Flexxbotics™

Field	Details		
Product Identification			
Family	Modular Application Series		
Product Name	VMC		
Part Number	VMC-4 | VMC-8 | VMC-24		
Machine Configuration Support			
Machines	Vertical Machining Center, Vertical Mills		
Machine Types Supported	3 Axis 4 Axis 5 Axis		
Number of Operations per Robot	1-6 Operations		
Robot Options	FANUC Industrial, Collaborative, Clean Room I Universal Robots Collaborative *(Model Determined by Configuration Requirements)*		
Modular Components			
Automation Console	Integrated HMI with high performance industrial edge device and configurable connections for Safety, Digital I/O, and Pneumatics		
Pedestal	Welded steel robot pedestal anchored to shop floor with precision pins for specified robot		
Precision In-Feed	Tight tolerance industrial precision aluminum shelving rack(s) for repeatable automation 50" X 10" X 62" 1270 mm X 254 mm X 1575 mm		
Pallet Automation System	Precision machined aluminum pallets with Part-to-Pallet workholding, Pallet-to-Robot Coupling, and Pallet-to-Machine workholding		
	Flexible Part-to-Pallet workholding design support Vises, Arbors, Side Clamps and others (ability to use/reuse existing workholding in many cases)		
	Automation optimized Pallet-to-Machine workholding utilizes multiple pneumatic connections to acheive ±0.005 mm repeat accuracy		
	Pallet-to-Robot Coupling's zero point pull down pin includes anti-turn geometry which securly and precisly joins the robot to the full range of pallet sizes with ±0.02 mm repeat accuracy		
End of Arm Tooling with Grip Check	Pneumatic Pallet-to-Robot EOAT clamps the Pallet's zero point pull down pin with ±0.02 mm repeat accuracy		
Parts & Payload			
Pallet Sizes	VMC-4	VMC-8	VMC-24
Max Part Weight	33 lbs (15 kg)	77 lbs (35 kg)	188 lbs (85 kg)
Max Part Size	4" X 4" X 8" (102 x 102 x 203mm)	8'' X 8'' X 8'' (203 x 203 x 203 mm)	24" x 24" x 17" (610 x 610 x 432)
Pallet Capacity	Up to 64 Pallets	Up to 32 Pallets	Up to 10 Pallets
Min Part Size	.25" x .25" x .5" 6.35 mm x 6.35 mm x 12.7mm		
Pallet Placement Repeatability	±0.005 mm		
Post-Process Support			
Cleaning & Finishing	Cleaning Stations, Deburr, Grinders, Polishers, Tapping		
Marking	Laser Markers & Engraving		
Inspection	CMM, Vision, Laser, Telecentric, Probes		
Automation Console Hardware Specs			
Overall Dimensions (L x D x H)	25" x 22" x 55" 635 mm X 559 mm X 1397 mm		
Industrial M12 Connections	16 Dual Channel I/O[1] with 4 position A-Coded M12 Bulkheads		
Safety Control Connections & Indicators	16 Dual Channel Signal ports with 4 position A-Coded M12 Bulkheads		
	16 Dual Channel Enabling Circuits with 4 position A-Coded M12 Bulkheads		
	5 Addtional Dual Channel Sensor Ports with 4 position A-Coded M12 Bulkheads		
	Integrated E-stop and Reset buttons		
	Integrated Red/Yellow/Green Stacklight		
Air Connections	12 Two Position Ports[1] with 10mm push to connect OD Bulkheads		
Air Requirements	100-120 psi		
Power Requirements	120V 15Amps		
Flexxbotics Industrial Edge	Dell Edge Gateway 3200 / 5200		
Internet / Data Connection	10x RJ45, 2x USB-A, Wi-Fi, Bluetooth		
HMI User Interface			
Touch Screen (L x W)	18.7 x 11.7" (474 x 296 mm)		
Resolution	WSXGA+ (1680 x 1050 @ 60Hz)		
Aspect Ratio	16:10		
Software			
Flexxbotics Software Included	Robotic Production Software featuring FlexxCore		
Flexxbotics Software Capabilities Summary	Robotic Cell Automation Robot-to-Machine Interfacing Robot / Equipment Program Control Robotic Production Data Alarms & Escalations Automated Changeover Autonomous Process Control Analytics, Reports, and Business Intelligence Administration & Low-code Configuration (Functionality determined by Package Edition purchased)		
Operating System Configurations	Windows 10/11 IOT (w/ Software-based RTOS Capability), Ubuntu		
Connectivity & Communication			
Machine Control Compatibiltiy	FANUC, Okuma, Mazak, DMG MORI, Haas, Makino, Doosan, Mitsubishi, HEIDENHAIN, and others Check compatibility at https://flexxbotics.com/flexxbotics-compatibility/		

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Industrial Protocol Support	EtherNet/IP, PROFINET/PROFIBUS, Siemens SINUMERIK, Modbus TCP, OPC UA, MTConnect, FOCAS2, Heidenhain DNC, Haas MNET, CC-Link, DeviceNet, Modbus RTU, Ethernet POWERLINK, EtherCAT, and others
General Protocol Support	TCP/IP, UDP, FTP, SFTP, Telnet, SMTP, RS-232, and others
Business Systems Connectivity	Extends Existing Systems for Robotic Automation including ERP, MES, QMS, SCADA, IIoT, CAD/CAM, and others
Feature & Functionality Details	
Robotic Cell Automation	Loading and Unloading Parts Cell Control Logic Configurable Rules and Conditionals
Robot-to-Machine Interfacing	Start/End Cycle Controller Protocol Interoperability G-Code / M-Code / Macro Updating and Parameter Writing
Tooling Automation	Tool Breakage Detection & Swapping Tool Wear Monitoring Auto-Tool Compensation
Alarms & Escalations	Stack Light Signals Operator HMI Alarms Text/Email Escalation Option
HMI Screens & Workflows	Single Button Operator Screens Barcode Scanning & Step-by-Step Workflows Flexible Part Set-up Interface for Adding New Parts
Automated Changeover	Run Multiple Parts / Units with Auto-Changeover
Safety	Compatible with Safety PLC's, Emergency Stops, Laser Scanners, Light Curtains, and more
Compliance & Traceability	Part-by-Part Production Data Capture for Digital Thread Traceability and Quality Standards Compliance (ISO-13485, AS9100, CGMP, and others)
Reports & Analytics	Production Progress, Part Count, Cycle Times, Throughput, Utilization, Yield, Unattended Time, and more
Administration & Configuration	UX Screen Layout, Button Configuration, Parts Attribute Definition, Modifiable Logic & Triggers, and more

[1] Expandable

Flexxbotics™

Offices: Boston, MA 02210 & Detroit, MI 48127

Support Coverage: All USA & Canada

Phone: (877)-456-1576

Email: info@flexxbotics.com