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

Vision
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
Supported cameras: Basler Scout and acA series, color and monochrome, global shutter
Offline vision simulation

Conveyor Tracking
Up to 6 Linear or circular variable speed conveyors per robot
Up to 25 indexing work areas per robot
Supports DCQC377B and DSQC2000 conveyor tracking hardware

Flow management/process
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

PowerPac
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

Operator
ABB Ability™ Zenon Scada platform
User Authentication management
Recipe selector
Operations Dashboard
PackML ready
Control and status information for Line PLC through Packtags and Tranparency tags
PackML execution logics
Integrated SoftPLC
Modbus and ProfiNet connectivity
Error Logs and event handling
Process speed indicators with limit values
Runtime Process tuning

Options
Runtime License
GigE Cell kit, max 2 cameras
GigE Line kit, max 10 cameras
Additional GigE network card
Offline vision demo dongle

Technical data

Product content
PickMaster® PowerPac
PickMaster® Operator
PickMaster® Runtime
Vision Hardware

Hardware
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

Required equipment
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)

Required software
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

*Except IRB 14000 dual-arm YuMi®

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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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