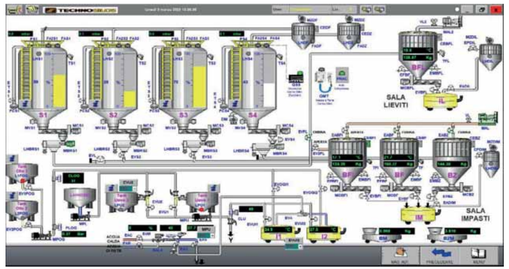
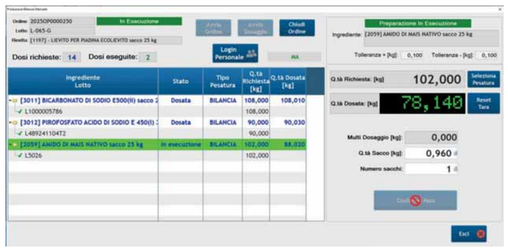
CF CROSS FORMULATION DOSING / MIXING



Identification of lot numbers by colour (different lots in a silo). Zoom on silos, weighing areas, or mixing.



Complete visualization of the processing progress. Intuitive formulation of Crossed Recipes.

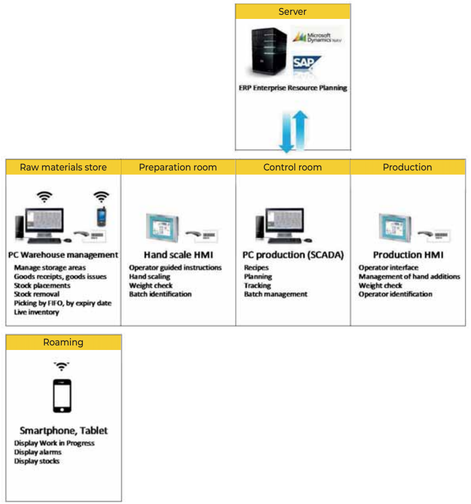
The cross formulation of dosages and mixtures is particularly suitable for automated robotic systems where the ingredients introduced at different points and stages of mixing can vary.

The mixer settings are incorporated into the dosing recipe. This cross formulation allows the preparation of complex recipes, including, for example, mixing times, temperatures, and speeds.

Communication occurs through data exchange between the PLC and the mixer. These functionalities are transparent to the operator.

Each PLC (dosing and mixing) remains independent and can operate autonomously from the other for enhanced safety.
Mixing results, such as cycle time or temperature at the end of mixing, are recorded in a local or remote database.

HMI CONFIGURATION & ERP INTEGRATION



The Batch Management System can be easily integrated into existing or future infrastructures thanks to the use of open-source standards such as HTML5, XML, OPC, and SQL.
This ensures compliance with Industry 4.0 and 5.0 regulations.
The SQL Server on which the system is based allows for the direct evaluation of collected data and transfer to higher-level systems such as ERP systems.
MES functionalities and additional modules, such as warehouse management, traceability, and maintenance, have been implemented.

Our systems are open and scalable, allowing:

- Easy recipe and planning management,
- Improvement of process quality through the exchange of accurate and timely information,
- Complete traceability of raw materials,
- Optimization of production performance,
- Integration of information systems (ERP) with data exchange via SQL server.

THE RIGHT PROGRAM FOR EVERY REQUEST

	HMI Interfaces			HMI / PC Interfaces	
	W200 / WDESK touch	HMI Panel ≥ 9"	System Open	SCADA Light	SCADA Full
Number of powder products	Up to 3 silos / 1 scale	Up to 6 products / 2 scales	Up to 6 products / 2 scales	Unlimited	Unlimited
Number of liquid products	NA	2	6	Unlimited	Unlimited
Number of recipes	NA	99	99	Unlimited	Unlimited
Number of manual ingredients	NA	99	99	Unlimited	Unlimited
Features					
Set point of the products	■	■	■	■	■
Recipes		■	■	■	■
Water measurement		■	■	■	■
Manual ingredients		■	■	■	■
Weighed manual ingredients		■	■	■	■
Recording of used materials		■	■	■	■
Alarm history and email notifications		■	■	■	■
Production orders and planning				■	■
Batch traceability (FIFO)				■	■
User and operation traceability					■
Identification via Barcode and RFID					■
Integration with existing ERP					■
Cross Formulation Dosing/Mixing					■ (CF mod)
Premix management					■ (PM mod)
Warehouse management					■ (WM mod)
Smartphone app					■ (MM mod)
Operation Maintenance					■ (OM mod)

Hardware					
PLC	Technosilos	Technosilos Panel-PLC	Siemens / Allen Bradley	Siemens / Allen Bradley	Siemens / Allen Bradley
Operator interface	Display	LCD Touch	LCD Touch	LCD Touch	LCD Touch
Screen size	NA	9" - 15"	9" - 18"	9" - 22"	9" - 22"

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Via Piana 67, 47032 Bertinoro (FC), ITALY
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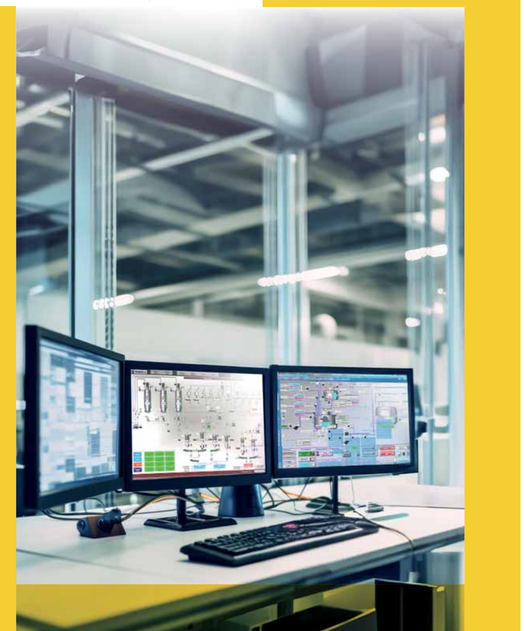
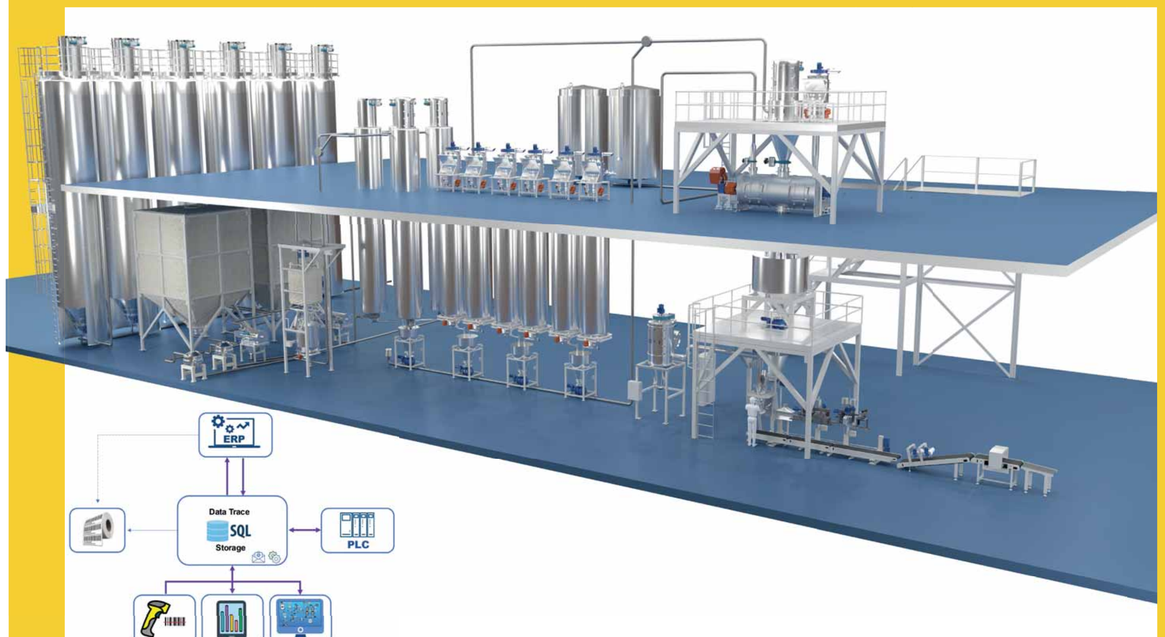


INDUSTRIAL AUTOMATION AND CONTROL

Technosilos integrates its systems with advanced control solutions, ensuring complete process management, optimized maintenance, and secure traceability of raw materials.

SYSTEM ARCHITECTURE



TECHNOSILOS
STRONG CONNECTION, STRONGER SOLUTIONS.

IT SOLUTIONS FOR AUTOMATION AND DATA MANAGEMENT

Intuitive operator interfaces

Recipe management & planning

Traceability

ERP integration

SCADA - Optimal process control

APPLICATIONS

Technosilos designs, develops, and installs Batch Management Systems in the form of HMIs on individual panels and SCADA architectures on PCs.

Our operator interfaces maintain control over the display and recording of all ingredients, both automatic and manual, ensuring strict adherence to the recipe.

The process management level is integrated into the supervisory and data acquisition system (SCADA). It offers recipe management, scheduling, visualization, and tracking. All supplied batches and incoming raw materials can be traced and reviewed at any time.

DESIGN

Software development takes place through collaboration with our main industrial automation partners such as Siemens, Schneider, or Allen Bradley, with the aim of ensuring:

- Advanced and intuitive user interfaces;
- High performance levels;
- Reliability;
- Customer support;
- 24/7 remote assistance.

The package offers a complete visualization of the work process. It can be easily integrated with existing information systems.
Additionally, numerous customizable modules can be implemented based on the customer's specific needs to control, trace, and manage information to and from production.

HARDWARE...

HMI INTERFACES

HMI interfaces operate based on the principle of a PLC and an operator terminal.

This control unit is used for managing the weighing of solid, liquid, and manually added raw materials in strict compliance with the recipe. The touch panel is quick and easy to use, and thanks to the intuitive menu, recipes or individual ingredients are stored and can be modified at any time.

Quantities can be adjusted at the simple press of a button.

All ingredients, both automatic and manual, are recorded, ensuring strict adherence to the recipe.

W200 and WDesk are alternative solutions specifically designed for small and medium-sized operations.

INTERFACES HMI / PC
The HMI / PC interfaces are developed in the form of Open System Architecture to ensure data collection and management at all stages of a production process.
This architecture, based on Microsoft SQL, supports the use of barcode readers and RFID for accurate identification and tracking of raw materials.

& SOFTWARE

SUPERVISION AND DATA ACQUISITION-SCADA

The SCADA package provides a complete view of the production process and detailed management of raw material batches (recipes, lot numbers) and operations, both at the execution level and the management level.

The software can be easily integrated with existing and/or future information systems, such as an ERP.

Management Execution System (MES) functionalities are currently integrated and ensure compatibility with Industry 4.0 and 5.0 regulations. Additional modules can be implemented, such as:

- **CF Cross Formulation**
  The mixer settings are incorporated into the dosing recipe. This cross formulation allows for the creation of complex recipes, including, for example, mixing times and speeds, or intermediate manual dosages.
- **PM Premix Management**
  Premixes can be managed as separate recipes or as part of a main recipe, prepared in advance while maintaining control over the total quantity required based on the planned production.
- **WM Warehouse Management**
  Warehouse management and its transactions, such as goods in/out, stock transfers, and inventory management.
- **MM Mobile Management**
  Mobile application for smartphones or tablets for monitoring ongoing work and alarms.
- **OM Operation Management**
  Management of maintenance activities for components used in the plant such as valves, motors, and filters, aimed at reducing unplanned machine downtime.