

**Experts** in dyeing and finishing.

# Leading process automation - since 1978.

We globally develop and supply integrated systems for the textile finishing industry. We are the inventor of the first automatic dyeing machine controller and have installed the first fully automatic dyeing mill.

Today, we supply highly integrated systems from ERP level, linking to our MES systems, to the machine floor. We offer solutions for process management, color management, printing and energy management.

Our customers are the textile dyeing and finishing industry, machine builders, dye stuff manufacturers, the apparel and technical textile industry, leather industry, paint industry and institutes.

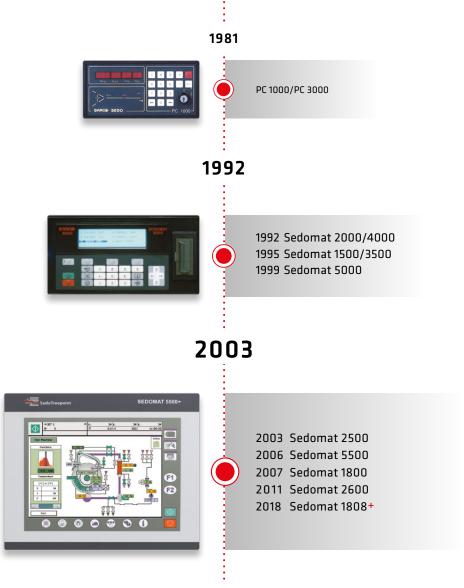
Our products and support help customers optimizing their production. At present, we focus on green textile technology, delivering the best available technology to reduce energy consumption, chemical use and waste water.

Sedo Treepoint provides first-rate customer service to ensure that its products will keep up its performance continuously and downtimes are minimized.

Sedo Treepoint is part of the VANDEWIELE Group.



#### **Sedo Treepoint controller timeline**



# 2019











# *OVANDEWIELE*

**VANDEWIELE**, with head office at Kortrijk (Marke), is a market leader in designing and manufacturing high-tech machines and solutions for the textile industry. With 4.500 employees worldwide, Vandewiele develops machines for the whole production process: from yarn production to the final finishing of textile products.

The ingredients of our success story? A progressive R&D-strategy, a consistent investment policy and a state-of-the art production system, with the whole production process from A to Z being realized inhouse. The continuous interaction between R&D and production forms a virtuous circle.

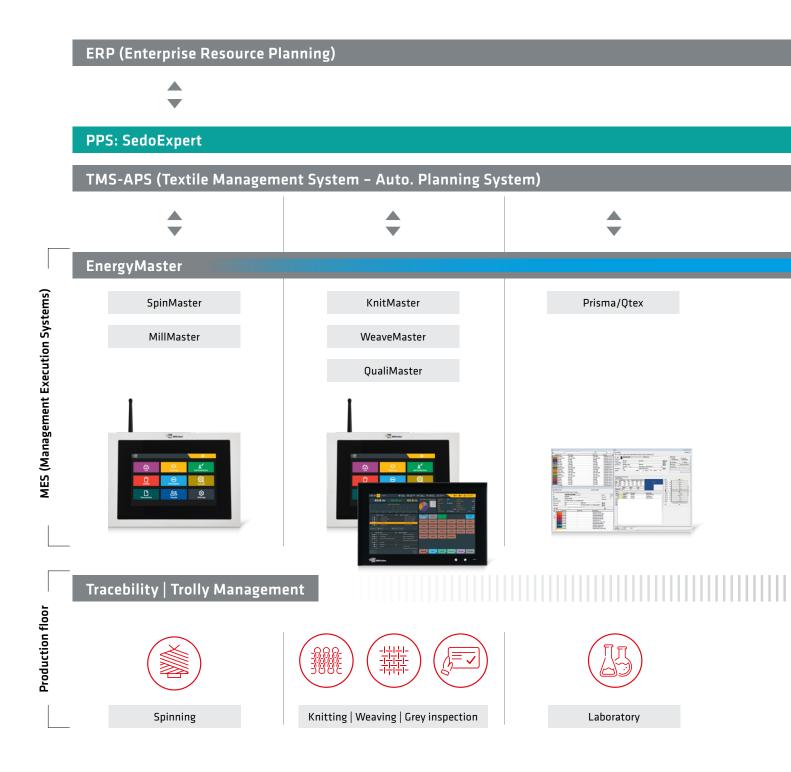
With more than 20 brands, many of which are market leaders in their field, the Vandewiele group is one of the largest players in the textile machinery sector.

www.vandewiele.com



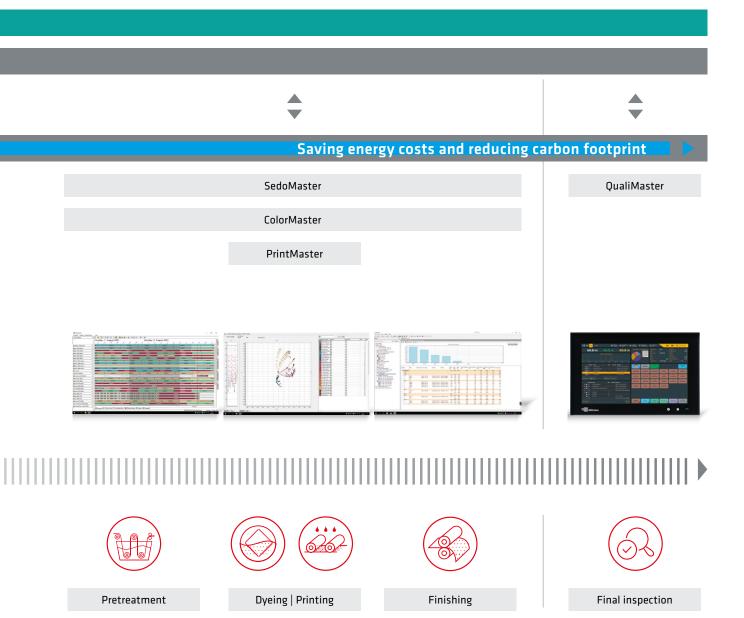
# Smart factory

Sedo Treepoint offers smart solutions to integrate the complete textile supply chain through intelligent optimization of processes and production workflow.



The concept can be adapted according to the needs of each customer and can also be introduced in stages.

A fast payback can be realized and the ecological footprint can be improved tremendously.



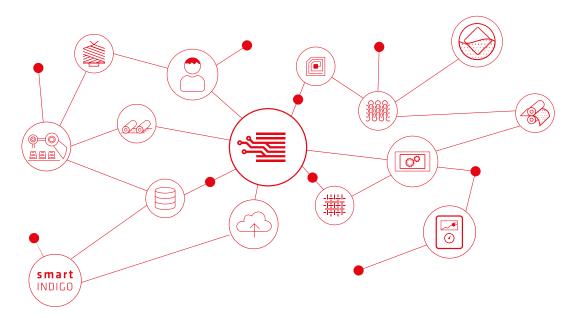


# Smart factory

The production of the smart factory should be intelligent, efficient and connected. Sedo Treepoint offers automation, MES (Manufacturing Execution Systems) and PPS solutions as the core of the smart factory.

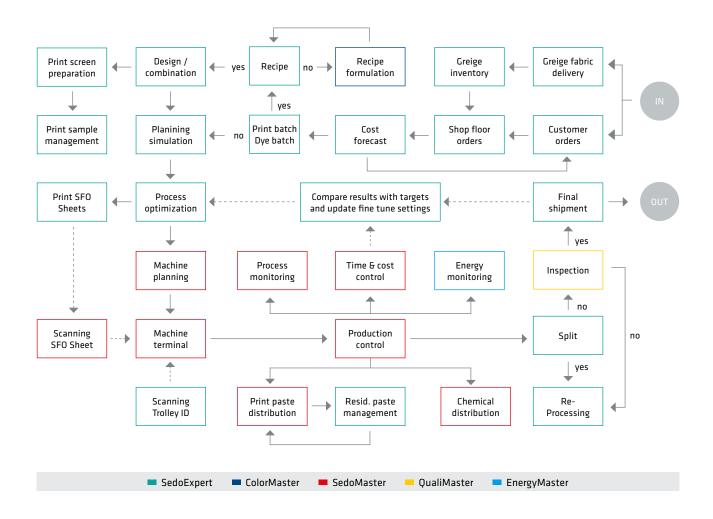
- Clear organization of the workshop
- Effective control of production, save machine time increase efficiency
- · Real-time detection of machine parameters and warnings
- Increase RFT, reduce defects and wastage, saving production costs
- Total integration ensures the operation of the machine in accordance with established process standards to improve product quality
- Historical process data using real-time feedback for optimization of the process

- Achieve sustainable production by control of energy consumption and analysis/benchmarking of carbon footprint, significantly improving energy efficiency, saving energy costs
- Reduce cost and consumption of chemicals and dyes
- Automatic production reports, production and statistical data analysis and decision statements, greatly reducing the investment in human resources



#### Smart factory

- From order to production, analysis and feedback to sales on process costs
- Production planning enhanced by resource optimization
- Flexible modular system solutions, on demand, on time, on target
- · Process tracking in real time
- Quality via consistency







# Sedo Treepoint - The system

# **MES SedoMaster**

**Link ColorMaster** 

Link SedoExpert

Link EnergyMaster







#### MES

#### SedoMaster Basic

- Process editor system
- Graphical planboard
- Controller intervention
- Monitoring/reporting

#### SedoMaster Advance

#### (including 1 workstation)

- · Process editor system
- · Graphical planboard
- Controller intervention (Remote access to machine controllers)
- Monitoring/management report incl. batch reporting, including dashboard
- Interface to ColorMaster system

# Production overview - dyeing and finishing









Sedomat 8007 Sedomat 8010

Sedomat 8015 for continuous process

#### **Link ERP**

#### **Link Dispenser**

- Dissolver
- Dye kitchen
- Paternoster

#### Link 3rd Party

- Autom. transport system
- Autom. packaging system
- Autom. load/unload system
- •







#### SedoMaster Professional

#### (including 3 workstations)

- Process editor system
- Graphical planboard
- Controller intervention (Remote access to machine controllers)
- Complete reporting incl. dashboard
- Planning with order support
- Interface to ERP system
- Interface to ColorMaster system

#### Options

- Weighing station
- Stock control
- TMS APS
- Link Flex

## Continuous

## Integration via

- OPC DA
- OPC UA
- CANopen<sup>®</sup>
- Profibus DP®
- Modbus RTU
- ...



Sedomat 8015 with Conti visualization



# Designed for the Smart Factory

# **NEW Sedomat 8000 series**

The new Sedomat 8000 series is one of the most modular and advanced systems on the market and offers everything needed for Industry 4.0 and a smart factory. It contains all the benefits of the well proven Sedomat controllers, combined with internal WiFi, RFID, flexible field bus and a high number of modular internal and external I/Os. Energy counters can be directly connected via the various standardized connections. To improve the communication between different systems OPC UA and MQTT interfaces will enhance data communication.

Web-based remote service and control can be guaranteed worldwide. OpenVPN enables a direct and secured connection to Sedomat controller for service intervention. The Sedomat 8000 series already includes a PLC which can be adapted with programming tools and can be optionally equipped with internal and external I/O boards to meet the different requirements of yarn, fabric and other types of dyeing and finishing machines. It is tested for rough production environments and build according to highest quality standards.

# Industry 4.0

#### Specifications

- CANopen<sup>®</sup>
- Optional Profibus DP®, Modbus RTU, Modbus TCP
- RS232, RS485, 2x Ethernet RJ45, 2x USB port
- Onboard WiFi
- OPC UA Server, MQTT Server
- Optional internal RFID/NFC
- OpenVPN Client
- 1 free mPCle slot for extension
- IP67

Further details please refer to the Sedomat 8000 brochure.

#### Capacitive touch

- Sedomat 8007 7" capacitive touch display;
   Optional: internal 16 IO
- Sedomat 8010 10,1" capacitive touch display
   Optional: internal 16 IO
   internal 32IO or
   2 internal SedolO boards
- Sedomat 8015 15,4" capacitive touch display
   Optional: internal 16 IO
   2 internal 32IO or
   4 internal SedolO boards

# The new Sedomat controller range meets the future.

It comes in 3 different sizes (7"/10"/15") to match exactly your needs.



Sedomat 8007



Sedomat 8015



Sedomat 8010



Connections and interfaces Sedomat 8010



# Cost-effective controller for high degree automation

# **NEW Sedomat 6007**

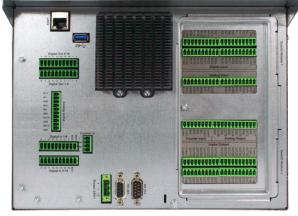
The Sedomat 6007 is a cost-effective solution for a high degree automation specially designed to meet the requirements of Industry 4.0. It comes with a user-friendly 7" touch display and is equipped with Modbus RTU (RS232). It already includes a PLC which can be adapted with programming tools and can be optionally equipped with internal and external I/O boards to meet the different requirements of yarn, fabric and other types of dyeing machines.

A more sustainable and competitive production can be realized due to the integration of SedoMaster and other dye house systems via Ethernet and OPC UA. Also, data acquisition or the use of Sedomat 6007 as production client is possible by optional RFID support.

Like all Sedo Treepoint controllers the Sedomat 6007 guarantees high quality and reliability in rugged production environments.



Sedomat 6007



Connections and interfaces Sedomat 6007

# Specifications

- 7" capacitive touch display
- Modbus RTU (RS232), Modbus TCP
- Different internal and external I/O options
- RS232, RS485, 1x Ethernet RJ45, 1x USB 3.1 port
- · Onboard WiFi
- OPC UA Server, MQTT Server
- · Optional internal RFID reader
- OpenVPN Client
- IP67

#### Modular external IO

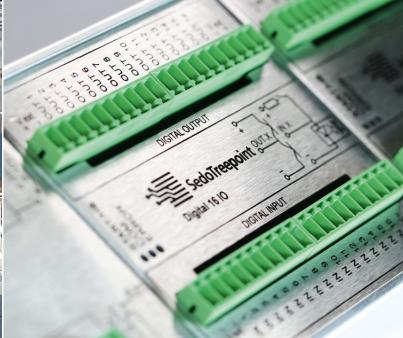
# **SedoIO**

Flexible and scalable high performance IO system which is optimized for textile machine automation.

Flexible fieldbus gateway: beside Profibus DP®, CANopen® and Modbus RTU are supported.

Scalable IO configuration: you can configure the IO module according to your requirements. The module is scalable form 1 to 6 IO boards per module. The rail mounting allows a simple and quick placement in the panel.





#### SedoIO 16/32

SedolO is 100% functional compatible with the proven Sedo Treepoint Profi-16 and Profi-32 modules.

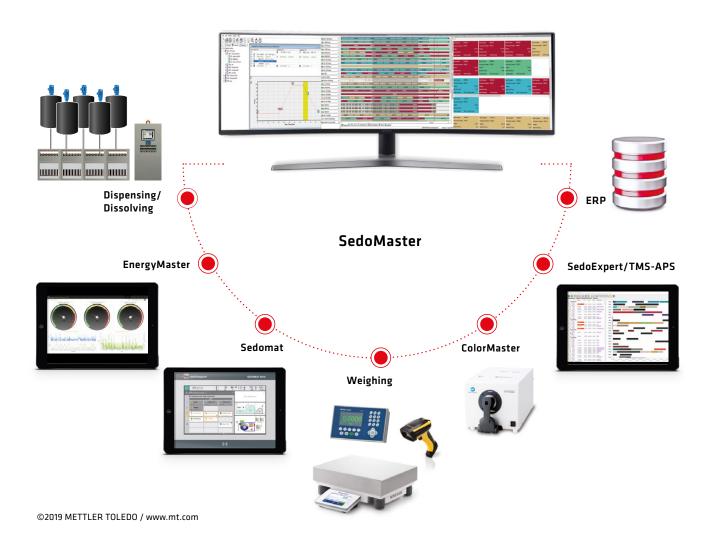
## SedoIO modules

- Profibus DP® gateway
- CANopen® gateway
- Modbus RTU gateway
- Digital 16-IO board
- Digital 8-IO relay board
- Analog 4-IO board



# A strategic solution for the textile finishing industry **SedoMaster**

SedoMaster is a Windows based solution, designed to manage the dye house or an entire textile finishing plant. SedoMaster provides everyone, from the operator to the chief executive with an integrated solution, allowing them to manage recipes, processes and reports. SedoMaster supports all required interfaces to other systems such as chemical dispensing, recipe management and ERP. The result is optimization of all machinery (dyeing, washing, bleaching, stenter, dryer, calander, etc.) and minimization of costs. Production processes (programs, settings, etc.) are created with the graphical process editor and downloaded to the machine controllers enabling central management of production processes for each machine. The graphic interactive planboard schedules batches to the selected machine. Based on production, calendar and shift times, it calculates the most probable start and end date of each batch and optimizes the production sequence.





#### SedoMaster reporting

The SedoMaster reporting is a powerful tool to generate production and consumption reports as well as to analyse the acquired production data. Via efficiency and alarm reports, it is easy to find out where a problem with efficiency, utilisation or production stop occurred.

Also, historical reports, shift reports and real time production reports can be generated.

#### SedoMaster

Besides the production planning and process optimization, analysing tools are the key component to increase the efficiency and quality.

## Options

- Link ColorMaster/Recipe Systems
- Weighing station for dyestuffs and chemicals
- Link to dispenser/dissolving station
- Inventory
- Link with ERP systems
- Routing support
- Dashboard



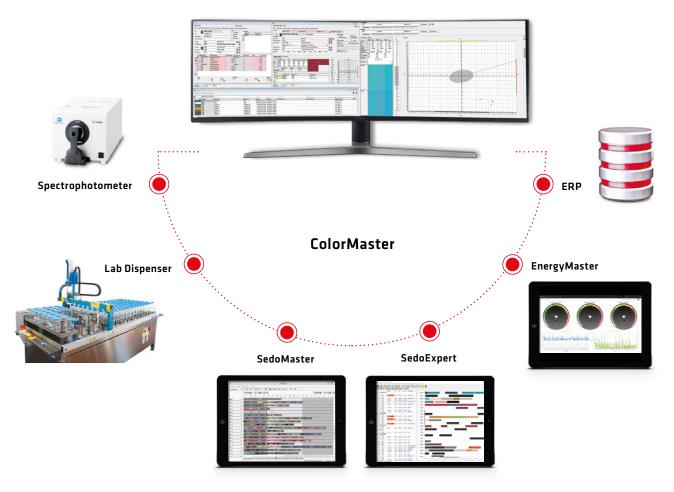
# Optimized production, integrated color and recipe management **ColorMaster**

The Windows-based ColorMaster software for recipe management and color measurement is designed for use in the laboratory as well as in production. Recipes can be calculated and the correct dyeing program defined. Colorimetric control of the various production stages and post-recipe calculations with post-recipe treatments complete the spectrum of ColorMaster.

The correct recipe is selected on the basis of color differences, metamerism, price, number of dyes and other variables. The integrated graphical formula editor can be used to create customized formulas for calculating chemicals, dye quantities, wastewater loads and other operational dependencies, which are used for process optimization.

Processes are built up modularly, based on individual work steps, such as bleaching, dyeing, soaping and rinsing, etc., and the required quantity of dyestuffs and chemicals as well as other parameters are determined depending on customers, qualities, machines and other dependencies.

ColorMaster, in combination with the SedoMaster management system, is indispensable for the development of a dyeing plant into an optimized and automated production facility. The software supports the management of customer and supplier data, dyes, chemicals, auxiliaries as well as master recipes and helps to optimize production processes economically.





## Advantages

- Reduced production costs through less correction
- Production control and reproducibility
- · Optimized dye processes
- Recipe development
- Pass/Fail
- Connection to laboratory dosing station





#### ColorMasterConnect - Web-based Color Management

ColorMasterConnect is the latest version of ColorMaster for production. It is running on different operating systems and devices. Seamless integration is possible with other applications like SedoMaster, SedoExpert, TEXconnect,.. A flexible integration of third-party systems can be realized via API. There is no installation required and updates can be made immediately.





#### Features:

- Seamless integration with SedoMaster
- For production applications
- Optimization of recipes
- Rules for optimizing treatments
- Cost and resource cutting



# Energy monitoring: reduce carbon footprint – save costs **EnergyMaster**

Today, in textile finishing, beside material and labor costs, energy costs are normally the third important cost factor. For controlling and post production analysis it is difficult to calculate the exact energy cost for a production step or an article. A sudden increase in energy consumption of a production run can push an order easily into the red.

With ever rising energy prices and increasing environmental legislation, efficient energy management has become a very critical success factor to run a profitable business in today's global economy. To monitor, control and cut costs, Energy Master is the perfect tool.





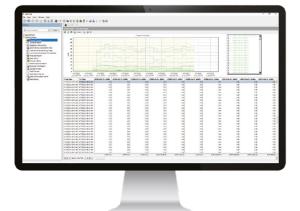
## Objective with EnergyMaster

#### Get answers on important questions like:

- · Largest energy users
- Cause of peak consumption
- Power factor (cos phi) of our company
- Energy consumption fluctuation of a machine or department over time
- Energy consumption by style and product
- Remnant energy consumption when production is shut down
- Abnormal consumptions

## Reporting

- Counter reports
- Consumer reports
- · History reports
- Performance characteristics line (PCL)
- Specific energy consumption (SEC)
- Cumulative sum of deviations (CUSUM)
- · Customer orders management



Energy consumption by time, e. g. last 24 hours.



Power consumption by department by time, e. g. last 48 hours.

#### EnergyMaster

- Measures energy consumptions
- Controls and targets energy consumptions
- Saves costs and reduces carbon footprint



# Expert software for fully automated textile industry **SedoExpert | TMS**

#### SedoExpert

SedoExpert is a PPS/MES platform designed to manage modern textile factories and to operate within a completely integrated, automated environment.

#### SedoExpert supports the following operations:

- Knitting, weaving mills
- Fabric dye houses (exhaust and continuous)
- Yarn dye houses
- Printing mills
- · Laundries
- Denim plants

SedoExpert can handle customer orders, production orders, inventory, planning, billing, MIS and much more. Production optimization with MES closes the gap between ERP and production machines.

#### Production planning | TMS

#### Scheduling simulation engine

· Automated schedule generation

#### Interactive user planboard

- · User can interfere with schedule suggestion
- Scenarios evaluation

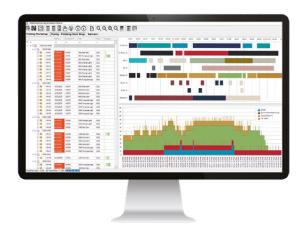
#### Scheduling rules expert with automatic planning

- Define user-specific planning rules integration with other Sedo Treepoint applications
- · Export planning results to SedoMaster
- Production order execution can be updated via SedoMaster, production client or ERP-Link

Connected to the integrated MES systems like SedoMaster, ColorMaster, PrintMaster and EnergyMaster, the data is available also on machine level, resulting in a fully optimized production process.



SedoExpert Shop Floor Orders (SFOs) Overview



TMS machine utilization

#### SedoExpert

- Integration of planning to the production process
- Production simulation
- Execution of production orders



PrintMaster is a MES platform designed to manage modern textile printing factories or companies having a printing department.

#### Printing operation management comprises:

- Orders management and execution
- Samples / Quotations management
- · Quality management
- Inventory management & costing

#### Printing expert system:

- Processing expert
- New products development expert
- Designs and combinations
- · Recipes management
- Rest paste management

#### Connection on machine level

SedoExpert can be interfaced with the individual machines via Sedomat controllers which ensure data exchange between the MES and the machine components.

- 1. In the production, the operator scans the production order
- 2. Automatic download of process data to the machine PLC (Sedomat)
- 3. The production starts, the Sedomat monitors and controls execution
- 4. SedoExpert, SedoMaster and planning modules are updated with execution data

#### SedoExpert Modules

- Customer orders management
- Production orders management
- Inventory
- MIS and business intelligence
- · Lab operation management
- · Customer relation
- · Integration engine
- PrintMaster
  - Screen management



# Dyestuff recipe calculation

# Prisma

#### Prisma

# For use in textile industry, paper industry and leather wet finishing industry

The Prisma recipe calculation system provides advanced colorimetric color matching. Recipes can be quickly and easily calculated, optimized, corrected and stored in a clear, easy-to-use recipe database.

Time- and cost savings by reduced recipe costs, fewer lab dyeings, improved lab/production transfer, fewer additions in production.

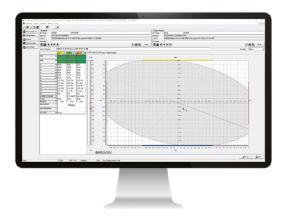


#### PrismaPaint

The PrismaPaint recipe calculation system provides advanced colorimetric color matching for pigment-based applications, e. g. paint, leather coating, cosmetics. In the laboratory and in production, recipes can be quickly and easily calculated, optimized, corrected, and stored in a clear, easy-to-use recipe database.

# Tests for lab and production

# Qtex | Morapex®



#### **Qtex**

#### Color quality control

Otex is the ideal tool for colorimetric quality control. The system allows fast, flexible and competent color evaluation for laboratory and production. Practice-oriented functions support efficient measurement, evaluation and reporting.

Prisma and Qtex are part of the Sedo Treepoint product family and can therefore easily be connected to one or several other systems of the Sedo Treepoint product family. The system can be installed as client-server network application.

#### Morapex®

#### Fast material tests for lab and production

Morapex® is able to analyze and control either raw or dyed material in minutes rather than hours, compared to standard methods. It can be used for textiles (woven, nonwoven, knitted, yarn or fibre), paper and leather. The device prepares a forced extraction that can be further analyized. It is ideally suited for quick pH-tests, check of washing results, wash and water fastness, and many more test.

Morapex® A is a compact test device for use in production that can operate up to 95°C and the multi-liquor option is able to operate with a wide range of wash liquids.

Morapex® S is a stationary unit developed for a wide range of applications within the laboratory.



Morapex® S



# The fastest and easiest automation for your dyeing machines **Retrofitting | P&P for Sedomat**

#### Retrofitting

Make your existing production machines ready for Industry 4.0. We offer retrofitting for all machines in dyeing and finishing. With a limited budget the machine can be updated to work in full automatic mode and links with production dispensers. Connected via the Sedomat controller to SedoMaster this ensures a higher efficiency, resource and cost savings as well as a higher reproducible quality standard. Now with the new Sedomat 8015, retrofits of Sedomat 5000 can be made simple by just exchanging the controller one to one.





#### RetroPack Jigger

We can convert your jigger to the latest electronic geared motor drives. Cost for machine maintenance and down-time will be significantly reduced, allowing you to spend money on other important machine investments. Additionally, special functions are now integrated in the Sedomat controller which were only available on the latest state-of-the-art jiggers. Fabric tension as well as fabric speed can be controlled.



RetroPack Jigger

#### Plug'n'Play for Sedomat

Plug N' Play



You are looking for an easy way to install a controller for e. g. jet or yarn dyeing machine? Your budget is limited? Then we have the right solution for you!

Plug´n'Play for Sedomat is a software package already installed on a Sedomat. It includes a pre-configured and pre-programmed

machine drawing, PLC program and machine configuration. You can just install the Sedomat, adapt some settings and start your first batch!

# Online monitoring and logging of data

# **Data Acquisition**

#### **Data Acquisition**

The Sedomat controller acts as a data acquisition terminal and can be used to acquire machine data (e. g. machine or operator log-in/log-off, declared stops) that can be analyzed via SedoMaster with the included flexible data acquisition reports.



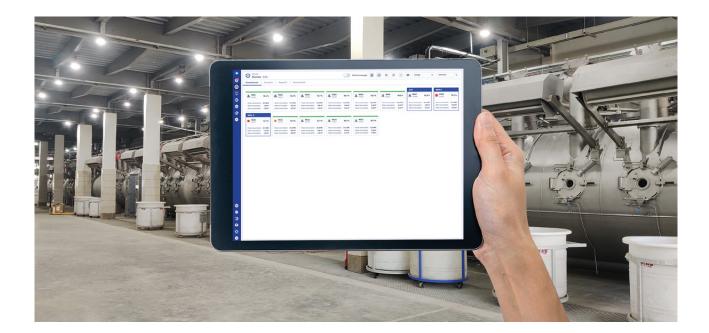


#### Cloud based MES

# **TEXconnect**

#### Cloud based platform for the textile industry

TEXconnect is a cloud based platform offering a wide range of MES features for the complete textile manufacturing chain. It is easy to set up and provides the most common functionalities of our on-premise "Master" systems at a limited investment. It can be accessed from the browser of any internet connected device and is easily scaled according to the customer's requirement. Support, updates and backups are handled by TEXconnect, allowing the customer to concentrate on his core manufacturing business.





# Improve operator response - Mobile real time control

# SmartBracelet / SedoAPP



#### **SmartBracelet**

Improve efficiency by faster operator response with the Smart wearable device. The SmartBracelet is an intelligent tool for immediate operator notification.

The wearable device communicates with the machines of the shopfloor via SedoMaster and data units, receives important operator calls, preparation calls as well as alarms and informs the operator immediately. This results in faster reaction times, minimizing machine downtimes and increased machine and operator efficiency.

- Touch controlled device with configurable settings
- Support of multiple bracelets
- More flexible and efficient production
- Smart IoT technology

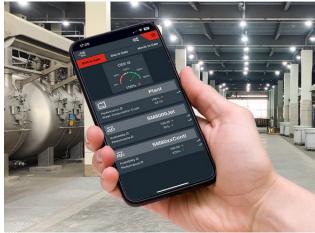
#### SedoAPP

Real time information is a key feature to meet highest quality standards, increase efficiency, improve productivity and reduce resources and costs.

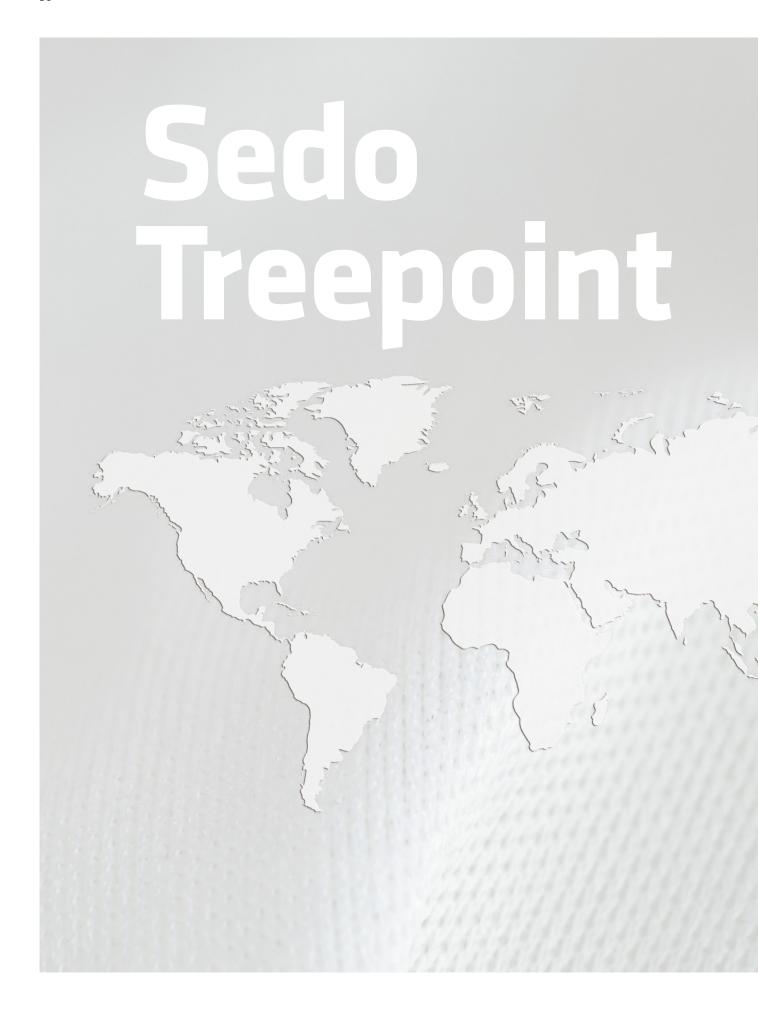
As an extension of the SedoMaster MES the SedoAPP allows users to keep track of all machines anytime and anywhere. The complete production site can be monitored also it is possible to define different machine groups, e. g. to get an overview of all dyeing machines in hall 1.

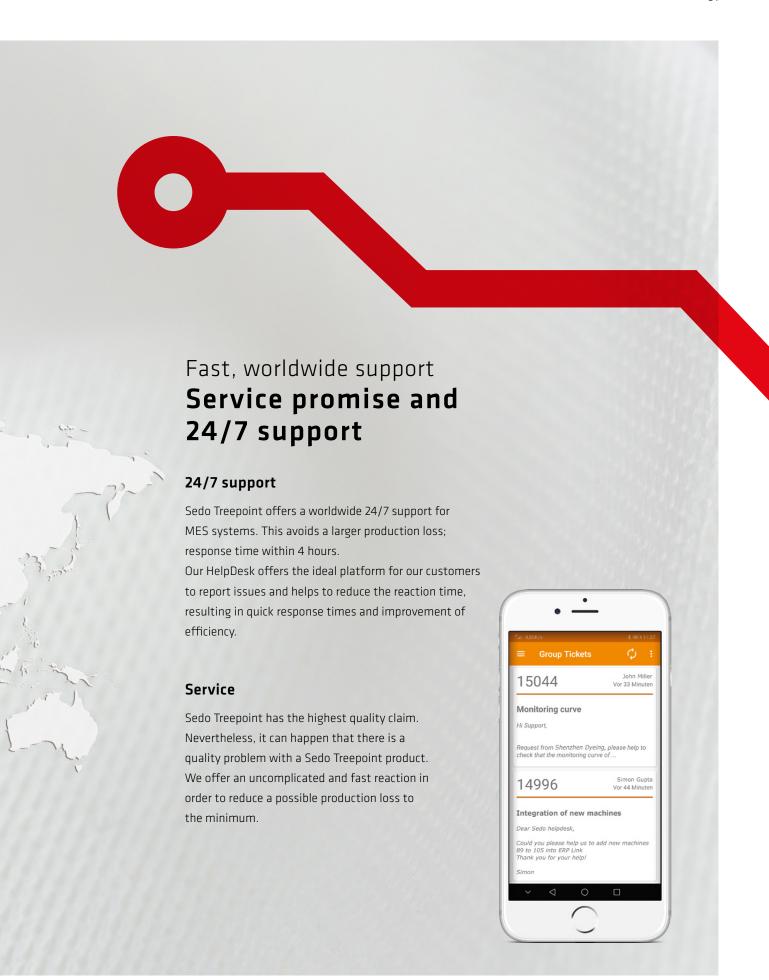
In addition Sedo APP is a powerful tool to monitor all important KPIs. The defined key figures are displayed in curve charts and are available e. g. per day, per month, per shift.

- Extension to SedoMaster MES
- Current machine status overview
- Monitoring of all important KPIs













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Sedo Treepoint Member of Vandewiele Group

