

ABB ROBOTICS

## PickMaster® Twin

Vision-guided random flow packaging software for the digital factory of the future



PickMaster® Twin features digital twin technology, which increases productivity by dramatically shortening commissioning times from days to hours and changeover times from hours to minutes while maximizing overall line efficiency.

### Digital twin enabled by PickMaster® PowerPac

PickMaster® is the market leading robotic software for vision-guided random flow picking and packing applications. When using digital twin technology, the simulated station can be directly connected to the running production, allowing simultaneous optimization of the picking process in the virtual world in real time while the real process acts accordingly.

### PickMaster® Operator offers state-of-the art user interface

ABB also condenses and enhances the advanced application experience with the introduction of the new PickMaster® Operator presenting intuitive interfaces built on ABB Ability™ Zenon data management software, providing colorful dashboards for easy data visualization and production control. Its modern user interface gives operators and plant managers full insight and control of the production result. These easy-to-use user interfaces include a touch tile home screen, production screen and digital production dashboard.

### Maximizes output while increasing OEE

PickMaster® complies with the OMAC PackML standard making PickMaster® an integrated part of modern packaging machineries and factory planning and reporting systems.

The latest version also enables visual online tuning of the robot operating area in both X and Y directions, helping maximize output and increasing overall equipment effectiveness (OEE).

The software features a powerful color vision system that can support up to 10 cameras for accurate position guidance and feature inspection. Circular conveyor tracking capability enables picking of random products from circulation tables. Designed to fit small single-robot cells as well as complex production lines with up to 10 robots.

### Key Benefits

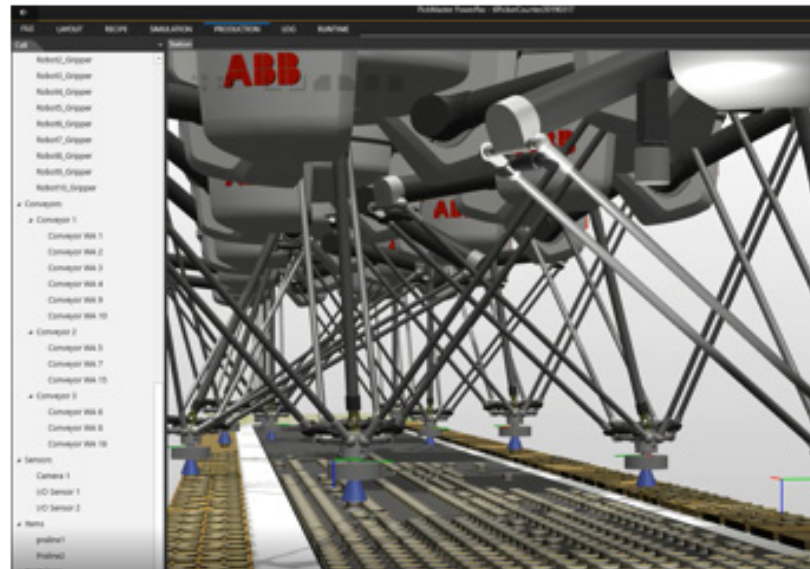
- **Speed:** Reduces commissioning and change-over times
- **Flexibility:** Supports all\* ABB robots, linear and circular conveyor configurations, controlled by OmniCore or IRC5.
- **Simplified:** Streamlines hardware/software setup and configuration
- **Cost:** Reduces total integration costs
- **Unique:** Digital twin technology enabling seamless simulation and emulation of virtual and real installations including visual tuning
- **Domain expertise:** Simulates future production operations
- **Productivity:** Operational efficiency, PackML enabled

\* Except IRB 14000 dual-arm YuMi®

Features
<b>Vision</b>
Search tools PatMax™/Blob Inspection (multiple feature evaluations: size, shape, rel. positions, histogram, color, e.a.) Vision result recording and playback External Model and Sensor SDK Linear and non-linear calibration with perspective compensation Up to 10 simultaneous camera acquisitions Supported cameras: Basler Scout and acA series, color and monochrome, global shutter Offline vision simulation
<b>Conveyor Tracking</b>
Up to 6 Linear or circular variable speed conveyors per robot Up to 100m/min conveyor speed Up to 25 indexing work areas per robot Supports DCQC377B and DSQC2000 conveyor tracking hardware
<b>Flow management/process</b>
Supports up to 10 robots Item distribution: Load Balancing, Adaptive Task Completion for progressive picking and case filling Sizable work area windows in x/y
<b>PowerPac</b>
Digital twin technology 3D graphical station and recipe designer Full offline picking process simulation Online 3D graphics picking process emulation Ghost picking with recorded flows Flow optimization through visual operating windows tuning Online tuning Pack&Go solution sharing
<b>Operator</b>
ABB Ability™ Zenon Scada platform User Authentication management Recipe selector Operations Dashboard PackML ready Control and status information for Line PLC through Packtags and Transparency tags PackML execution logics Integrated SoftPLC Modbus and ProfiNet connectivity Error Logs and event handling Process speed indicators with limit values Runtime Process tuning
<b>Options</b>
Runtime License GigE Cell kit, max 2 cameras GigE Line kit, max 10 cameras Additional GigE network card Offline vision demo dongle

Technical data
<b>Product content</b>
PickMaster® PowerPac PickMaster® Operator PickMaster® Runtime Vision Hardware
<b>Hardware</b>
Gigabit Ethernet Vision: Cognex CVL Dongle enabling color vision for max 2 cameras Cognex CVL Dongle enabling color vision for max 10 cameras Basler acA1440-73gc color camera with 1440 x 1080 resolution, including cables 4 port GigE network card
<b>Required equipment</b>
Works with all* ABB robots with OmniCore and IRC5 robot controllers Engineering, commissioning and maintenance: Windows 10 (64 bit) PC, performance according to RobotStudio recommendation Runtime operation: Windows 10 (64 bit) IPC, 2GHz with recommended 17" 1920x1080 multi-touch screen, minimum one Ethernet port and one free PCI Express slot Unmanaged Ethernet switch (robot network)
<b>Required software</b>
Engineering: RobotStudio 2020 Runtime operation: ABB Ability™ Zenon. Controller software RobotWare 7 and RobotWare 6 Controller options PickMaster Cell Ready/ PickMaster Robot Ready and PickMaster Vision Ready

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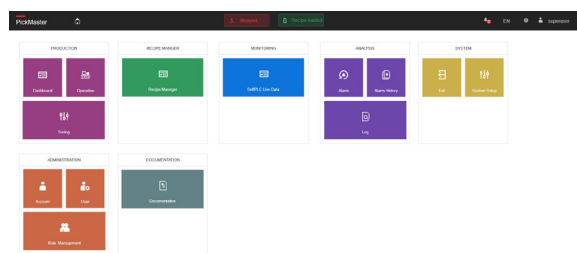
02

01 FlexPicker® in TAGO Confectionery plant in Warsaw, Poland

02 PickMaster® PowerPac

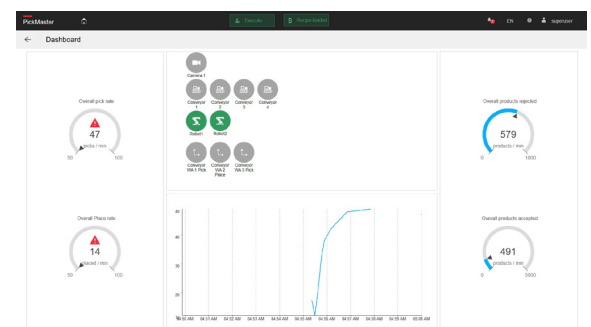
## State-of-the-art user interface

Home screen with windows tile style navigation tiles.



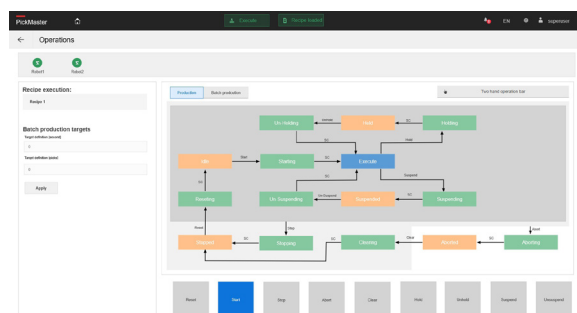
## Production dashboard

The Production dashboard is showing performance trends and status.



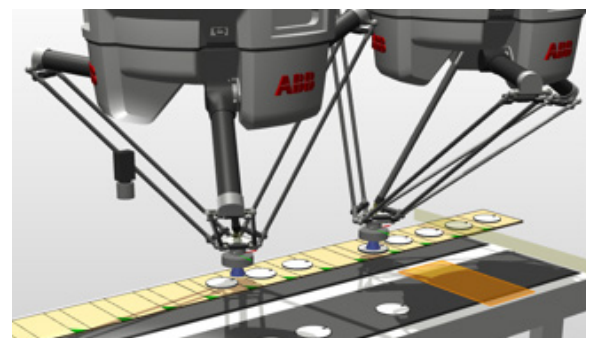
## Operation Screen

PackML state machine with two-handed operation feature.



## Visual tuning

Real time tuning with digital twin technology.



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