

Scalable Machine Solutions

confidence

presence

assurance

competence

When we say it works,
...IT WORKS !

omron

Turning ideas into machines that work...

With over 50,000 buying machine builders world-wide - 4,500 in the Americas - and 50 years experience in machine automation, we particularly pride ourselves in helping these companies turn their dreams into reality... world class machines. Because when we say it works, IT WORKS!

This statement embodies our core values of supporting you with competent and experienced people, quality products that work in conditions far beyond their published specifications and always maintaining our commitment to you the customer.

We are successful because we provide solutions based on our customers needs, whether that solution is used in a fixed form through to a highly flexible machine.

We believe this is a solid base to start turning YOUR IDEAS into MACHINES THAT WORK.

Lean Automation



Lean Automation

Dedicated for One machine/One function. Simple, compact and easy to use and maintain solution.

- Rugged and robust PLC control
- Up to 4 axes of point-to-point motion
- HMI, servo and AC drives included
- Remote access to the controller
- One software for all automation tasks

Mainstream Automation



Mainstream Automation

Dedicated for fast and flexible flow-automation. By introducing network connectivity the system can be configured in a highly flexible manner, and provides a single access point to the whole machine.

- Motion bus: Up to 30 axes of motion
- One software for all automation tasks
- Active visualization with smart functionality and integrated web interface for device monitoring and configuration
- Remote access across all the automation layers
- Safety Network Control is available from Omron STI



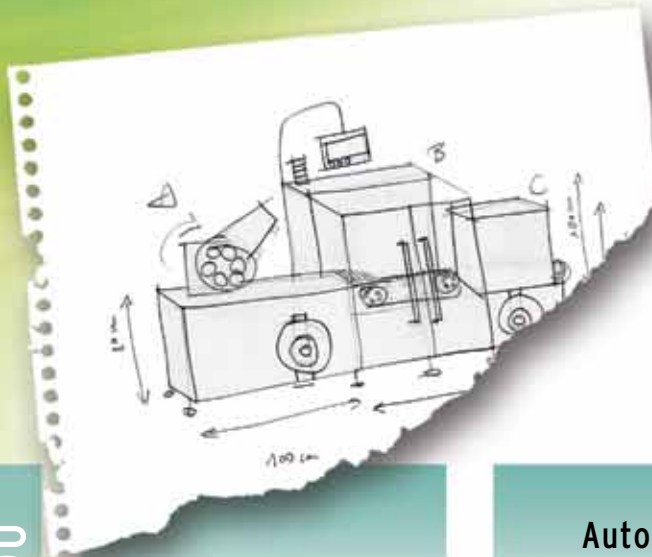
X-Stream Automation

It is dedicated for flexible production cells. It has as core "Mainstream Automation" with faster controllers and motion networks. It includes vision systems and machine SCADA.

- 64 axes motion control in less than 4 ms
- Industrial PC (NSA) for visualization and data storage with 24/7 reliability
- Real color with high resolution and high speed inspection capabilities
- One software for all automation tasks

When we say it works, ...IT WORKS.

Products and concepts alone are never enough, this is why we are going to be with you at every stage, helping you to create faster, smarter and cost effective machines



from your first idea,

YOU

First Idea

Automation Architecture

Proof of Concept

COMPETENCE

OMRON

Sales engineer



Share your ideas with our salesmen. They have the experience and competence, and are empowered to make decisions. Thousands of OEM's have put their trust in them to date.

Application engineer



As soon as our involvement starts, an application engineer is appointed to coordinate all of the technical aspects of the project. The primary purpose is to verify the machine automation architecture aligns to your technical and business needs.

Product specialist

Before embarking on costly developments, our application and technology specialists demonstrate proof of concept. They solve complex communications and ensure your application is error-free.



...to your final machine!

Design & Development

Field Testing

Full Scale Production

CONFIDENCE

ASSURANCE

Customer Service

Liaison engineer

Post-sale support



As your development begins, our Customer Service support ensures accurate ordering and delivery coordination, offering you peace of mind.

As a global service provider we offer support where you are installing machines, there on hand to help with technical and logistic support, including continuous training support for your customers.

Our support does not end at pre-sale application engineering. OMRON provides a comprehensive set of post-sale support services, including:

- Commissioning/Startup
- Field maintenance & troubleshooting
- Telephone technical support - Free
- Warranty repair
- Replacement parts
- Training
- Product operation/automation optimization



OMRON Automation Competence Centers and technical offices across the World

- Automation Competence Center
- Application Engineer
- Channel Partner

A global company that refuses to be big

Omron recognizes that bigger is not always better for you when it comes to delivering the personal, responsive support that ensures the success of automation projects.

We offer support where your machines will be used and provide local parts and technical services to keep them operating.

In the Americas, a comprehensive network of distributors provide the first line of Omron support. Regional and national technical support centers deliver advanced services.



Description

Addresses small and compact machines performing one dedicated task. It can fit into stand-alone machines or modules within a larger machine. Its merit lies in its simplicity, compactness and cost performance.

Your benefits

- » Cost effective solution without compromising on quality and performance
- » Simplicity of programming and wiring
- » Space saving thanks to ultra-compact product designs and side-by-side mounting of AC drives
- » Remote diagnostics with optional Ethernet or RS-485 interface
- » State of the art color HMI
- » One software for all automation tasks

Key Features

Compact, fast and rugged automation (CP1 series)

- » Compact PLC with up to 40 built-in and 320 expandable local I/O
- » Control of up to 4 servo axes via 100kHz pulse output
- » 20Ksteps program capacity
- » 4 high speed counters (100kHz)
- » USB port for easy programming

Motion control capability

- » Modbus RS-485 port or analog output to AC drives (3G3JX)
- » General motion commands for point-to-point positioning

Temperature regulation

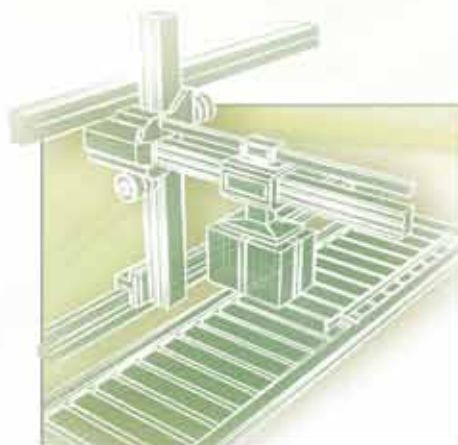
- » PLC based built-in PID commands
- » Panel mounted, one-touch tune temperature controllers

HMI

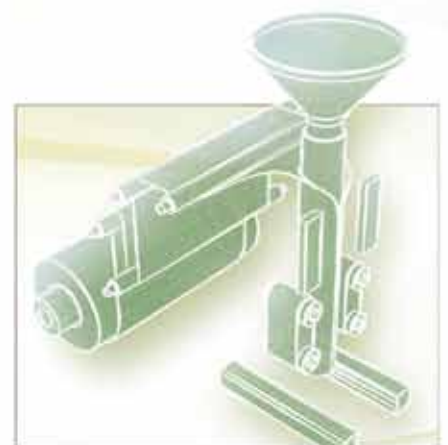
- » 3" and 5" touch panels (NV series)
- » 256 colors with STN technology
- » 50,000hr backlight lifetime

Servicing

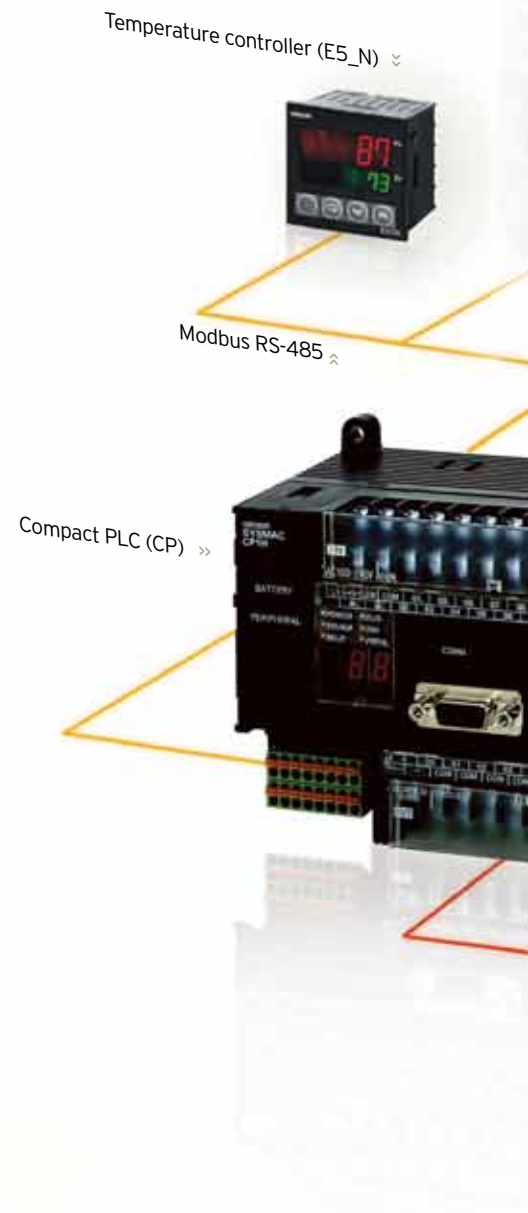
- » Remote servicing can be performed at the controller level via intranet or Internet



⊗ Palletizer



⊗ Non-continuous Form, Fill and Seal





AC drives (3G3JX) ∨

∨ Servo motors (R88M-G)

∪ Servo drives (Smartstep2/R7D-B)

Pulse control ∨

Visualization (NV HMI) ∨

∧ Serial communication

∧ Conveyor diverter

Single head labelling ∧

Description

Aimed at flexible and high speed continuous automation, it relies on "all-digital" connectivity across all layers. Essential functions like control, motion, regulation and safety are handled through one software and all devices are accessed via a single point. This integrated approach allows easy programming and full remote servicing down to the field device level.

Your benefits

- » Highly flexible machines thanks to an all digital motion control platform
- » Compact machines due to side by side mounting of ultra-slim servo and AC drives
- » Rugged, reliable and fast control
- » One software and one connection allow full machine management

Key Features

Integrated automation architecture

- » One software (CX-One) for configuration, programming and visualization
- » 4 programming languages: ladder, ST, SFC and FB
- » Serviceability: one access point to all devices, locally or via intranet or Internet

Advanced motion control (MC*)

- » Point-to-point or advanced motion control
- » Camming & gearing
- » Up to 30 axes of control in less than 4 ms

Modular multi-loop temperature control

- » Up to 250 loops
- » Fastest and most accurate control in the market

Safety control

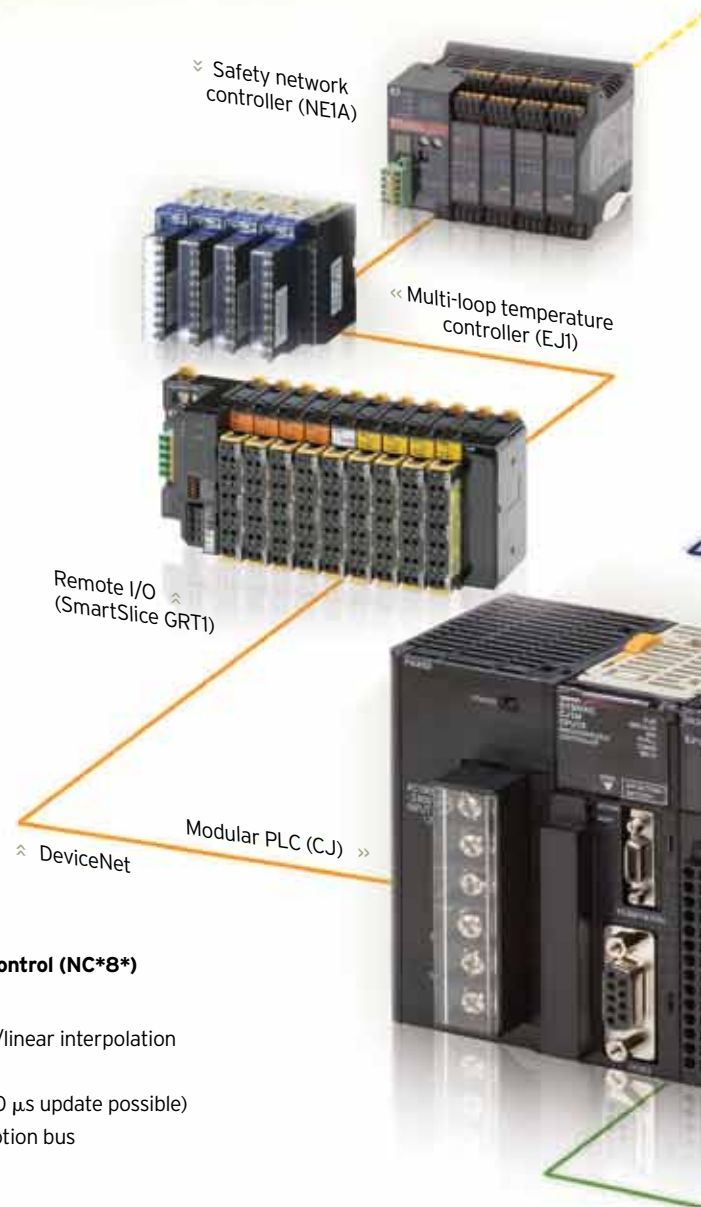
- » Safety category 3 in servo and AC drives as standard
- » Modular safety network controller (NE1A)
- » Safety control available from Omron STI

Open automation

- » Robust and reliable PLC based control: 30 years or longer MTBF is typical for PLCs
- » Open: supports master and slave units for EtherNet/IP, DeviceNet, Modbus, Profibus, Profinet, CAN, and CompoNet
- » SmartSlice I/O with built-in diagnostics

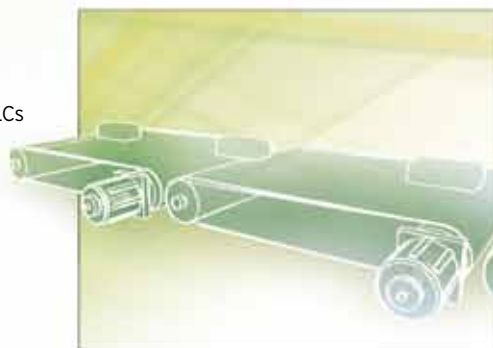
Visualization

- » HMI: from 5.7 to 15" TFT screen
- » Integrated Web interface

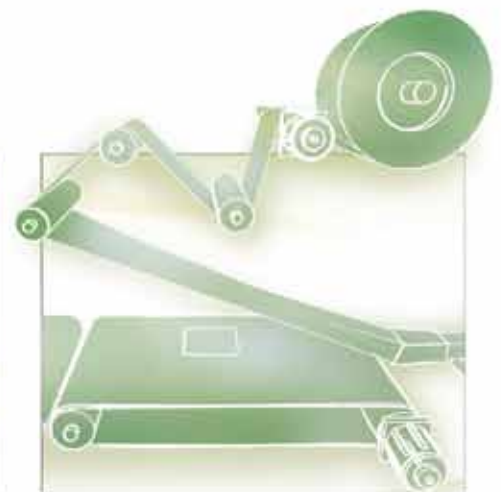


Performance position control (NC*8*)

- » Low tact time
- » Point-to-point or circular/linear interpolation
- » Up to 16 axes in 2ms
- » Zone output control (500 μs update possible)
- » High-speed EtherCAT motion bus



» Main conveyor



» Film feeder

≈ Servo drives (R88D-K)

≈ Servo motors (R88M-K)

≈ AC drives (3G3MX2)

≈ Motion network - EtherCAT or MECHATROLINK-II

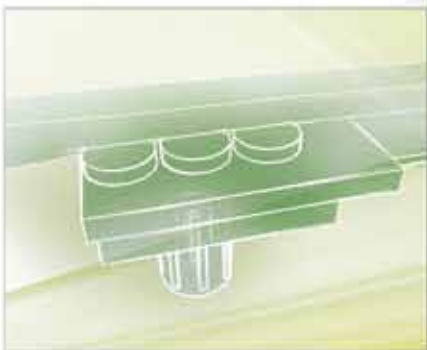
EtherCAT

≈ HMI (NS series)

MC* or NC*8*

≈ EtherNet/IP

EtherNet/IP



≈ Longitudinal sealer



Sealing knife ≈

Description

X-Stream Automation is dedicated for complete production cell control. It offers the highest machine performance levels based on ONE machine controller, an ultra-fast Ethernet based Fieldbus, an IPC based HMI and the integration of vision and robotics as key elements in the automation solution. Above all, it is about your people and our people engaging in ONE common challenge: creating extreme machines!

Your benefits

- » A single source supplier of products and expertise
- » Faster machines utilizing leading edge controller, servo and network products
- » Compact machines through the use of the latest design drives, robots and digital networks
- » Integrated Vision and inspection capability
- » One Software (CX-One) for configuration, programming and visualization

Key Features

Machine control (Trajexia TJ2-MC64)

- » One machine controller: Provides PLC and motion functionality under the IEC61131-3 programming standard
- » 64-bit microprocessor allows for fast and highly accurate control. Suitable for kinematics and robotics functions
- » Up to 64 axes of synchronized motion (32 axes in 1 ms)

Network (Ethernet based)

- » EtherCAT for motion and field devices
- » EtherNet/IP for factory level communication

Visualization (Industrial PC)

- » Industrialized design with no moving parts for 24/7 reliability
- » CX-Supervisor easily installed to manage your machine

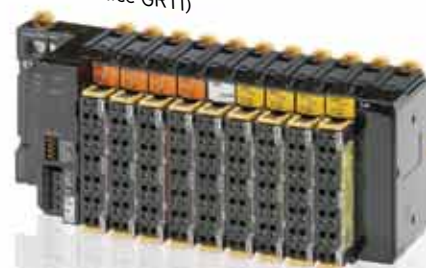
Quality inspection (FZ3)

- » PC based inspections
- » Ethernet & EtherNET/IP capabilities

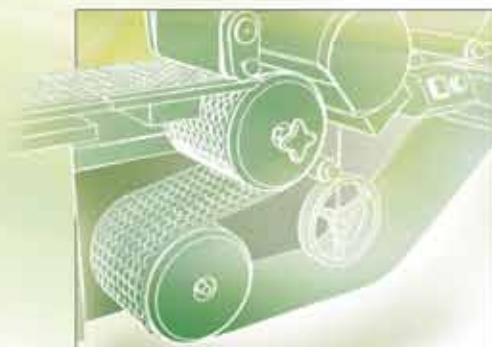
Quality inspection (FZM1)

- » High-speed PC based inspection
- » Expanded Edge Code inspections
- » EtherCAT communications

Remote Motion I/O
(SmartSlice GRT1)



EtherNet/IP



» Blister Packaging Machines



» Filling and capping

R88M-K servo motors

R88D-K servo drives

AC drives (3G3RX)

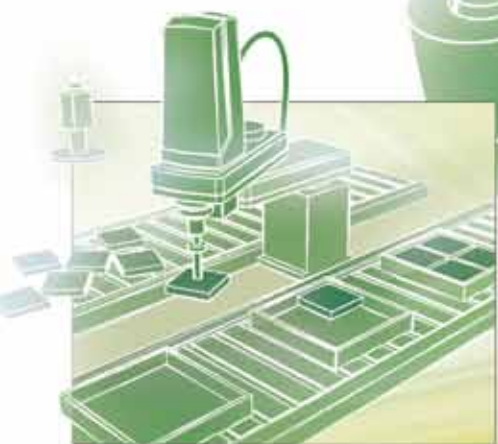
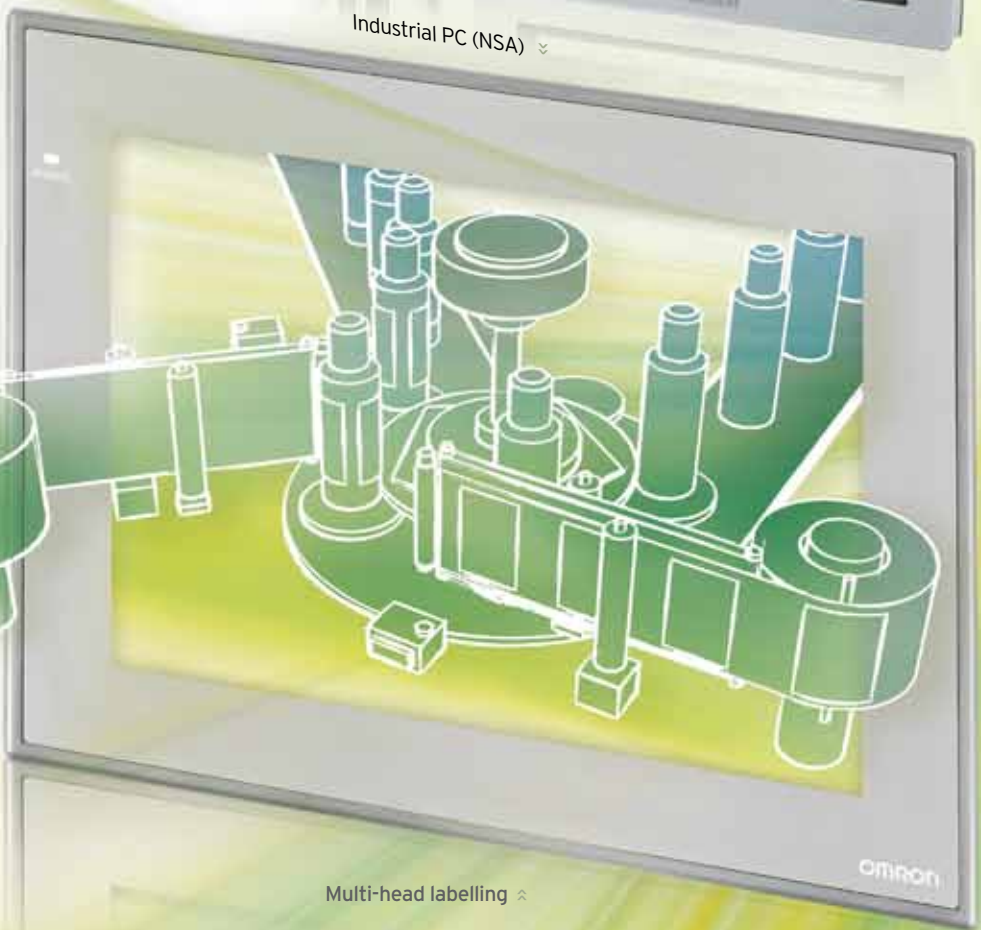
EtherCAT



Dedicated vision system (FZ3)

Trajexia Machine Controller

Industrial PC (NSA)



Pick & Place with robot

Multi-head labelling

Product features at a glance Scalable Machine Automation

X-Stream Automation

Machine Control

Trajexia machine controller (TJ1/TJ2)



- From 4 to 64 axes
- EtherCAT, MECHATROLINK-II Motion Bus
- Complex interpolation moves, e-cams and e-gearboxes
- Serial, EtherNet/IP (Built-in)
- DeviceNet, Profibus, CANopen
- IEC 61131 language support

Visualization

NSA Industrial PC



- Industrial-grade 600 MHz or 1.3 GHz Intel Celeron CPU
- No HDD, silicon storage up to 8GB
- Fan-less heat sink cooling for enhanced 24/7 reliability
- Independent RAS to overcome OS failure or application freeze

Servo drives

G5 EtherCAT servo drive (R88D-K)



- Power range from 50 W to 15 kW
- Embedded safety (STO, SIL2)
- Advanced vibration suppression functions
- Servo motors with IP67 protection and low torque cogging (R88M-K)

AC drives

3G3RX AC drives



- Closed and open loop vector control
- Closed loop starting torque: 200% at 0.3 Hz
- 230 V and 460 V models fractional to 200 HP
- IM motor control
- Built-in EMC filter for 3-phase unit

Mainstream Automation

CJ PLC (CJ2M, CJ2H)



- 4, 30-axis Trajexia motion control unit on MECHATROLINK-II
- 2, 4, 8, 16 axis NC*8 position control unit on EtherCAT
- Up to 2560 local I/O
- Serial, Modbus, EtherNet/IP, DeviceNet, Profibus, Profinet, CAN, CompoNet
- IEC 61131 tag-based programming

NS HMI



- From 5.7 up to 15 inch TFT/CFT or LED
- Up to 1024 x 768 pixels resolution
- Trending and data logging
- Ladder Monitor & PLC Data Trace function
- Smart Active Parts library for diagnostics and troubleshooting
- Ethernet / EtherNET/IP available

G5 MECHATROLINK-II drive (R88D-K)



- Power range from 50 W to 15 kW
- Embedded safety (STO, SIL2)
- Advanced vibration suppression functions
- Servo motors with IP67 protection and low torque cogging (R88M-G)

3G3MX2 AC drives



- Embedded safety (STO, SIL2)
- Current vector control
- 200% starting torque @ 0.3 Hz
- IM motor control
- 230 V and 460 V fractional to 10 HP
- Flowchart programming and simple positioning

Lean Automation

CP PLC (CPIL, CPIH)



- 4-axis point-to-point motion control with 100 MHz pulse output
- Up to 320 local I/O
- Serial, Modbus, EtherNet/IP, DeviceNet, Profibus, Profinet, CAN, CompoNet

NV HMI



- 3.1", 3.6" and 4.6" STN LED
- 320 x 240 pixel resolution
- RS-232C, RS-422A/RS-485, USB Slave, option port
- Multi-vendor PLC support

SmartStep 2 (R7D-B) servo drive



- Pulse control
- High resolution (10,000 p/rev) with feedback output
- Compact servo motors (R88M-G)
- Available up to 400 W

3G3JX AC drives



- Side by side mounting
- Built-in EMC filter and RS-485 Modbus
- Overload detection function
- Second motor setting
- 230 V and 460 V fractional to 10 HP

Visit www.omron247.com for information using the product family numbers.

**Remote I/O,
safety and regulation**

SmartSlice distributed I/O (GRT1)



- Diagnostics in every I/O unit
- Supports a wide range of networks
- Detachable terminal blocks
- Hot-swapping
- Up to 64 I/O units
- Available on EtherCAT for Trajexia only

Total solutions for industrial safety



- Safety light curtains
- Safety relay units
- Safety switches
- Emergency stop buttons
- Safety Network Controller
- Safety products supported by Omron STI

**Regulation solutions
(E5CN, E5J1)**



- From single loop to modular multi-channel temperature and process controllers
- Handles voltage, mA, Pt and Thermocouple inputs
- Gradient and 2 PID control
- Modbus RTU, Profibus, DeviceNet

Machine Vision

**Dedicated vision systems
(FZ3, ZFM1)**

FZ3

- High resolution cameras: 5 million pixels
- Touch-screen for easy operation
- Fastest true-color image processing engine
- 2- and 4-camera inspection capability

FZM1

- High-speed cameras up to 204 fps
- EtherCAT communication interface
- Edge Code Inspection tools
- 2-camera capability



Software tools

CX-One is the complete machine automation software.

Key points are:

- One software for control, visualization and general motion coordination
- One instruction set across all PLC's
- Off-line machine simulation for control and visualization, speeding development
- Rich software modules library for robotics, kinematics and vision coordination (SAP)
- Simple drag-and-drop device connections and pre-programmed function blocks shorten programming time
- Automatic updates from Internet



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Authorized Distributor:

Automation Systems

- Programmable logic controllers (PLC) • Human machine interfaces (HMI) • Remote I/O
- Industrial PC's • Software

Motion & Drives

- Motion controllers • Servo systems • AC drives

Control Components

- Temperature controllers • Power supplies • Timers • Counters • Programmable relays
- Digital panel indicators • Electromechanical relays • Monitoring products • Solid-state relays
- Limit switches • Pushbutton switches • Low voltage switch gear

Sensing & Safety

- Photoelectric sensors • Inductive sensors • Capacitive & pressure sensors
- Cable connectors • Displacement & width-measuring sensors • Vision systems
- Safety networks • Safety sensors • Safety units/relay units • Safety door/guard lock switches