

One Stop Solutions for Machines

Industry Selection Guide



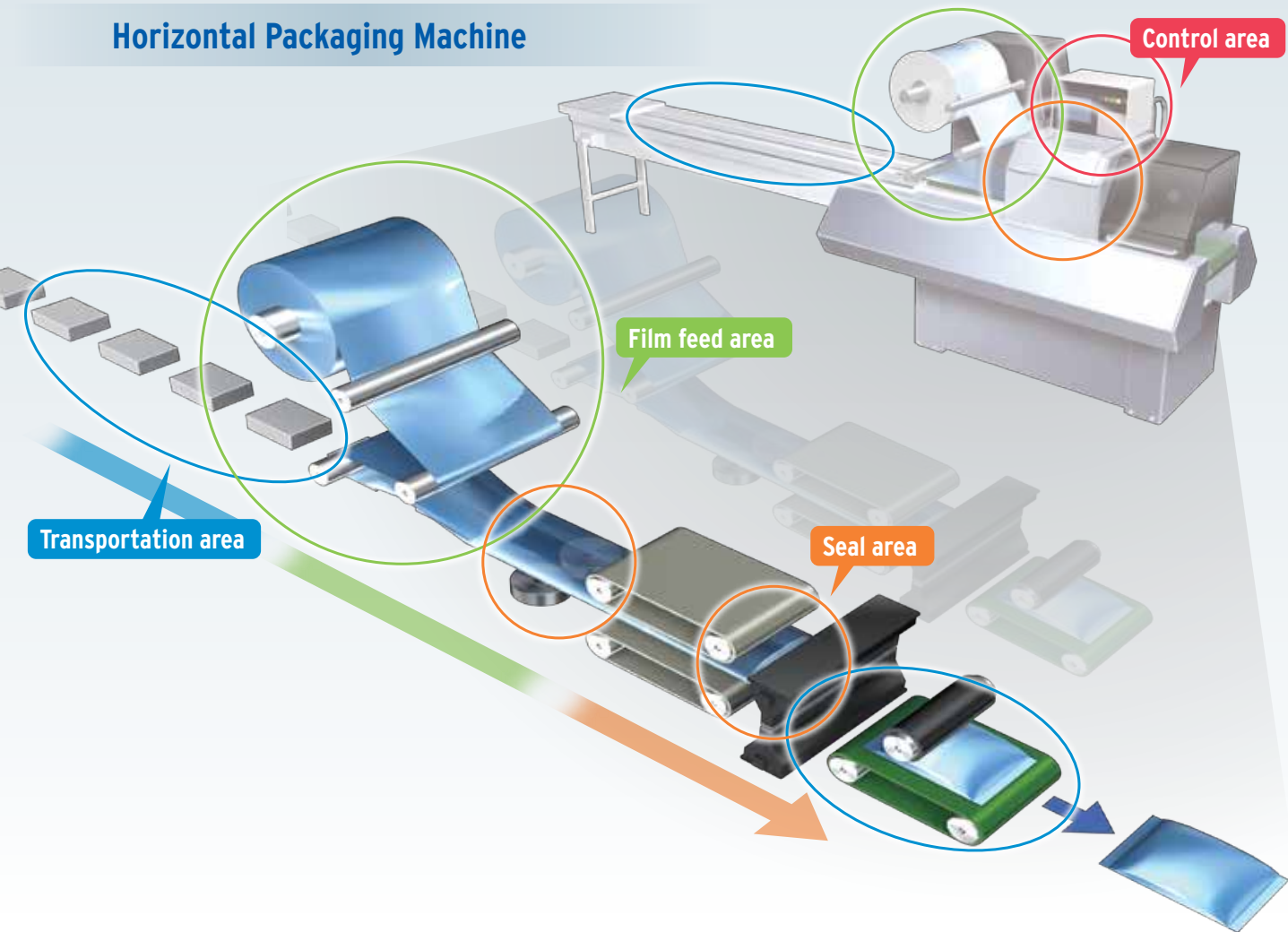
- » Innovative Technologies
- » Easy to Use, Install and Integrate
- » Powerful Solutions

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.

Horizontal Packaging Machine



Transportation/Material Feed Area

>> p. 4-5

To ensure stable high-speed operation

Photoelectric Sensors



Inductive Proximity Sensors



Fiber Sensor



Encoders



Inverters



Film Feed Area

>> p. 6-7

To improve efficiency through the stable detection of transparent films

Photoelectric Sensors



Photoelectric Sensors



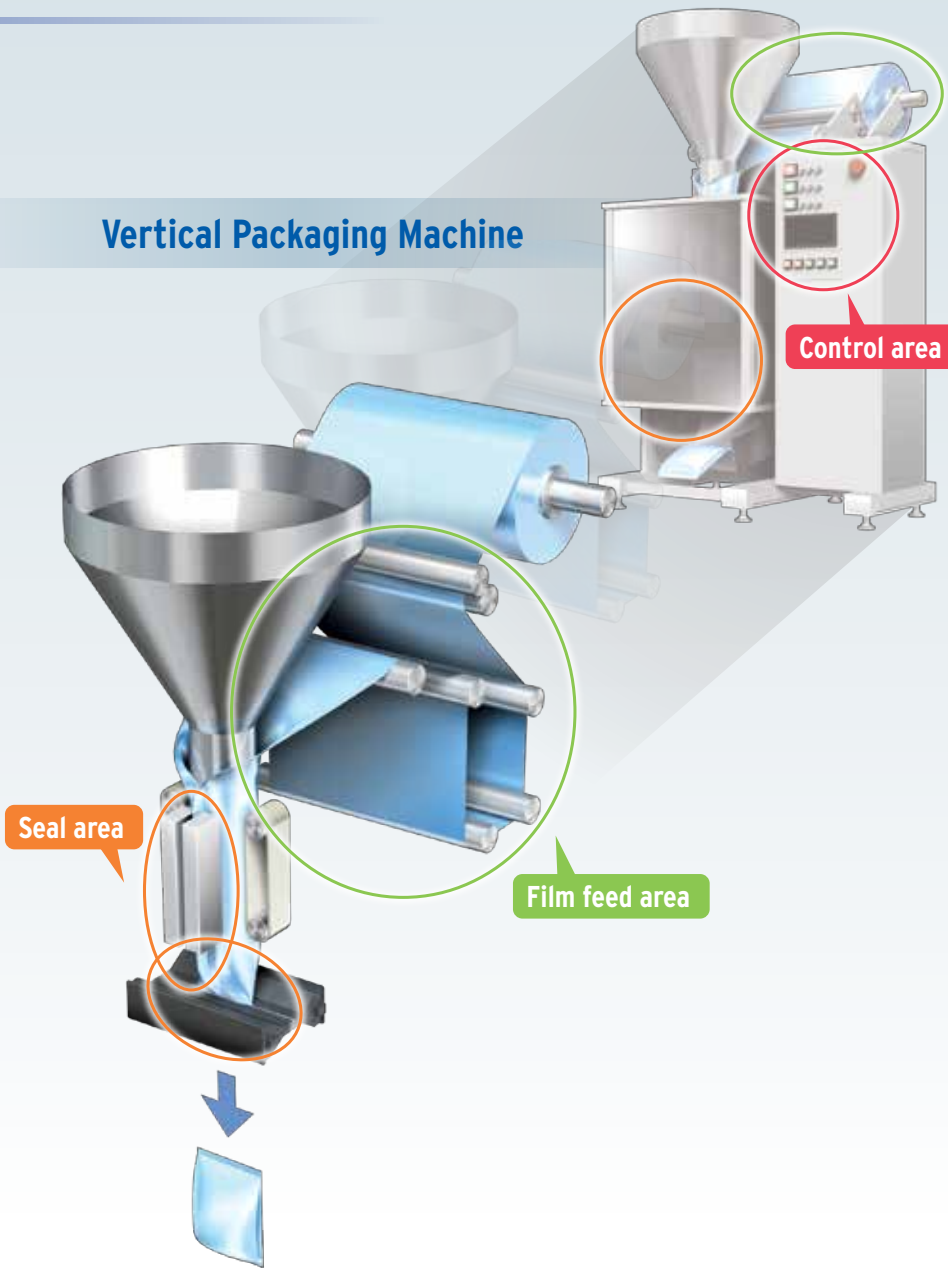
Proximity Sensors



Fiber Sensors



Vertical Packaging Machine



Also applicable to the following machines



Shrink wrapping



Blister packaging



Sealer

Seal Area

>> p. 8-9

To improve the packaging quality by precise sealing

Temperature Sensors



E52

Temperature Controllers



E5CC/E5EC

Solid State Relays



G3NE

G3NA

G3PE

Proximity Sensors



E2B

E2E

Timers/Counters



H5CX



H3CR



H7CX

Control Area

>> p. 10-11

To improve user friendly operation

Programmable Controllers



Sysmac NJ CP1E/L/H

CJ2

Operator Interfaces



NB

NS

NA



H3DK

Timers/Counters



N7E_N



H3Y

Digital Panel Indicator



K3MA-F

Pushbuttons



A22R/M22R

Relays



MY



LY



MK-S

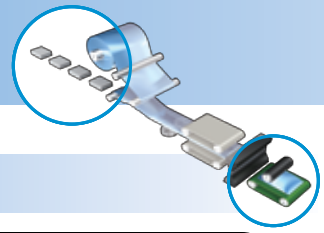
Power Supplies



S8VK-G



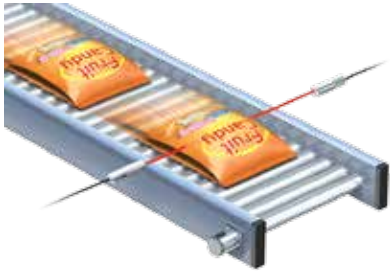
S8VS



Detection of Product Passage

Photoelectric Sensors

→ Target Presence



E3Z

Compact Sensor with Built-in Amplifier

- Global standard size.



Specifications

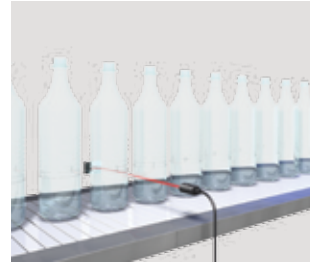
Size : 31 * 20 * 10.8mm
 Sensing distance : Through beam 10M, 15M, 30M
 Retro reflective 4M
 Diffuse reflective 100mm, 1M, 90±30mm
 Power supply voltage : DC12-24V
 Control output : PNP/NPN
 Connection : Pre-wire, Connector (M8 & M12)



E3FA

Transparent Object Detection

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



E3FA

All-Application Series

- High power LED to compensate for dirt and misalignment.



Specifications

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



E3RA

All-Application Series

- Radial, 90 degree design for applications in tighter spaces.



Specifications

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



→ Stable Detection of Transparent Targets



E3ZM-B

Excellent PET Bottle Detection

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



Specifications

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



E3ZM

Stainless Steel Housing Ideal for Food Industry

- IP69K for frequent machine wash down.



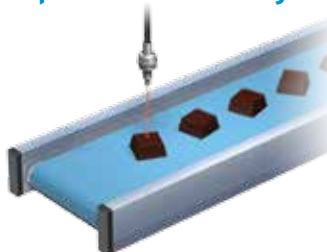
Specifications

Size : 31 * 20 * 10.8 mm
 Sensing Distance : Through beam 15M
 Power supply voltage : DC 10-30V
 Control output : PNP/NPN



Fiber Sensors

→ Adapted for Small Targets



Fiber Sensors E3Z >>> P.7

E3X-HD

Easy-To-Use Fiber Amplifier

- High-speed and stable detection even in adverse, dusty environments.



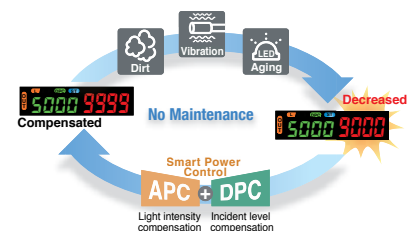
Specifications

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

Increased Ranges!



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



Detection of Positioning and Operation Timing



Inductive Proximity Sensors

E2B

Premium series for long distance detection

- Wide variety of extended range cylindrical proximity sensors.



Specifications

Size	: M8/M12/M18/M30
Sensing distance	: 4mm/8mm/16mm/30mm
Power supply voltage	: DC 12-24V
Control output	: DC3wire, PNP/NPN
Connection	: Pre-wire, Connector



E2E

Premium series for tough environments

- For harsh, oily environments.



Specifications

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



Rotary Encoders

E6B2-C

Incremental 40-mm-dia.

- General purpose compact encoders.



Specifications

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



E6C2-C

Slim Incremental 50-mm-dia.

- Rugged and easy-to-use.



Specifications

Size	: Ø 50 * 40 mm
Shaft	: Ø 6 mm
Power supply voltage	: DC5V, DC5-12V DC5-24V, DC12-24V
Resolution	: 10-2,000P/R



Detection of Material

Capacitive Proximity Sensors



E2K-X

Low Cost type

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



Specifications

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



E2K-C

Long-distance type

- Adjustable Sensitivity.
Ability to detect water and oil.



Specifications

Size	: Ø 34
Sensing distance	: 25mm
Power supply voltage	: DC 12-24V
Control output	: PNP/NPN
Connection	: Pre-wire



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)

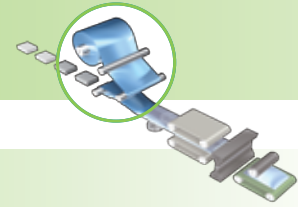
MX2 Series

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

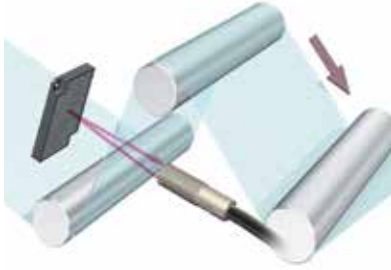


Specifications

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



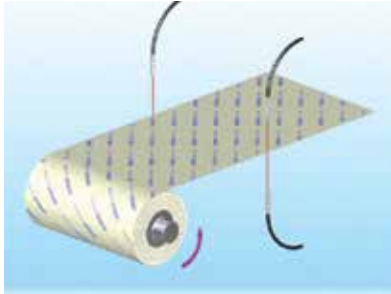
Detection of sheets and films



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.



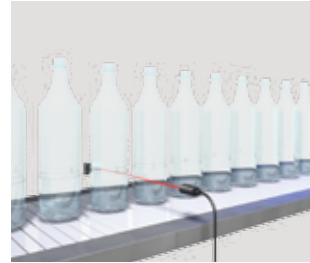
Specifications

Size	: 31 * 20 * 10.8mm	CE
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

Transparent Object Detection

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



E3FA

All-Application Series

- High power LED to compensate for dirt and misalignment.



Specifications

Size	: M18	CE
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	

E3RA

All-Application Series

- Radial, 90 degree design for applications in tighter spaces.



Specifications

Size	: M18	CE
Sensing distance	: Through beam 15M Retro reflective 3M Diffuse reflective 100mm/300mm/700mm	
Power supply voltage	: DC10-30V	
Control output	: PNP/NPN	
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	Increased Ranges! CE
Control output	: PNP/NPN	
Response speed	: 50µs	

Photoelectric Sensors

→ Detection of Transparent Sheets

E3ZM-B

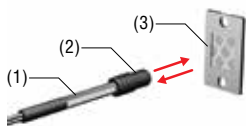
Transparent Object Detection

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



Specifications

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



- (1) Fiber Sensors
E32-C31
+
- (2) Transparent Object Detection Lens Unit
E39-F3R
+
- (3) Reflective Unit
E39-RP37

Detection of Sheet / Film Sag

Inductive Proximity Sensors



E2B

Premium series for long distance detection

- Wide variety of extended range cylindrical proximity sensors.



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.



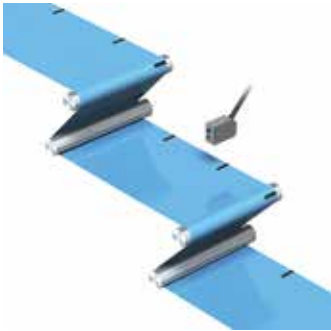
Specifications

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



Detection of Register Marks / Detection of Sheet Seam

Photoelectric Sensors



→ All-round Use

E3ZM-V

Color Mark Detection

- White LED for the discernment of all colors.



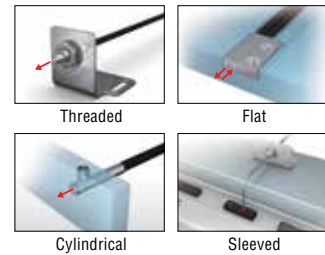
Specifications

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



E32

Wide variety of fiber unit designs and applications to select from



Fiber Sensors



→ 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!



→ 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



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

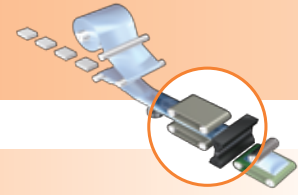
Multi-function Compact Inverters with a wide range of capacity variation



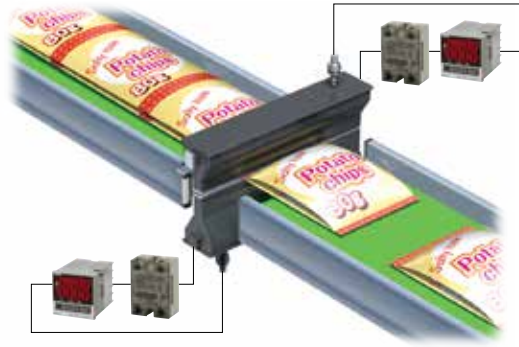
Specifications

- 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.

Specifications

Description :
Sheathed platinum resistance thermometer,
Sheathed thermocouple

Temperature Controllers

E5CC/E5EC

Easy-to-Read Large White PV Display
• E5CC (48x48mm) / E5EC (48x96mm)



Specifications



Power supply voltage : 100 to 240 VAC
24 VAC / 24 VDC
Sensor Input : Thermocouple
Platinum resistance thermometer
Infrared temperature sensor
Analog input : Current input 4 to 20 mA or 0 to 20 mA
Voltage input 1 to 5 V, 0 to 5 V, or 0 to 10 V
Control output : Relay output / Voltage output
(for driving SSR)

- 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 : with radiator 0.1 to 20A
without radiator 0.1 to 5A
Isolation method : Phototriac coupler
Zero-cross function : Yes

G3NA

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



Specifications



Power Supply Voltage : 5 to 24VDC
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.



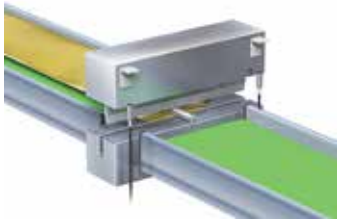
Specifications



Power Supply Voltage : 12 to 24 VDC
Rated load voltage : 100 to 240 VAC/200 to 480 VAC
Rated current : ~Max Value : ~15A/~25A/~35A/~45A
Isolation method : Phototriac coupler
Zero-cross function : Yes/No

Detect Workpiece Engagement

Inductive Proximity Sensors



E2B

Premium series for long distance detection

- Wide variety of extended range cylindrical proximity sensors.



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.



Specifications

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



Control of Heat Seal Time

Timers/Counters



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



Other models
Twin Timer : H3CR-F
Star-delta Timer : H3CR-G
Power OFF-Delay Timer : H3CR-H
Multi Function : H3CR-A

Counting in Fixed-size Cutting

Counters



H7CX

- High Visibility, 12mm-high color display.



Specifications

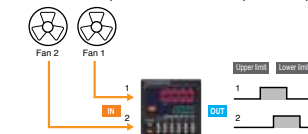
Preset counter, tachometer, and 4 other functions in one Unit.
Counting speed: 30 Hz or 5 kHz
Increment, decrement, or increment/decrement operation
Multifunction Preset counter, tachometer and 4 other functions in one unit
Counting speed: 30Hz or 5 kHz
Increment, decrement, or increment/decrement operation
The present value display characters can be switched between red, green, and orange.



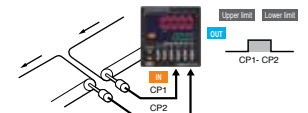
H7CX

Complete Tachometer Functionality

- 1) One-input measurement
Measurement operation with one input.
Select the HI-LO, AREA, HI-HI, or LO-LO output mode.
- 2) Independent Measurement for Two Inputs.
Measurement operation with two independent inputs.



- 3) Differential Input for Two Inputs.
Measuring the difference between two inputs (CP1 - CP2).



- 4) Absolute Ratio for Two Inputs.
Measuring the ratio between two inputs (CP1/CP2).



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

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

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)
OS	: 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	: 24VDC, 100 to 240VAC
Program Capacity	: 5MB, 20MB
Built-in Communications Ports	: USB, EtherCAT, EtherNet/IP
Maximum I/O	: 2,560



CJ2

- High performance, rack-free, modular PLC.
- Integrated EtherNet/IP available.
- Extensive motion, communication, and Analog expansion.



Specifications

Power Supply	: 24VDC, 100 to 240 VAC
Program Capacity	: 5K to 60K Steps, 50K to 400K Steps
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	: 24 VDC, 100 to 240 VAC
Program capacity	: 5k - 10k steps
Communications Port	: 1 - 2 port options + integrated ports
Built-in digital I/O	: 10, 14, 20, 30, 40, 60 point
High-speed counters	: 2 inputs (100 kHz)
Pulse outputs	: 2 outputs (100 kHz)
Analog I/O	: 1-2 pt in # optional expansion



Vibrant & Clear Display

Operator Interface Terminals

NB Series

- Value displays from 3.5 to 10.1 inch.
- Feature-rich standard interface with class leading color, brightness, and longevity, as well as timesaving maintenance/troubleshooting options.



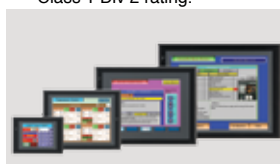
Specifications

Power supply voltage	: 24VDC
Communication ports	: RS232, RS422, Ethernet, USB
Screen sizes	: 3.5/5.6/7/10.1-inch
Internal memory	: 128MB
Backlight life	: 50,000 Hours @ 25°C



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

Power supply voltage	: 24 VDC
Communication ports	: RS-232C, RS-422A/485, USB, Ethernet
Screen sizes	: 5.7/8.4/10.4/12.1/15-inch
Internal memory	: 60MB
Backlight life	: 75,000 Hours @ 25°C



NA Series

- 7 to 15-inch widescreen high-resolution display
- Programmed within Sysmac Studio
- Video, Document, and VB.Net customization capabilities



Specifications

Power supply voltage	: 24 VDC
Communication ports	: RS-232C, Ethernet, USB
Screen sizes	: 7/9/12.1/15.4-inch
Internal memory	: 256MB
Backlight life	: 50,000 Hours @ 25°C



Easy Operation

Pushbutton Switches / Indicators

A22R/M22R

- Easy to Wire.
- Selector, Key-selector, and Indicator are available.



Specifications

Rated load	: 3A, 240VAC
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Quantity Count

Self-powered Totalizer

H7E-N

- Compact Economical Totalizer with High Visibility Available with Backlight LCD Display.



Specifications



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

Stable Power Supply

Switch Mode Power Supplies

S8VK-G

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



Specifications



Input voltage	: 100 to 240 VAC
Mounting	: DIN Rail mounting
Additional functions	: -40 to 70°C, Dual DC input: 90 to 350 VDC, Power Boost function at 120%
Mounting	: DIN Track mounting

S8VS

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



Specifications



Capacity	: 15/30/60/90/120/180/240/480W
Input voltage	: 85 to 264 VAC
Additional functions	: Overcurrent protection, overvoltage protection, status display, and series operation.
Mounting	: Front mounting and DIN Track mounting

Circuit Switching

General Purpose Relays

MY Series

- Track Record of One Billion Relays Sold Worldwide.



Mini Power Relays

Specifications



Standard model	: MY2, MY4
Model with LED indicator	: MY2N, MY4N
Model with LED indicator and lockable test button	: MY2IN, MY4IN
Contact form	: DPDT, 4PDT
Rated load (resistive)	: 2-pole 5A@250VAC, 5A@30VDC 4-pole 3A@250VAC, 3A@30VDC
Max. switching current	: 2-pole 10A, 4-pole 5A
Rated coil voltage	: 6 to 240VAC, 6 to 110VDC
Electrical endurance	: 2-pole 500,000 ops min 4-pole 200,000 ops min
Ambient operating temperature	: -55 to +70°C
Applicable Socket	: 2-pole PYF08A-E, PYF08S 4-pole PYF14A-E, PYF14S

LY Series

- Compact, General Purpose 15-A and 10-A Relays ideal for many applications.



Power Relays (4 poles)

(2 poles)

Specifications



Standard model	: LY1, LY2, LY3, LY4
Model with LED indicator	: LY1N, LY2N, LY3N, LY4N
Model with built-in diode coil surge suppression	: LY1-D, LY2-D, LY3-D, LY4-D
Contact form	: SPDT, DPDT, 3PDT, 4PDT
Rated load (resistive)	: 1-pole 15A@110VAC, 15A@24VDC 2, 3, 4-pole 10A@110VAC, 10A@24VDC
Rated coil voltage	: 6 to 240VAC, 6 to 110VDC
Electrical endurance	: 1-pole 200,000 ops min. 2-pole 500,000 ops min. 3, 4-pole 200,000 ops min.
Ambient operating temperature	: 1, 2, 3-pole -25 to 55°C 4-pole -25 to 40°C
Applicable Socket	: 1, 2-pole PTF08A 3-pole PTF11A 4-pole PTF14A

MK-S Series

- Exceptionally reliable General Purpose Relay with lockable test button.



Specifications



Standard model	: MKS2P, MKS3P
Model with built-in indicator	: MKS2PN, MKS3PN
Model with built-in LED indicator and lockable test button	: MKS2PIN, MKS3PIN
Contact form	: DPDT, 3PDT
Rated load (resistive)	: NO 10A@250VAC, 10A@30VDC NC 5A@250VAC, 5A@30VDC
Rated coil voltage	: 6 to 240VAC, 6 to 110VDC
Electrical endurance	: 100,000 operations min.
Ambient operating temperature	: -40 to +60°C
Applicable Socket	: 2-pole PF083A-E 3-pole PF113A-E

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	: 0.1s to 1200h
Power supply voltage	: 24 to 240V AC/DC, 12VDC
Output	: SPDT relay / DPDT relay
Other models	
Twin Timer	: H3DK-F
Star-delta Timer	: H3DK-G/GE (*)
Power OFF-Delay Timer	: H3DK-H
(*) 240 to 440 VAC	

H3Y

- Ultra-compact, space-saving design of 21.5 wide x 28 high.
- Easy time setting with a large knob.



Specifications



Time range	: 0.5s to 3h
Power supply voltage	: 220VAC/110VAC/24VDC
ON-delay operation	
Output	: Time-limit DPDT or 4PDT

Monitoring of Speed and Revolution

Digital Panel Meters

K3MA-F

- Highly Visible LCD Display with 2-color (Red and Green) LEDs.



Specifications



Supply Voltage	: 100 to 240VAC, 24VAC/DC
Display range	: -19999 to 99999
Max. counting speed	: 30Hz/5kHz
Out type	: Upper Limit/ Lower Limit/ Upper and Lower Limit