MOTRONICA®

Connectivity
and control systems

Solutions to meet your needs

Logic in motion

Presentation

Our work, your benefits

Motronica is a high-tech company ranking among the most advanced and innovative companies in the world of control systems design and implementation and telematics applications for mobile machines. Its scope ranges from the industrial, to the agricultural and to the nautical sectors.

Founded in 2001 in Italy, Motronica operates on the international market, teaming up with partners who are leaders in their respective field. It can provide a variety of high-tech solutions and components such as: electronic controllers, displays, sensors, communication and data transmission systems, embedded software solutions and software development tools for machine producers (OEM), sub-system producers and system integrators.

Moreover, Motronica provides support for the design and implementation of control and connectivity systems, profiting from the extensive expertise acquired in its past on several and diversified automation projects.

The value of the solutions is guaranteed by the use of tools and development processes which stem directly from avionics and automotive. Motronica's key talent consist in supplying components and solutions for the development of applications in highly demanding and mission-critical environments, with a guaranteed quality and reliability. Motronica is at the forefront in both local and remote cloud-based connections, and can easily integrate and manage information to and from the customers' products.

Solutions and services

The right partner for your business

Thanks to more than 15 years of experience in the field of automation on industrial and agricultural vehicles and in the nautical sector, Motronica can offer specific expertise and high-value solutions to its customers' products.

Control solutions

- **Management and control of machine movements and functions, engines and transmission systems, driving systems, safety systems**
- **Remote monitoring and data collection (Internet of Things)**
- **Diagnostics and troubleshooting, maintenance management**
- **Localization, tracking and geofencing**
- **Access management**

Services

- **Design, development, testing and validation of applications for system control and connectivity**
- **Sale and service on all Motronica-provided hardware and software systems**

Customers wishing to manage the development of their own control systems internally, can access the following Motronica services:

- **Assistance in components selection and/or technical solutions**
- **Assistance in developing applications and/or technical solutions**
- **Assistance in interpreting and applying the relevant to-date regulations and the Machine Directive**
- **Training on supplied products/systems**
- **Implementation on-demand of specific features in the SW development tools produced by Motronica**

Applications on several segments

Better control, more efficiency

Industrial

The main applications by Motronica have been developed for the following machines:

- **Mobile Harbour Cranes**
- **Forklifts**
- **Reach Stackers, Full and Empty Container Handlers, Straddle Carriers**
- **Side Loaders**
- **Truck/Trailer Mounted Booms and Boom Lifts**
- **Telehandlers**
- **Terminal Tractors**
- **Drilling Machines**
- **Waste Disposal Machines**
- **Machines for bitumen/tar/concrete**
- **Fire Fighting Machines**

In the industrial sector the typical applications of a Motronica control system are:

- **Anti-tipping Systems**
- **Tool and machine functions management**
- **Energy Saving Management (ECO)**
- **Traction control (mechanical, electric, hydrostatic)**
- **Planned maintenance**
- **Engine (Tier III, Tier IV final)**
- **Anti-collision systems**
- **Geofencing**
- **Autosteering**
- **Container Tracking**
- **Fleet Management, Telematics**
- **Diagnostics and Troubleshooting**
- **Automation**

Agriculture

In the agricultural sector, Motronica mainly collaborates with tractors, tools, accessories and agricultural services producers.

Outstanding control applications developed by Motronica:

- **Tools for agricultural machines and tractors**
- **Energy Saving (ECO)**
- **Traction Control (mechanical, electric, hydrostatic)**
- **Planned maintenance**
- **Engine (Tier III, Tier IV final)**
- **Movement automation**
- **Positioning Systems (DGPS, GLONASS, etc)**
- **Fleet Management, Telematics**
- **Diagnostics and Troubleshooting**
- **Anti-collision Systems**
- **Geofencing**

Marine

Motronica operates both on motorboats and sailboats. On motorboats, systems developed by Motronica are:

- **Monitoring (tank levels, engine data, fuel consumption…)**
- **Trim and flaps control, bilge pumps**
- **Lights control**
- **Camera control**
- **Integration with other systems (GPS, autopilot, levers etc)**
- **Control and automation logics**
- **Boat management and remote data**

On sailboats, systems developed by Motronica are mainly used as aids to navigation:

- **Sails management**
- **Integration with the GPS and autopilot system**
- **Boat management and remote data**

Products

A combination of power and functionality

Displays

Motronica offers a complete range of displays for mobile machines and boats, ranging from a simple and low-cost monochromatic 3.8" display to the full-blown solution on a colour 12" display.

OPUS A3, OPUS A6,OPUS A8 display range, STANDARD or ECO versions, BASIC or FULL configurations have LCD of 4.3",7" and 12".

All OPUS displays can be equipped with touchscreens and video inputs. The *M-Vision* software development tool has been specifically designed for our range of displays, allowing easy access to advanced functions. Graphical user interfaces developed with M-Vision can be easily customized, ensuring the maximum flexibility and scalability.

Electronic control units

Motronica offers a wide range of reliable controllers and slave modules. With more than 20 years of proven reliability and more than 500.000 installations, the STW ESX product line includes a vast variety of programmable units and slave modules, with great hardware configuration flexibility and many available IO combinations.

Besides being compliant with the European safety standard, the ESX family is compliant with agricultural and industrial standards, and includes the TÜV certification for development of safety applications (on selected models). Applications can be developed using the C or CoDeSys languages (IEC61131-3). Motronica can supply customers with the toolchain needed for development, and a wide range of software libraries.

Devices for connectivity

The connectivity module ESX-TC3G is a guarantee of high-quality standard.

Linux open source operating system is the ideal environment to create complex applications quickly and easily, integrating the WLAN/2G/3G/CDMA module, GPS/GLONASS module, Bluetooth module and antenna.

Sensors

Motronica can provide its customers with a wide range of sensors to measure pressure, temperature, position, force, inclination and angular speed. The measured value is available both as an analogue value and on a CAN bus message.

SW development tools

M-Vision is a suite for control software development supporting:

- **Graphical user interface development (OPUS displays)**
- **CAN Network configuration**
- **Management of planned maintenance, machine parameters, alarms and counters**
- **Widget libraries specific to applications in industrial, agricultural or nautical sectors**

Even users with no specific programming knowledge can easily build a captivating graphical interface using *M-Vision*, and quickly connect widgets to data on the CAN bus.

Our development tools enables the implementation of user interfaces on a wide range of supported devices.

MOTRONICA

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