

One Stop Solutions for Machines

Industry Selection Guide

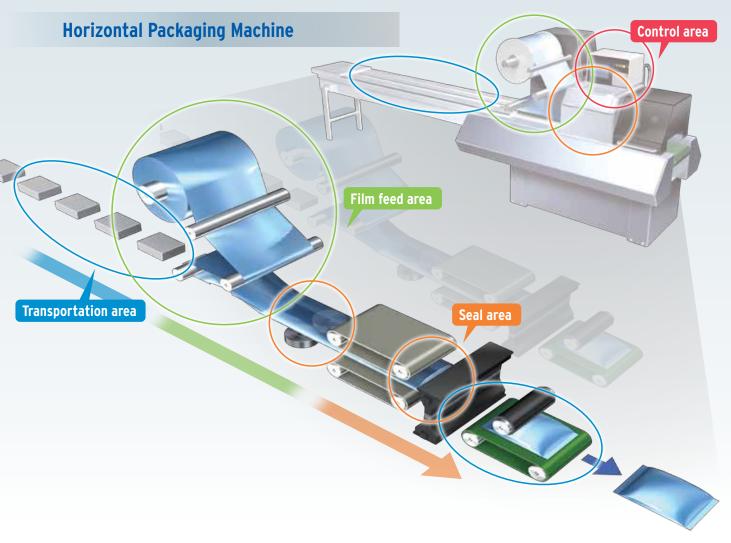


» Innovative Technologies» Easy to Use, Install and Integrate» Powerful Solutions

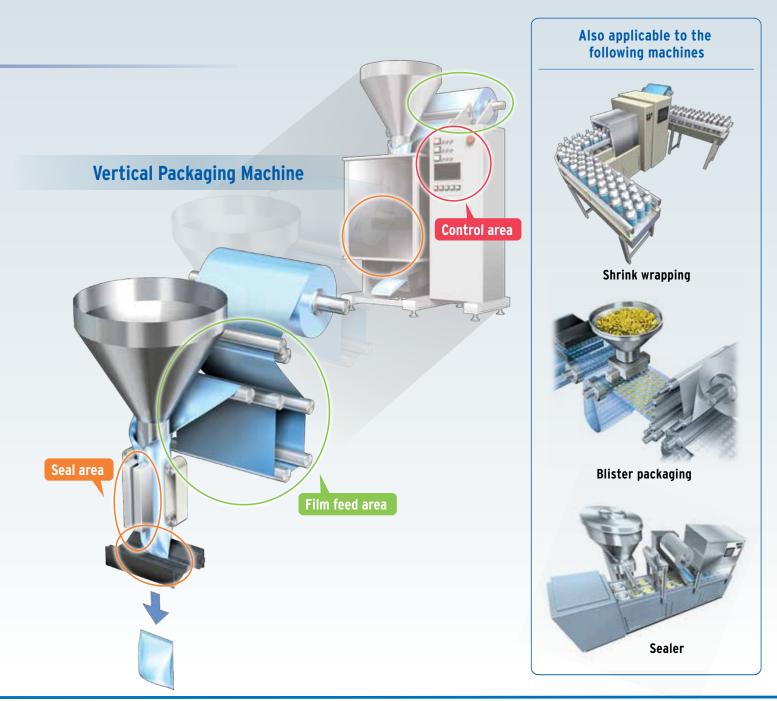
Solutions for the Evolution of Machines

High Quality, Wide Product Line-up & Global Support

Omron's control devices promise better efficiency by improving the speed and precision of numerous machine applications.











Transportation/Material Feed Area



Detection of Product Passage

Photoelectric Sensors

→ Target Presence





E3Z **Compact Sensor with Built-in Amplifier** Global standard size.



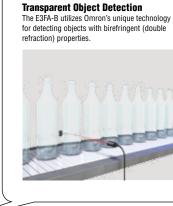
opecifications		
Size	:	31 * 20 * 10.8mm
Sensing distance	:	Through beam 10M, 15M, 30M
		Retro reflective 4M
		Diffuse reflective 100mm, 1M, 90±30mm
Power supply voltage	:	DC12-24V
Control output	:	PNP/NPN
Connection	:	Pre-wire, Connector (M8 & M12)

E3FA All-Application Series

High power LED to compensate for dirt and misalignment.



Specifications CE : M18 Size : Through beam 20M Retro reflective 0.5M/4M Sensing distance Diffuse reflective 100mm/300mm/1000mm Power supply voltage Control output DC10-30V : PNP/NPN Connection : Pre-wire, Connector



E3RA **All-Application Series**

E3FA

Radial, 90 degree design for applications in tighter spaces.



: M18 : Through beam 15M Retro reflective 3M Sensing distance Diffuse reflective 100mm/300mm/700mm Power supply voltage Control output DC10-30V : PNP/NPN Connection : Pre-wire, Connector

Stable Detection of Transparent Targets



Fiber Sensors → Adapted for Small Targets



E3ZM-B Excellent PET Bottle Detection

Use of a special polarizing filter for the stable detection of transparent objects.



31 * 20 * 10.8 mm 500mm (w/E39-RP1) : PNP/NPN

CE

Sensing Distance

: PNP/NPN

· Maintenance-free operation by compensating for harsh environments and LED degradation over time.



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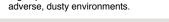
Specifications

Size Sensing Distance Power supply voltage : DC10-30V Control output



E3X-HD

Easy-To-Use Fiber Amplifier High-speed and stable detection even in





Specifications Power supply voltage : DC12-24V : PNP/NPN Control output Response speed : 50µs



E3ZM **Stainless Steel Housing Ideal for Food Industry** IP69K for frequent machine wash down.

Size



Specifications

Size

Control output

CE



Detection of Positioning and Operation Timing





Inductive Proximity Sensors



Premium series for long distance detection Wide variety of extended range cylindrical proximity sensors.



Specifications

Size

Sensing distance Power supply voltage : DC 12-24V Control output . Connection

: M8/M12/M18/M30 4mm/8mm/16mm/30mm DC3wire, PNP/NPN Pre-wire, Connector

Rotary Encoders



Incremental 40-mm-dia. General purpose compact encoders.



Specifications Size : Ø 40 * 39 mm Shaft Ø 6 mm : DC5V, DC5-12V Power supply voltage DC5-24V, DC12-24V Resolution : 10-2,000P/R

CE

Premium series for tough environments For harsh, oily environments.

E2E



Specifications	CE
Size Sensing distance	: M8/M12/M18/M30, others : DC2wire 2mm/3mm/7mm/10mm
Power supply voltage Control output Connection	DC3wire 1.5mm/2mm/5mm/10mm : DC12-24V : DC3Wire/DC2wire, PNP/NPN : Pre-wire, Connector



Rugged and easy-to-use.



operintations		
Size	:	Ø 50 * 40 mm
Shaft	:	Ø6 mm
Power supply voltage	:	DC5V, DC5-12V
		DC5-24V, DC12-24V
Resolution	:	10-2,000P/R

Detection of Material

Capacitive Proximity Sensors



Conveyor Speed Control

Inverters



E2K-X Low Cost type

Non-adjustment type with fixed sensitivity. Ability to detect water, oil, etc.



: Ø 12, 18, 30 Size Sensing distance 4, 8, 15mm Power supply voltage Control output : DC 12-24V NPN Connection : Pre-wire

> **JX** Series Simple, Compact Inverters

Specifications

V/f control

Side-by-side mounting

Built-in radio noise filter

(Excluding single-phase/three-phase 200-V models)





DC 12-24V Power supply voltage Control output PNP/NPN Connection Pre-wire

MX2 Series Multi-function Compact Inverters with a wide range of capacity variation



Specifications · Control : Simple position control with pulse feed-back function (standard feature) • High Starting torque : 200% at 0.5 Hz

Film Feed Area



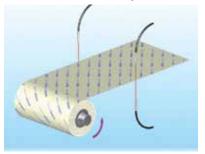
Detection of sheets and films



Detection of the remainder of a sheet roll



Detection of sheet skewing



Photoelectric Sensors

→ Target Presence

E3Z

Compact Sensor with Built-in Amplifier Global standard size.



Specifications

Size	:	31 * 20 * 10.8mm
Sensing distance	:	Through beam 10M, 15M, 30M
		Retro reflective 4M
		Diffuse reflective 100mm, 1M, 90±30mm
Power supply voltage	:	DC12-24V
Control output	:	PNP/NPN
Connection	:	Pre-wire, Connector (M8 & M12)

CE

E3FA All-Application Series

High power LED to compensate for dirt and misalignment.



· ·		
Size	:	M18
Sensing distance	:	Through beam 20M
		Retro reflective 0.5M/4M
		Diffuse reflective 100mm/300mm/1000mm
Power supply voltage	:	DC10-30V
Control output	:	PNP/NPN
Connection	:	Pre-wire, Connector

E3FA

Transparent Object Detection The E3FA-B utilizes Omron's unique technology for detecting objects with birefringent (double refraction) properties.



E3RA

Specifications

All-Application Series

Radial, 90 degree design for applications in tighter spaces.

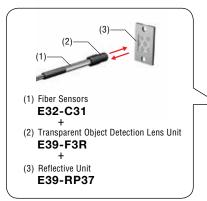


CE

Size : M18 : Through beam 15M Sensing distance Retro reflective 3M Diffuse reflective 100mm/300mm/700mm Power supply voltage : DC10-30V PNP/NPN Control output Connection : Pre-wire, Connector

Fiber Sensors

→ Highly Accurate Detection



E3X-HD Easy-To-Use Fiber Amplifier Use fibers with a special polarizing filter for the highly stable detection of transparent film!



Specifications Power supply voltage : DC12-24V Control output PNP/NPN 50us Response speed

Increased CE Ranges!

Photoelectric Sensors

→ Detection of Transparent Sheets



Specifications

Size

· Use of a special polarizing filter for the stable detection of a transparent object.



: 31 * 20 * 10.8 mm Sensing Distance : 500mm (w/E39-RP1) Power supply voltage : DC10-30V Control output : PNP/NPN

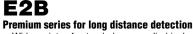
CE

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Detection of Sheet / Film Sag

Inductive Proximity Sensors





Wide variety of extended range cylindrical proximity sensors.



CE

 Specifications

 Size
 : M8/M12/M18/M30

 Sensing distance
 : 4mm/8mm/16mm/30mm

 Power supply voltage
 : DC12-24V

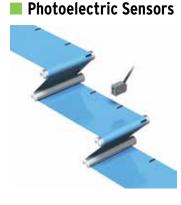
 Control output
 : DC3wire, PNP/NPN

 Connection
 : Pre-wire, Connector

E2E Premium series for tough environments • For harsh, oily environments. • Output of the series of the series

Size Sensing distance	: M8/M12/M18/M30, others : DC2wire 2mm/3mm/7mm/10mm DC3wire 1.5mm/2mm/5mm/10mm
Power supply voltage Control output Connection	

Detection of Register Marks / Detection of Sheet Seam



Fiber Sensors

→ All-round Use



Size : 31 * 20 * 10.8 mm Sensing Distance : 12±2mm Power supply voltage : DC10-30V Control output : PNP/NPN

→ Compact Amplifier

E3X-HD Simple Fiber Amplifier • Quick-tuning to automatically adjust light level and set threshold value.



Specifications Power supply voltage : DC12-24V Control output : PNP/NPN

Increased Ranges! E32 Wide variety of fiber unit designs and applications to select from FlatThreaded FlatCylindrical Sleeved

→ Sheet Flapping

E3X-DAC-S Color Sensing Digital Fiber Sensor • High resistance to target vibration and white LED for stable detection of all colors.

Specifications
Power supply voltage : DC12-24V
Control output : PNP/NPN

CE

Conveyor Speed Control

Inverters



JX Series Simple, Compact Inverters



Specifications • Side-by-side mounting • V/f control • Built-in radio noise filter

(Excluding single-phase/three-phase 200-V models)

MX2 Series Multi-function Compact Inverters with a wide range of capacity variation

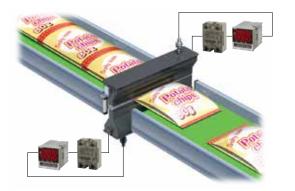


 Specifications
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 • Control : Simple position control with pulse feed-back function (standard feature)
 • High Starting torque : 200% at 0.5 Hz

Temperature Control in Seal Area





Temperature Sensor (General purpose Models)

E52

A Great Variety of High-precision

Temperature Sensors.



Temperature Controllers



E5CC (48×48mm) / E5EC (48×96mm)



Specifications

Sensor Input

Analog input

Control output

: Thermocouple Platinum resistance thermometer Infrared temperature sensor : Current input 4 to 20 mA or 0 to 20 mA

Power supply voltage : 100 to 240 VAC 24 VAC / 24 VDC Voltage input 1 to 5 V, 0 to 5 V, or 0 to 10 V : Relay output / Voltage output (for driving SSR)

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- The white LCD display is easy to read in the subdued lighting conditions found in most control rooms.
- PV Display Height E5CC 15.2 mm E5EC 18 mm --



Solid State Relays **G3NE**

Compact, Low-cost, SSR switching 5 to 20A.



Specifications

Rated input Voltage : 5, 12, 24 VDC Rated load Voltage : 100 to 240 VAC Load Current Isolation method

with radiator 0.1 to 20A without radiator 0.1 to 5A : Phototriac coupler Zerocross function : Yes

G3NA Wide variety of applicable loads from 5 to 90 A.



Specifications	₽J @ ≙ (€
Power Supply Voltage :	
	100 to 240VAC
Rated load voltage :	24 to 240 VAC
	200 to 480 VAC
	400 to 600 VAC
	(G3NA-D210B 5 to 200VDC)
Rated current :	(With radiator)
	~Max Value : ~5A/~10A/~20A/~40A
	~50A/~75A/~90A
Isolation method :	Phototriac coupler or photocoupler
Zero-cross function :	Yes

G3PE

SSR integrated with radiator in a compact, slim model for switching heaters.



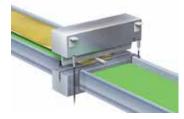
Specifications Power Supply Voltage : 12 to 24 VDC Rated load voltage Rated current Isolation method Zero-cross function

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100 to 240 VAC/200 to 480 VAC ~Max Value : ~15A/~25A/~35A/~45A Phototriac coupler : Yes/No

Detect Workpiece Engagement

Inductive Proximity Sensors







Specifications

Size

M8/M12/M18/M30 Sensing distance : 4mm/8mm/16mm/30mm Power supply voltage : DC12-24V DC3wire, PNP/NPN **Control output** Connection Pre-wire, Connector

E2E

Premium series for tough environments

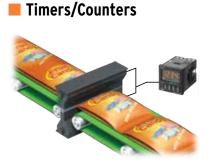
For harsh, oily environments.



Specifications

Size Sensing distance		M8/M12/M18/M30, others DC2wire 2mm/3mm/7mm/10mm DC3wire 1.5mm/2mm/5mm/10mm
Power supply voltage Control output Connection	:	DC12-24V DC3Wire/DC2wire, PNP/NPN Pre-wire, Connector

Control of Heat Seal Time



H5CX High Visibility, 12mm-high color display.



Specifications Multifunction timer Timer and twin timer in one unit Time Range: 0.001s to 9999H Short body with depth of only 59 mm (for 24-VAC / 12 to 24-VDC Models with Screw Terminals). The present value display characters can be switched between red, green, and orange. 15 output mode

H3CR

Time range and selectable output mode.



Specifications

Time range Power supply voltage Output

Other models		
Twin Timer	:	H3
Star-delta Timer	:	H3
Power OFF-Delay Timer	:	H3
Multi Function	•	H3

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Multiple ranges between 0.05 s to 300 h 220VAC/110VAC/24VDC Time-limit DPDT or time-limit SPDT + instantaneous SPDT

3CB-F

- 3CR-G 3CR-H
- 3CR-A

Counting in Fixed-size Cutting

Counters



H7CX High Visibility, 12mm-high color display.



Specifications (€ :⊕us :¶Jus @ Preset counter, tachometer, and 4 other functions in one Unit. Counting speed: 30 Hz or 5 kHz Increment, decrement, or increment/decrement operation Multifunction Preset counter, tachometer and 4 other functions in one unit Counting speed: 30Hz or 5 kHz

Increment, decrement, or increment/decrement operation The present value display characters can be switched between red, green, and orange.

H7CX **Complete Tachometer Functionality** 1) One-input measurement Measurement operation with one input. Select the HI-LO, AREA, HI-HI, or LO-LO output mode. Independent Measurement for Two Inputs. Measurement operation with two independent inputs. Upper limit Lower limit 3) Differential Input for Two Inputs. Measuring the difference between two inputs (CP1 - CP2). Upper limit Lower limit CP1 4) Absolute Ratio for Two Inputs. Measuring the ratio between two inputs (CP1/CP2).

Control Area





Automation Software

Software Suites

Sysmac Studio

True Integrated Development Environment and suite for the Sysmac NJ platform, including configuration and programming for logic, motion, vision, safety, robotics, enterprise, and HMI.



Specifications

CJ2

Analog expansion.

Part #

05 Controllers

- : SYSMAC-STUDIO-1USER 1-User License and DVD (other license levels available) : Windows: XP, Vista, 7, 8
- Sysmac NJ Controller, and associated products

· High performance, rack-free, modular PLC. · Integrated EtherNet/IP available.

Extensive motion communication and

CX-One

The CX-One software suite allows users to build, configure and program PLCs, HMIs, Temperature Controllers, Motion & Networks.



Specifications

Part #	: CXONE-AL01D-V4
	1-User License and DVD
	(other license levels available)
05	: Windows: XP, Vista, 7, 8
Controllers	: CJ2 and CP1E/L/H PLCs and
	associated products

Powerful & Flexible Control

MAC Machine Automation Controller PLC

NJ

- · Industry leading integrated controller with rack-free modular expansion.
- Logic, motion, vision, safety, robotics, and enterprise in one.
- Built-in EtherNet/IP and EtherCAT.
- Tag based architecture



Specifications Power Supply **Program Capacity**

Built-in

Maximum I/O

(€ ₀⊕₀₀ ∰ · 24VDC 100 to 240VAC : 5MB, 20MB

: USB, EtherCAT, EtherNet/IP Communications Ports : 2,560

Vibrant & Clear Display

Operator Interface Terminals

Value displays from 3.5 to 10.1 inch.

with class leading color, brightness, and longevity, as well as timesaving

maintenance/troubleshooting options.

Feature-rich standard interface

NB Series

Specifications

Screen sizes

Specifications Power Supply · 24VDC 100 to 240 VAC : 5K to 60K Steps, 50K to 400K Steps **Program Capacity** Built-in Communications Ports : USB, EtherNet/IP, RS-232C Maximum I/O : 2,560

CP1E/L/H

- · Fully featured Micro PLC family.
- · Integrated Ethernet available.
- Integrated Analog available.
- · I/O, Analog, and basic expansion.



Specifications Power Supply

Pulse outputs

Analog I/O

Program capacity Communications Port Built-in digital I/O 10, 14, 20, 30, 40, 60 point 2 inputs (100 kHz) High-speed counters 2 outputs (100 kHz) 1-2 pt in # optional expansion

Easy Operation

Pushbutton Switches / Indicators

A22R/M22R Easy to Wire.

Selector, Key-selector, and Indicator are available



Specifications C € c@us @ Ro : 3A, 240VAC

24VDC Power supply voltage : BS232 BS422 **Communication ports** : Ethernet, USB Internal memory 128MB

3.5/5.6/7/10.1-inch : 50,000 Hours @ 25°C

C € ₀⊕₀₀

Screen sizes

Backlight life

Internal memory

NS Series 5.7 to 15-inch bright and crisp displays. High function, high reliability

operation, maintenance, and troubleshooting features with Class 1 Div 2 rating



Specifications C € ₀ ⊕₀₀ Power supply voltage 24 VDC **Communication ports**

RS-232C, RS-422A/485, • USB, Ethernet 5.7/8.4/10.4/12.1/15-inch 60MB 75,000 Hours @ 25°C

NA Series

7 to 15-inch widescreen

customization capabilities

Programmed within Sysmac Studio

Video, Document, and VB.Net

high-resolution display

- **(**€ ₀∰₀₀
 - 7/9/12.1/15.4-inch 256MB
 - : 50.000 Hours @ 25°C

10

C € 6 W us 5k - 10k steps 1 - 2 port options + integrated ports





Specifications Power supply voltage **Communication ports** Screen sizes

Internal memory

Backlight life

: 24 VDC BS-232C Ethernet LISB

Rated load

Quantity Count

Self-powered Totalizer

H7E -N Compact Economical Totalizer with

High Visibility Available with Backlight LCD Display.



Specifications Display : LCD : 1/32 DIN Size Max. counting speed : 30Hz/1kHz **Counting range** : 0 to 99999999



Stable Power Supply

Thinner control panel with industry's top class of short body size.



Specifications 100 to 240 VAC Input voltage Mounting DIN Rail mounting Additional functions Mounting

-40 to 70°C, Dual DC input: 90 to 350 VDC,

C € c⊕us c¶us ☆

Power Boost function at 120%

DIN Track mounting

S8VS

Capacity

Input voltage

IsnoitibhA

functions

Mounting

Display for monitoring replacement time. Compact size of 40 wide x 95 mm high. (60W)



Specifications (€ :⊕us :¶us ▲

: 15/30/60/90/120/180/240/480W

- 85 to 264 VAC
- Overcurrent protection, overvoltage protection,
- status display, and series operation.
- : Front mounting and DIN Track mounting

Circuit Switching

General Purpose Relays



Specifications

Standard model Model with LED indicator : MY2N, MY4N Model with LED indicator and lockable test button **Contact form** Rated load (resistive)

Worldwide

Max. switching current Rated coil voltage Electrical endurance

Ambient operating temperature Applicable Socket

SPDT, DPDT, 3PDT, 4PDT 2, 3, 4-pole 10A@110VAC. 10A@24VDC 6 to 240VAC, 6 to 110VDC 1-pole 200,000 ops min. 2-pole 500,000 ops min.

4-pole -25 to 40°C : 1, 2-pole PTF08A 3-pole PTF11A 4-pole PTF14A



MK-S Series

Exceptionally reliable General Purpose Relay with lockable test button.



MKS2P_MKS3P

MKS2PIN, MKS3PIN

Specifications

Standard model Model with built-in indicator: MKS2PN, MKS3PN Model with built-in LED indicator and lockable test button Contact form

: DPDT, 3PDT NO 10A@250VAC. 10A@30VDC

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Rated coil voltage Electrical endurance Ambient operating temperature Applicable Socket

Rated load (resistive)

- NC 5A@250VAC, 5A@30VDC 6 to 240VAC, 6 to 110VDC : 100.000 operations min.
- : -40 to +60°C
- : 2-pole PF083A-E 3-pole PF113A-E

Monitoring of Speed and Revolution

Compact Timing Control

Solid-state Timers

H3DK

Slim design (22.5mm Width) that mounts to DIN Track.

Universal AC/DC power input.



Specifications

Time range Power supply voltage Output Other models Twin Timer Star-delta Timer Power OFF-Delay Timer (*) 240 to 440 VAC

24 to 240V AC/DC, 12VDC SPDT relay / DPDT relay H3DK-F H3DK-G/GE (*) H3DK-H

0.1s to 1200h

(€ @)

H3Y Ultra-compact, space-saving design of

21.5 wide x 28 high. Easy time setting with a large knob.



Specifications Time range Power supply voltage **ON-delay** operation Output

((🔊 🌒 🕼 LR 🚳 : 0.5s to 3h : 220VAC/110VAC/24VDC

: Time-limit DPDT or 4PDT

Highly Visible LCD Display with 2-color

Digital Panel Meters

(Red and Green) LEDs.

K3MA-F

Specifications Supply Voltage **Display range** Max. counting speed Out type

$(\in \mathbf{R})$

100 to 240VAC, 24VAC/DC -19999 to 99999 30Hz/5kHz

Upper Limit/ Lower Limit/

Upper and Lower Limit





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