Excellence. Your Industrial Partner in **Motion** and **Control**

DRIVES | CNC | SYSTEMS | ENERGY

100%
Italian Technology
Made in Italy

BDF DIGITAL

50 years of technological excellence in industrial automation and numerical control

1970
ECS (Electronic Control System) is founded, one of the first Italian manufacturers of numerical controls (CNC) for machine tools.

1971
Model 2001*

1976-77
Models
2001-02*

1976
TDE Automazione is born

1986
The BDF group Boscato & Dalla Fontana SpA founded in 1906, joins the team corporate.

1987
First control panel for machines of glass

1991
Primo inverter a controllo analogico

1992
MACNO is born, specialized in the automation of manufacturing processes of stabilizers for plastic

1992
Models
2401-2402

1995
First converter regenerative for recovery energy (AFE, FFE)

1997
TDE incorporates **MACNO** and **TDE MACNO** is born from the merger

2000
Tokamak accelerator inspection system design (client ENEA)

First ISO 9002 certification

2001
Series 800
(1801, 1802, 4801,4802)

2001
First
plasma cutting
Model 1805 *

2002
MISE (Ministry of Economic Development) authorizes registration in the Register of Research Laboratories

Control system for injection molding machines (PLC) VX 5000

2004
Digital OPD inverter
(first generation)

2008
Series
901-902

2008
Inverter **OPDE digitale**
(seconda generazione)

2011
Inverter certification
photovoltaic sector
CEI 016 / CEI 021

2013
First folding machine
Model 904 *

2015
First laser cutting
CNC Model 915 *

2016
TDE MACNO
acquires ECS

2017
From the merger of ECS and TDE MACNO
BDF Digital SpA was born, active in the three divisions of Automation, Systems and Numerical Control.

2020
OPDEplus digital inverter
(third generation)

UL and cUL certification (USA and Canada)
UL panel certification

2021
With the synergy of the two divisions, ECS and TDE Macno, BDF Digital is ready to launch on the market new solutions for automation industry and for the world of CNC

* - 01: milling
* - 02: turning
* -04: sheet metal bending
* - 05: plasma cutting
* - 15: laser cutting

+50.000
CNC INSTALLED

+40.000
DRIVES
FROM 2017 TO TODAY

+30.000
ACTIVE CUSTOMERS
IN AUTOMATION
AND CNC



Who we are

BDF Digital is a 100% Italian company, with an ancient heart and old tradition. Over 50 years of innovation and research in the world of industrial automation with worldwide recognized brands: **TDE Macno and ECS.**

Today, thanks to the merger of the two Italian companies TDE Macno and ECS, BDF Digital can offer to the market tailor-made products, with attention to customer needs.

Innovation and technology, to facilitate production processes and to improve the lives of people, businesses and society.

Innovation and valued engineering to give value to the companies, people and the environment. These are BDF Digital's priorities. These are the priority of BDF Digital.

"We believe that, thanks to digital technologies, we can give intelligence and connectivity to our products, revolutionize our processes and services, change and radically transform our industry manufacturing and propose ourselves as a "solution partner", nationally and internationally ".

Mission

We are a highly professional partner who recognizes and faces the challenges of a constantly changing society

We want to:

- create high quality products made in Italy, paying attention to costs and times
- analyze market trends to respond promptly and effectively to needs and requests
- recognize the customer's needs
- create a healthy and stimulating work environment

Vision

We invest in the continuous improvement of our solutions and constantly renew our know-how

Our goal:

- to be a benchmark in industrial automation for quality, flexibility and reliability
- build customer loyalty thanks to products quality and services
- provide Tailor-made products to optimize performance
- reduce delivery times

Values

BDF Digital provides reliable and cutting-edge solutions to give value to companies

We are engaged every day in:

- passionate in the things we do
- build a better work environment
- improve the quality and value of our products
- we respect the environment to take care of ourselves and all resources



Engineering

All our know-how available

We believe in team and in cohesion. The strong collaboration between technical and sales and service teams becomes the reference for the R&D on market trends.

Our valued engineering allows us to develop innovative software, hardware and firmware solution trying to anticipate the customer's needs: our goal is to supply the best available technology.

Bdf Digital takes care of its customers in all phases of project development: from the idea, up to the commissioning.



Our approach

Project focused on strategic research. Our goal: to take care of all the details for cutting-edge projects

Our approach is reach the maximum satisfaction of our customers; whether it is standard or a customized product, we are always available to develop the best solution respecting the needs and inquiry of the customer.

Professionals always available, from design to commissioning
In order to satisfy the technical performances and optimize costs and times.

Maximum flexibility
The flexibility of our products and solutions, allows us to use them on any system, with perfect machine automation and maximum precision in numerical control.

Turn key customized solutions
On demand, we provide complete packages designed on the concrete needs of the customer, respecting costs and deadlines and guaranteeing the perfect commissioning.

Guarantee and quality
Always updated and prepared on mandatory standards, our Quality Team provides full support to the customer and carefully follows the feasibility studies of the project.

Projects e partnership

Synergy and partnership: our technological expertise at the service of our Industrial Partners for successful results.

We provide our know-how to create long term collaborations and value added, aware of the importance of being at the side of important industrial companies for customized and avantgarde solutions.

The success of our Partners is our success



Sales and after sales services

BDF Digital supports the customer in every step, from sales to after-sales. Experienced and competent professionals are available to the customers for the analysis of requests, commissioning and training activities.

Technical service

Alongside the customer for all needs

We have experienced professionals that follow the Customers and their needs by offering a complete assistance service.

We guarantee assistance both in Italy and abroad, with the utmost timing and efficiency.

Training

Autonomy and continuous updating

Our customer service and training ensure a successful and long-time relationship.

We organize customized training courses to increase end users autonomy on our products and solutions.

Market & Applications

Automation

METAL, PAPER, PLASTIC, GLASS, MARBLE, TEXTILE, TEST BENCHES, HVAC&R, PACKAGING, CABLEWAY, WOOD, ROBOTIC

Numerical control

TURNING, MILLING, CUTTING, BENDING

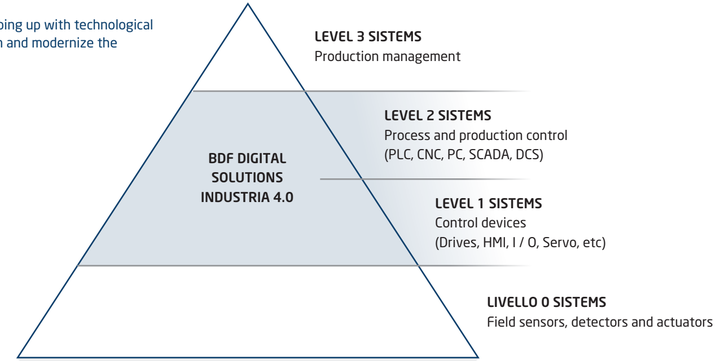
Energy

SOLAR, WIND, HYDRO, STORAGE

In the hart of the process

At the service of technology

Technology and processes: in the industrial field, keeping up with technological progress is essential to constantly monitor production and modernize the automation phases.



Our products and technological solutions are at the center of the process. The management of all the most complex and delicate operations deserve constant attention to detail, for the mutual success of customer and supplier.



OPDEplus

Uniqueness and technological innovation

The new series of servo drives **OPDEPlus** stand out from the market for the uniqueness and technological innovation of the adopted solutions.

We offer a full range of servo drives with advanced control technology, leader in the automation sector and simple in commissioning.

The drives are designed to provide precise control, with smaller footprint and higher performance. They are flexible and versatile, suitable for any application and have an excellent price-performance-quality ratio.

Our drives support major field buses, such as **Ethernet/IP, EtherCAT, Profinet, Modbus e Modbus RTU & TCP/IP, Profibus, CanOpen.**

The **integrated technology** of these servo drives allows optimal control of **three-phase asynchronous motors** (IM), as well as **Permanent Magnet Synchronous Servo Motors** (**PMSM**) taking advantage of any eventual anisotropy, besides of **synchronous reluctance motors** (**SynRM**).

Furthermore, the control of **special motors at very high rotational speed** and **linear motors** are included in the basic package.

Integrated PLC
Control algorithms specifically designed to increase energy efficiency in latest generation motors
High resolution analogue input and **Simulated Encoder (optional card)** aimed to retrofit market

Lots of rotary type feedbacks (8ST/MT) and linear, both digital and analog (such as EnDat 01/02/21/22, Incremental/Absolute SinCos, Resolver, Tamagawa, BissB/C, Hiperface, Hiperface DSL, Incremental, Incremental+Hall).

The OPDE Plus series is designed to manage all types of motors. BDF Digital is able to provide the complete package.

Regenerative Units

The OPDEplus drives can be used as regenerative unit in industrial automation such as AC/DC rectifier and bidirectional power exchange according to needs.
This technology allows energy to be recovered in the network rather than being dissipated on passive loads.

FFE

Fundamental Front End

- AC/DC regenerative unit
- Energy recovery
- Replace passive loads

Benefits
- Increase the rated current
- Reduced main reactance
- Absence of LC filter (cost and space saving)
- Voltage compensation
- Power factor correction

AFE

Active Front End

- AC / DC regenerative unit
- Energy recovery
- Current THD less than 3%
- Available with or without isolation transformer
- Suitable for different network frequencies

Energy Technology

We respond to the needs of the energy sector through a range of technologies and reliable solutions for the hydroelectric market, wind power, accumulation on batteries and photovoltaic, investing in innovative technologies for the renewable sources of tomorrow.

AFEplus Energy

Active Front End

- 4-quadrants operation with the possibility of energy recovery in the network (elimination of dissipative braking systems with reduction of overall dimensions)
- Control of the DC bus voltage at a settable value: this allows an optimal sizing of the motors and allows compensation for any fluctuations in the mains voltage
- Exchange with the active power network (no energy exchange of reactive components).
- Sinusoidal line currents (low harmonic content)
- Possibility of compensating inductive or capacitive loads

OPDEplus DC/DC

OPDEplus DC/DC is a bidirectional DC/DC converter able to regulate, starting from a continuous input voltage, the current towards a battery in both directions.

Available in various sizes, the new OPDEplus DC-DC is able to control currents between 3A and 460A or higher through the Stack solutions. Input Voltage Range: 30 VDC - 1050 VDC.

Serie CNC900S

The advanced numerical control

Thanks to its experience in numerical control, BDF Digital - in its ECS CNC division - presents CNC900S, the series that guarantees high performance in both software and hardware platforms.

The versatile and highly performing architecture that characterizes the CNC900S range, allows it to be used in many technological sectors: milling, turning, waterjet cutting, plasma cutting, oxy-fuel cutting, 2D/3D laser cutting and sheet metal bending.

The hardware structure is modular and modern: By managing several fieldbuses, this CNC can control multiple drives and local and remote input/output interfaces

The algorithms for motion control with maximum speed and precision, combined with simple but powerful programming functions, make the CNC900S series unique.

The attractive HMI interface, different depending on the type of machine, and **the standard operating system (Windows)**, together with different variants of connectivity, make this CNC the ideal component for **Industry 4.0**, with perfect integration into the corporate communication network.



CNC915S
Laser



CNC901S
Milling



CNC902S
Torning

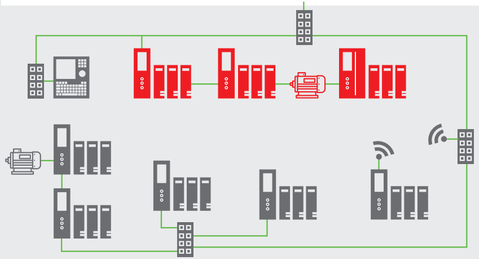


CNC904S
Sheet Metal Bending



CNC905S
Plasma





IRT communication:
Isochronous Real-Time (IRT) Communication

RT communication:
CanOpen, Profinet, Profibus, EtherCat

Integrated sistems

“Ready to go” solutions for industrial automation

Thanks to several experiences over the years, BDF Digital has developed innovative solutions for various industrial sectors: from power supply, to flexographic machines, to plastic injection machines, to glass melting, up to customized solutions. Our systems integrate general communication protocols IRT, D2D (Drive To Drive), which, thanks to a data exchange every 200 us, allow advanced synchronization algorithms.

4.0 Technology

Software is everything. The Industry 4.0 challenge has already begun and requires a reliable automation specialist with deep experience in software and IT infrastructure. BDF Digital has developed advanced software for data exchange via communication protocol; for instance, setting of production recipes and data upload to ensure connectivity, mobility and maximum productivity around the world.

Energy consumption control

BDF Digital interfaces with network analyzers / energy meters able to provide information and tracking energy consumption. Analyzing the trace of the instantaneous and/or average power, it’s possible to verify the load conditions and check the specific consumption per unit or per production order.

The best industrial partner

Optimized industrial solutions
to achieve the best results in industrial automation and offer taylor made solutions

Automation solutions on several system types

Taylor made solutions in customized systems with investment pay back and quick time-to-market

Successful partnership for long-time cooperation

2025_10. In order to guarantee continuous product improvement, BDF Digital reserves the right to make changes to features and images without notice

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