



D&P GROUP

# LDS4.0

AUTOMATIC ANALYSIS,  
MIXING, TOP UP AND LEVEL  
CONTROL SYSTEMS

D & P GROUP

Your Industrial Liquid  
Management Partner



# INDUSTRY 4.0

Industry 4.0, which includes a technological mix of sensors, connectivity and programming, represents a new revolution in industrial liquid management and process organization.

The integrated systems for recycling of exhausted coolant developed by D&P Group have been engineered to improve the automated management of industrial liquids in machining process.



# PROBLEM

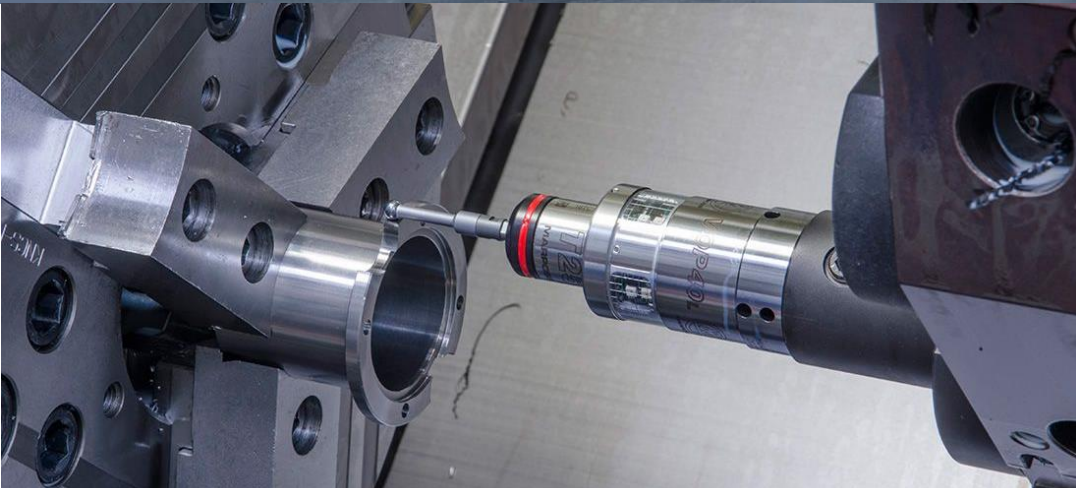
## Oil Waste

Elevated waste of highly polluting and costly products (cooling lubricants)



## Disposal

High costs and severe environmental impact for disposal of exhaust emulsions



## Mechanical Wear

Premature tool wear on CNC machines and possible failures due to human error/mistakes or improper monitoring and mixing methods



# SOLUTION

## Less Waste

Reduction and optimization of highly polluting and costly products (cooling lubricants)

## Eco-Friendly Impact

Reduction of environmental impact costs and disposal of exhausted emulsions

## Process Optimization

Improvement and optimization of machining time and production processes of mechanical components



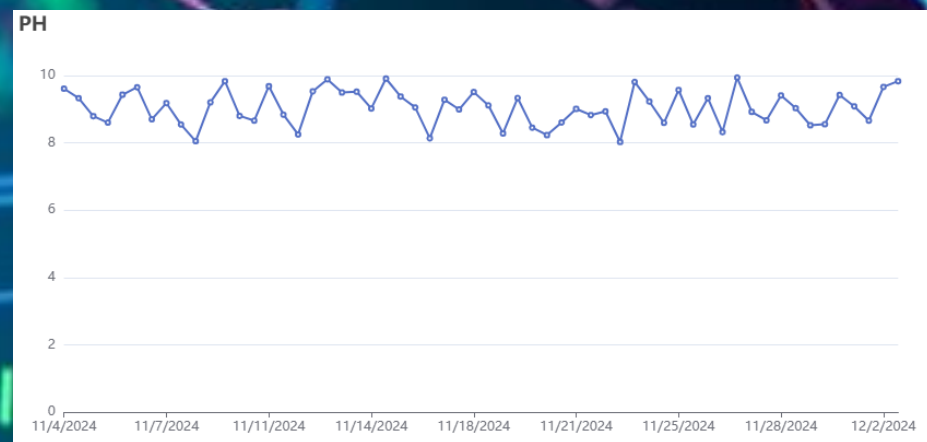
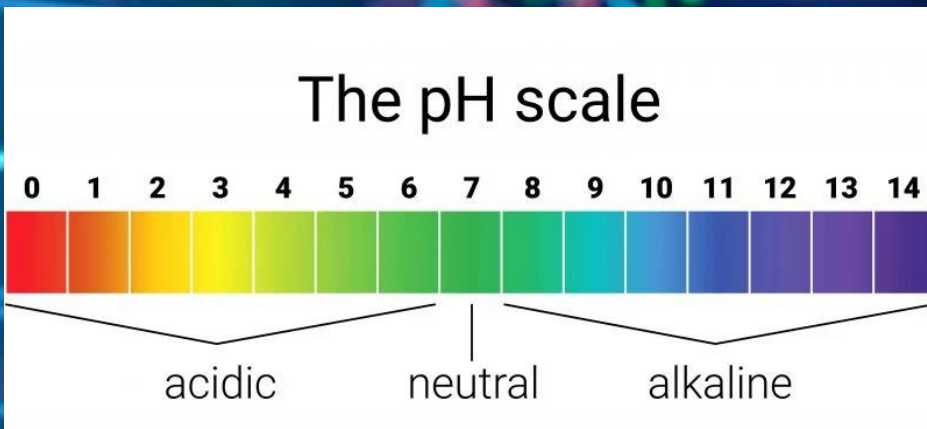
# ADVANTAGES AND FEATURES

## Advantages

- Avoid the manual process of mixing, delivering, and monitoring managed liquid levels
- Avoid uncontrolled spills
- Maintains more stable processes
- Optimizes coolant performance
- Avoid coolant exhaustion during unattended processing

## Features

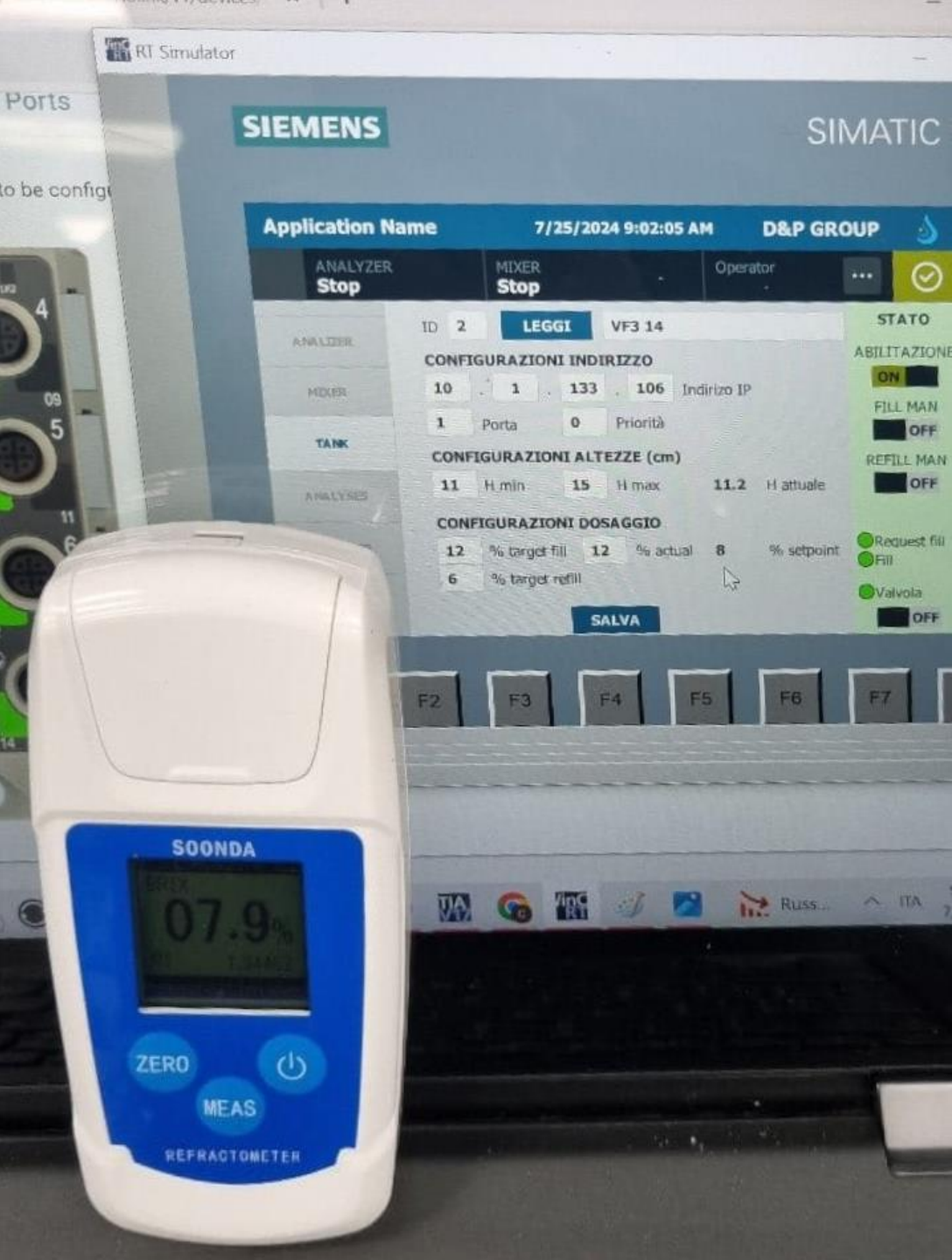
- Maintains set fluid parameters on each machine
- The parameters of each machine tool can be customized according to the needs of the machining process
- Capable of handling different concentrates (oils, additives, water, stabilizers, etc.)
- Customer support via remote access worldwide
- Data storage on a dedicated server for 10 years
- Continuous analysis of the use, consumption, and parameters of the managed liquids



# REAL-TIME ANALYSIS

Thanks to a management software connected via LAN to the sensors located in each machine tool, the LDS4.0 system can analyze and transmit through the cloud the following parameters:

- Level
- Consumption of water used in coolant production
- Level control of neat oil in the tank
- Emulsion concentration in the tank
- pH
- Conductivity
- Bacterial growth
- Temperature
- Tank water hardness \*\*



# AUTOMATIC PARAMETER CORRECTION

When the software receives the alerts on the parameters to be corrected, it starts the mixing pumps and opens the solenoid valves connected to the water system to quickly correct the out-of-scale parameters.

# FAILURE PREVENTION

Thanks to the prompt correction of parameters, premature wear of machine tools, machine stoppage, and the resulting costly maintenance are avoided.



# AUTOMATIC FLUID MANAGEMENT AND CONTROL SYSTEM

## INDUSTRY 4.0 IN CLOUD

Through the control and analysis software connected to sensors located in the refrigeration tank, the system can detect, analyze and report all the main characteristics (pH, conductivity, battery charge, concentration, level, temperature, and hardness of the tank water) that each emulsion must have to do its job properly.

# LDS4.0A THE ANALYZER

## COOLANT DATA

- Concentration
- pH
- Conductivity
- Temperature

## WATER DATA

- pH
- Conductivity
- Temperature
- Water Hardness

## SPECIAL ANALYSIS (\*On request)

- Turbidity
- Chlorine
- RedOx
- $\text{NH}_4^+$
- Bacteria Growth

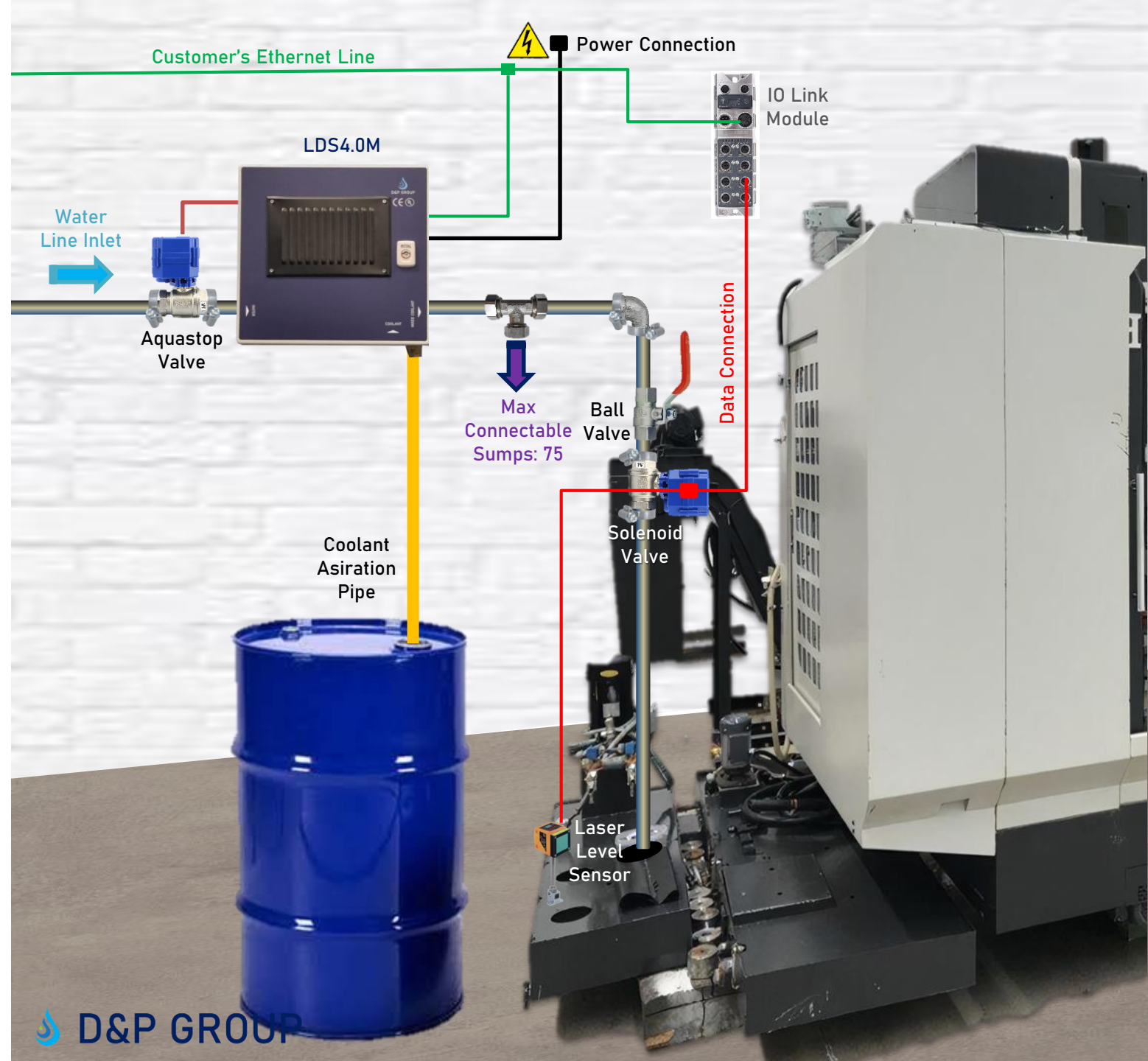


# LDS4.0M THE MIXER

- Automatic filling / refilling
- Real time level detection
- Laser or wireless\*\* sensor
- Dosing accuracy:  $\pm 0,1\%$
- Laser or wireless\*\* sensor
- 7 GPM or 13 GPM
- Not affected by water parameters

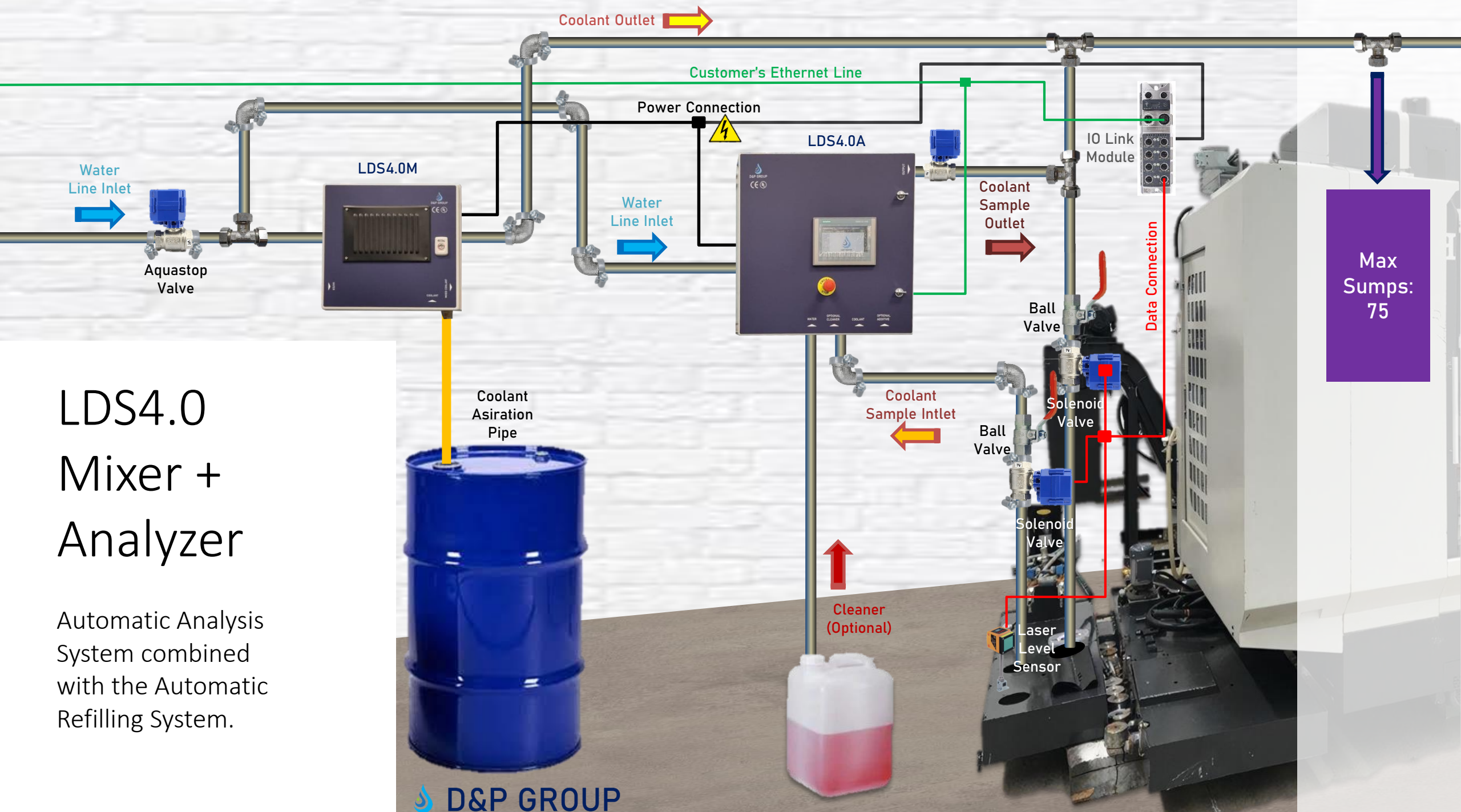
(flow and pressure)

\*\*wireless connection



# LDS4.0 Mixer + Analyzer

Automatic Analysis  
System combined  
with the Automatic  
Refilling System.





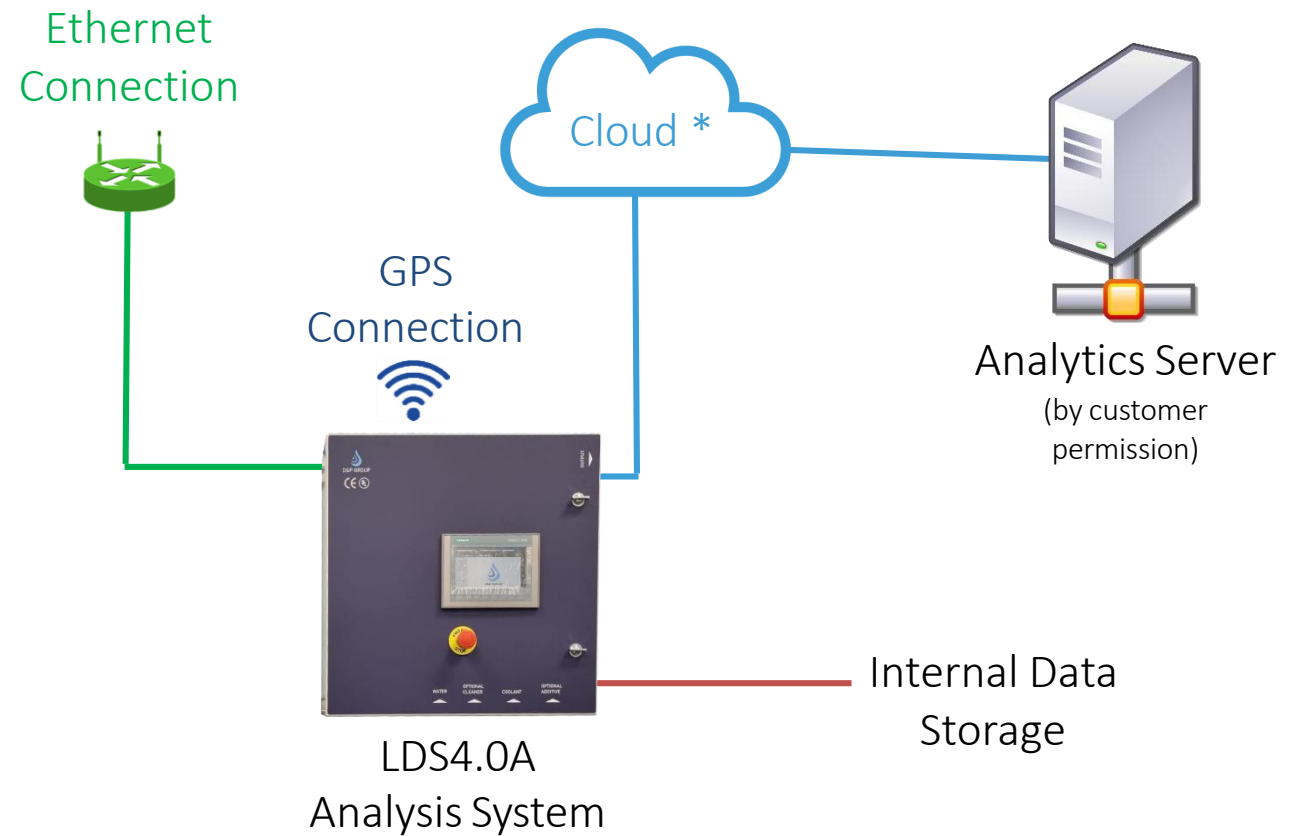
# PORTAL INTEGRATION

fully integrable with other IT platforms as:





# CLOUD CONNECTION & STORAGE



\* A cloud connection or a dedicated VPN is required to ensure remote teleservice and monitoring by D&P GROUP



# CARBON FOOTPRINT

Using the LDS4.0 systems produced by D&P GROUP, it is possible to decrease the production and release of CO<sub>2</sub> into the environment.

## COOLANT PRODUCTION

Production of 0.26 gal of lubricant/coolant produces CO<sub>2</sub> emissions of about 12.5 lb/gal

## COOLANT DISPOSAL

Disposal of 0.26 gal of lubricant/coolant produces CO<sub>2</sub> emissions of about 12.5 lb/gal

*Source: US EPA - U.S. ENVIRONMENT PROTECTION AGENCY*



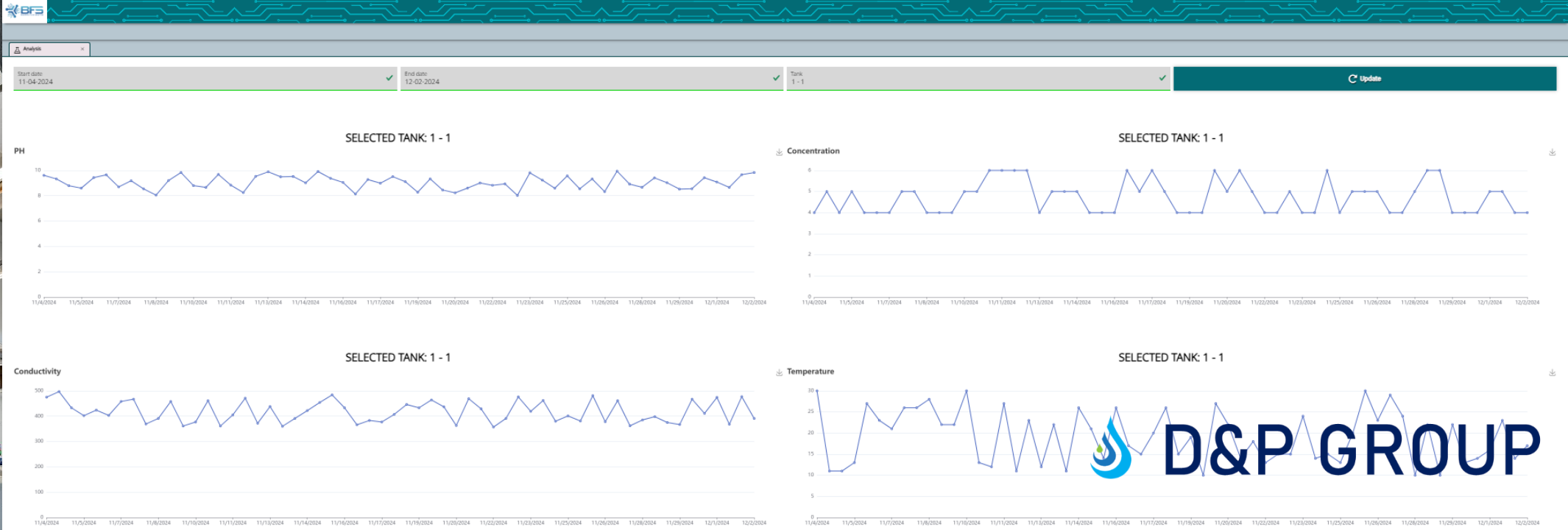
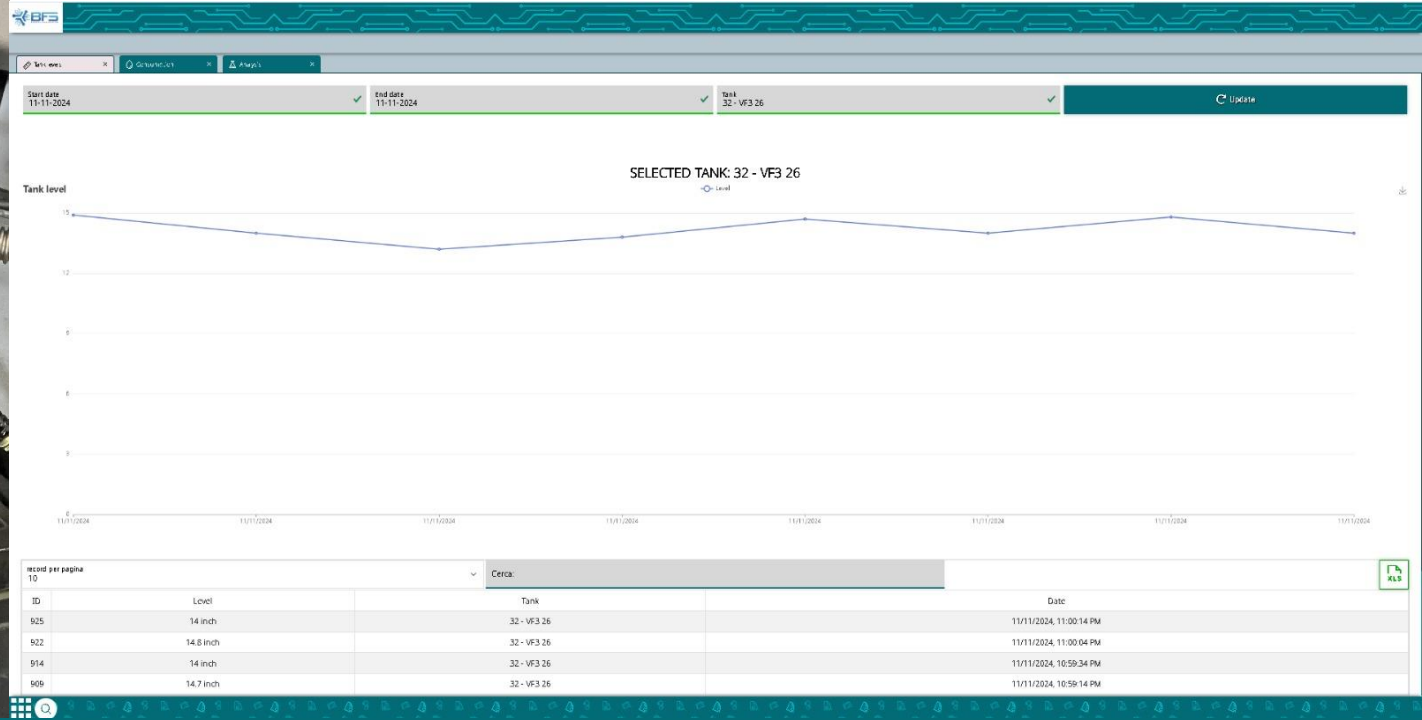
# AGENDA 2030

Dosing & Pumps is supporting the sustainable development project drafted through the United Nations Global Agenda and the Sustainable Development Goals (SDGs)

- 17 Goals
- 169 Targets
- 240+ Indicators

An integrated vision of sustainable development, based on four pillars: Economy, Society, Environment, Institutions







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