

# DANIELI AUTOMATION

Know-how in process control  
and turnkey electrical systems  
for metals industry

DANIELI AUTOMATION





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## ABOUT US



Danieli Automation is the Company, within the Danieli Group, responsible for the transfer of technological know-how from other Danieli technological divisions to end users, supplying the interface between plant process and operator. Our mission is to provide process automation and control systems for metals industry covering the wide spectrum of Danieli Technology, ranging from iron ore to long and flat products. Software algorithm models, computerized quality and production control systems

are developed in house and are the means to transfer Danieli process know-how to final users, thanks to the synergistic relationship with Danieli and the technological background shared with the parent Company. This co-operation with the mechanical designers has lead to optimized and standardized solutions, resulting in best performances and quicker plant start-up. The Motors and Drives department designs and selects the best solutions for motors and their respective drives dependant upon the technical

requirements. Furthermore, we design and supply complete electrical distribution systems, up to turnkey solutions for steel industry, with installation engineering based on extensive experience and on the required standards. Additionally we produce special instruments and sensors, designed and engineered to meet the demand from steel producers for sophisticated controls, quality certification, cost optimisation and quick adaptation to the latest systems.





## PRODUCTS



Danieli Automation provides electrical and automation equipments, as well as engineering, for the whole range of Danieli products. Automation and electrical systems are designed and quality tested at Danieli Automation's production centers.

Our systems are designed based on the 3Q concept: Quality, Quantity and Quickness. These are our main targets which are focused on satisfying our customers needs and requirements.

### TECHNOLOGICAL AREAS

- › Blast furnaces
- › Direct reduction and palletizing plants
- › Meltshops, scrap yard and raw material handling
- › Primary and secondary metallurgy facilities
- › Billet/bloom and beam blanks casters
- › Slab and thin slab casters
- › Slab/billet/bloom reheating furnaces
- › Hot strip mills
- › Steckel mills
- › Plate mills
- › Pipe mills
- › Long product rolling mills for bars, wire rod and sections
- › Cold mills: 6-high, 4-high, temper and tandem mills
- › Processing lines: galvanizing, pickling, coating and inspection lines
- › Non-ferrous hot/cold and foil mills
- › Complete minimills



## BUSINESS UNITS



Today Danieli Automation can supply complete electrical and automation equipment for all types and sizes of plants in the steel industry, on a complete turnkey basis while keeping software development and know-how in-house. In order to offer an expert and even more focused service to customers, Danieli Automation established different Business units, one for each specific

category of products offered. The Business units are:

- > **Steelmaking and Casters**
- > **Power Systems**
- > **Long Products**
- > **Flat Products**
- > **Instruments and Robotics**
- > **Customer Assistance**

The division into business units aims at further increasing specialization and to target more precisely and accurately the

specific technological needs of each production line. This structure will furthermore improve our focus on innovation, since engineers are dedicated to the analysis of the technological solutions for each particular product or business area.





### STEELMAKING & CASTERS

- > Iron ore reduction
- > Steelmaking
- > Secondary metallurgy
- > Continuous casting
- > Thick & tin slab casting



### POWER SYSTEMS

- > Power distribution
- > Analysis and furnaces
- > Drive systems
- > Induction reheating
- > Installation engineering



### LONG PRODUCTS

- > Seamless tube
- > Hot rolling
- > Cold finishing



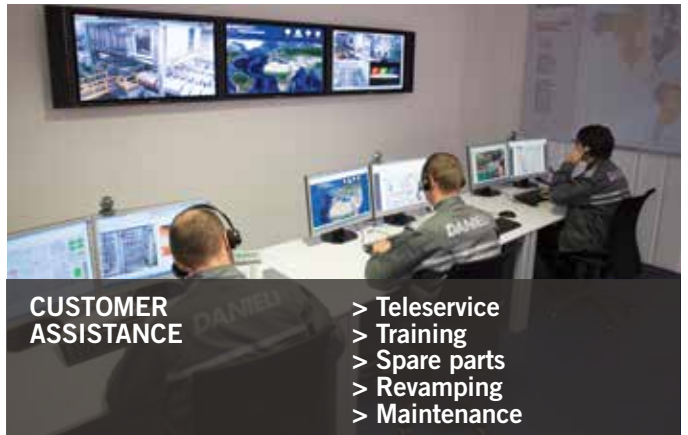
### FLAT PRODUCTS

- > Hot strip & plate rolling
- > Cold strip rolling
- > Strip processing line



### INSTRUMENTS & ROBOTICS

- > Sensors
- > Q-Metal
- > Q-Roll long products
- > Q-Roll flat products
- > Robotics



### CUSTOMER ASSISTANCE

- > Teleservice
- > Training
- > Spare parts
- > Revamping
- > Maintenance

## 3Q TECHNOLOGY

Our systems are designed based on the 3Q concept: Quality, Quantity and Quickness. These are our main targets which are focused on satisfying our customers needs and requirements



### QUALITY

**Excellence in product quality certification**

Quality of final production means competitiveness, access to new markets, reputation and improved margins. One of the tasks of our automation systems is to assist our customers in producing quality, ensuring continuous monitoring and providing quality certification of the final product. High quality control systems with a constant innovation of process technologies guarantees top quality production in high-production steelmaking plants.

### QUANTITY

**High Productivity by fully automatic operations**

Our system designs guarantee high availability and efficiency, thanks to advanced solutions for specific process aspects as well as a complete line of technological packages including integrated automation equipment. Fully automatic and repetitive operations increase productivity levels and this is possible due to automation system architecture, with client-server solutions, redundant operator workstations and dedicated monitoring tools.

### QUICKNESS

**Quick response to market demand**

Product changes must be quick. This is obtained by means of flexible control systems and process controls including the required setups for the complete production range. Quick production steps are obtained thanks to predefined and fully automatic sequences. Reaction to unexpected situations must also be quick. Dedicated technological packages are applied for prompt system reaction to unusual circumstances.





## CUSTOMER ASSISTANCE



Customer Assistance Business Unit is the department within Danieli Automation dedicated to worldwide support for all our customers, providing assistance with automation systems and electrical parts for steel making plants. This structure provides specialized support for your investment, assisted by our extensive know-how in process control. It ensures you have constantly updated hardware with simple access to technical expertise application tools giving you competitive advantages.

A specialized team is at customer disposal for any professional advice regarding preventive maintenance and revamping, providing quick and effective assistance and service to the customer via Web or by dedicated technical specialist directly at Customer's plant. Call centers and service centers are located worldwide, with remote monitoring and diagnostic troubleshooting, for a better and closer service to Customer.

- > **TELESERVICE**
- > **TRAINING**
- > **SPARE PARTS**
- > **REVAMPING**
- > **MAINTENANCE 4.0**
- > **ELECTRICAL MOTORS MAINTENANCE**





### TELESERVICE

With just a web browser and an internet connection, Danieli Automation Remote Support services let to establish an immediate connection between DA and Customer computers providing remote technical or sales assistance



### TRAINING

In-depth and personalized training courses are arranged at our HQ in Italy (also on-site if needed). Moreover, Danieli Automation implemented E-learning webplatform, a training service for Level 1 and 2 process systems. Our training programs are single-user oriented.



### SPARE PARTS

State-of-the-art products and services to assist our customers with appropriate spare parts. E-spares is a Danieli Automation orders implementation system via web, by which customers can order spare parts directly via internet.



### REVAMPING

Danieli Automation Customer Service offers the possibility of changing any type of old and outdated equipments with the most recent and revised supplies for hardware and software.



### MAINTENANCE 4.0

A data drive technology for continuous maintenance improvement.

- > Predictive maintenance to detect in advance any fault symptoms
- > Preventive maintenance to plan cost-effective strategies
- > TCO optimization for performance, energy and maintenance costs



### ELECTRICAL MOTORS MAINTENANCE

Daco Ltd, a Danieli Automation's owned subsidiary located in Thailand, offers complete electric motor repair, refurbish, rewind and rebuild services, with complete testing procedures for total quality control

## RESEARCH & DEVELOPMENT



Danieli Automation is continuously investing in research and development, in order to be always one step ahead in technology, looking at new ideas and new products to satisfy the demands of the market.

We have registered more than 100 patents and relative technologies adopted include:

- > Laser
- > Optical
- > Electromagnetic fields
- > Infrared
- > X-ray

Danieli Automation developed anthropomorphic robots

to perform fully automatic operations in dangerous areas, such as close proximity to casting platforms or electric arc furnaces as well as galvanising lines. Sophisticated metallurgical models, developed also with the contribution of specialized research centres and universities have been developed in order to be able to predict the quality of the final product during rolling. Co-operation with main electrical and automation suppliers is constant with an aim to provide new solutions and cost effective systems to our customers.



**Digimet**

#### **DIGIMET**

There are no known techniques, beyond simulation, that will identify the behavior of a physical phenomenon even before it manifests itself. For this reason Danieli, and in particular Danieli Automation, is proceeding to develop a technology that, assisted and integrated by a modern automation system, is able to prevent and/or correct deviations from the desired process profile. What Danieli wants to do is to move from a reactive to a proactive design, thanks to the complete

digitalization of the processes. The consequence for Danieli customers will be a drastic drop in transformation costs while maintaining the same level of productivity, increasing the product level quality and reducing the consumption of scarce and expensive resources. Collaborative robots and mobile equipment devices, supporting the operators' usual functions, will help them to avoid mistakes, increasing the product quality level and workplace safety. Additionally, the role of the steelmaking- dedicated sensors

will become more and more important due to the intensive application of IoT technology (Internet of Things) and the added value coming from the interdisciplinary analysis based on BI technology (Business Intelligence). To achieve all this, Danieli Automation created **DIGIMET**, a working group based on experiences in process control and product technology. Under the same leadership, it will have the aim to identify and develop product/process that can enjoy the benefits of "Predictivity".



## WORLDWIDE PRESENCE

Our international facilities, located in the regions where business opportunities are most abundant, are integrated with the rest of the group and coordinated by Italian headquarters to reinforce the Danieli group's technical and commercial strategies.

They consist of Sales and Service units, together with local operating units, fully autonomous, in order to offer an expert and focused service to customers.

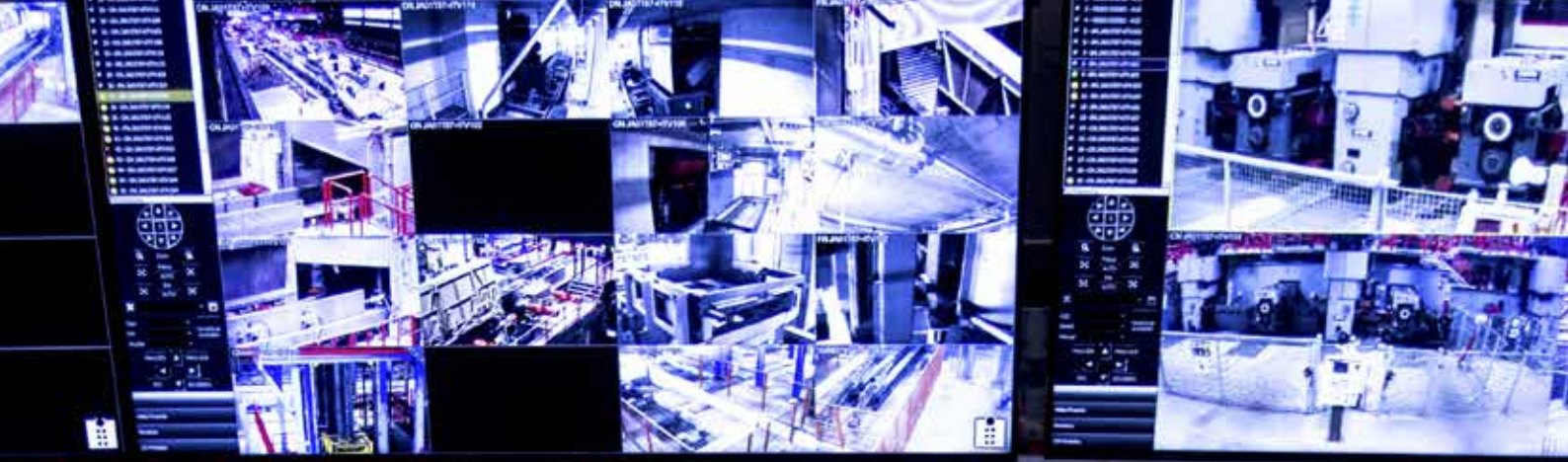
A complete network of production sites, sales, and service offices, established in order to meet international markets' needs.

-  HEADQUARTERS
-  PRODUCTION, SALES & SERVICE
-  SALES & SERVICE











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