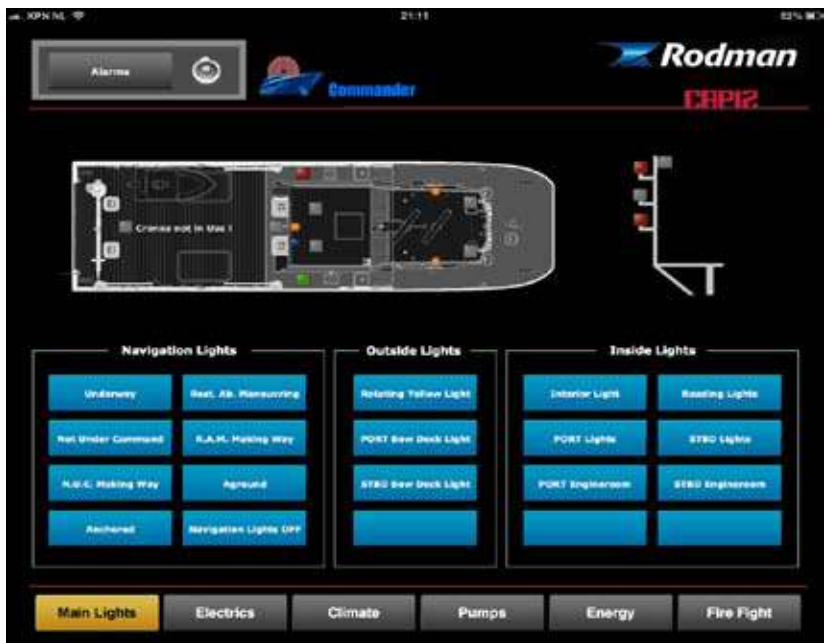

For these functions we introduced our new OEM Foxtrot called "Commander XL" a special Foxtrot with extra memory capacity.

In the first week of June 2013 the new hydrographic vessel was boarded in Vigo aboard the Coaster RICKMERS CHENNAI to leave for her new home in Belgium.
The expectations are that the vessel will be fully operational by the end of the summer.

The catamaran shape of the Rodman 69 creates two hulls and the main deck. So there are 3 parts with a lot of electronics that are controlled by the Capi2 bus system. On the bridge we have a one central control point where the Capi2 bus system is connected with the Foxtrot "Commander XL" by a Capi2 bus Monitor. This bidirectional connection makes it possible to control the complete system with the web interface of the "Commander XL".
The electronics of this ship are monitored and controlled by 10 WebPages on a 19" panel PC.
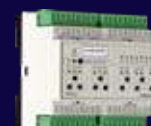
*The "Commander" and "Commander XL" are OEM Foxtrot PLC's

B&R DESIGN

Foxtrot - CP1016

24V PSU

CAN bus Converter

CFox I/O module

SMS Module

UMTS Router

TECO Advanced Automation