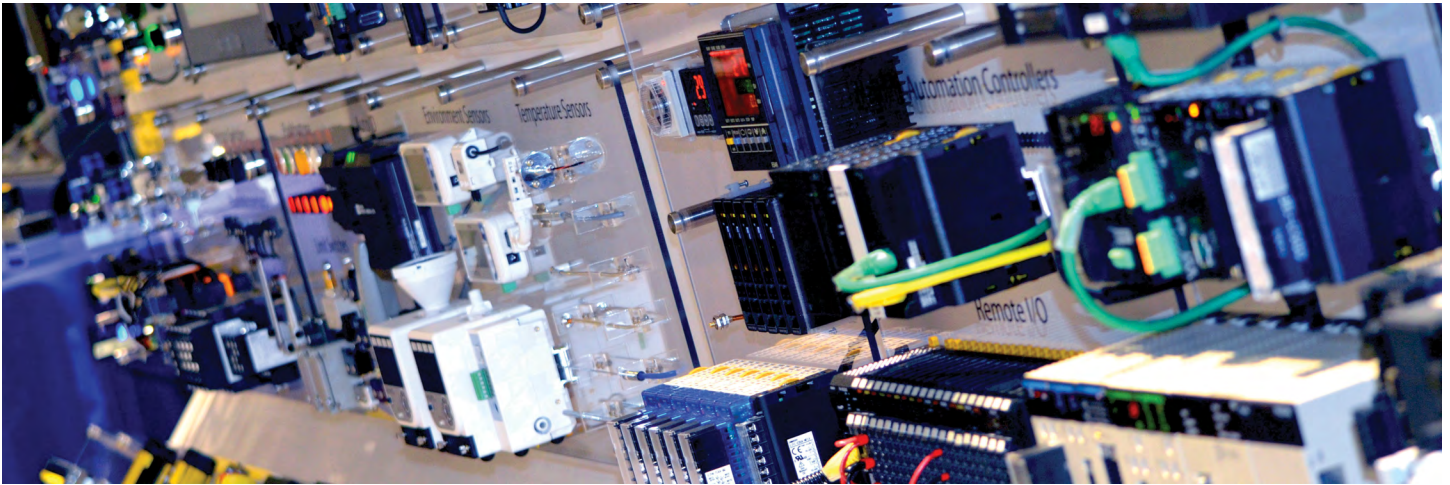








## Your trusted partner in automation

Omron Automation is an industrial automation partner that creates, sells and services complete automation solutions that include sensing, control, safety, vision, motion, robotics and more.

Omron's engineers are dedicated to providing flexible and highly customizable solutions that can solve unique needs in a variety of industries, including food and beverage, automotive, life sciences, semiconductor and electronics manufacturing. We can help you develop solutions to address needs ranging from high performance machines to plant wide traceability and advanced manufacturing.

Established in 1933 and currently headed by President Yoshihito Yamada, Omron's 30,000 employees help businesses solve problems with creativity in more than 110 countries.

Learn more at [automation.omron.com](https://automation.omron.com).





## A selection of our most popular products

This core product guide presents a selection of our most popular products in a clear and concise format to aid in decision-making. We have included the most important selection criteria for each family to aid in easy product selection. We encourage you to refer to our website for more information and additional products and technologies.

Omron has the wide-ranging technology portfolio necessary to offer a fully integrated, end-to-end solution for any automation need. From sensors, barcode readers and vision systems to programmable logic controllers, robotics and more. For manufacturers seeking to implement a complete automation system or simply choose a few Omron products to incorporate into their existing designs, this guide is meant to make selection and design much easier.









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## E2E NEXT - Long Range DC 3-Wire Inductive Sensors

- Industry leading sensing distances with up to 4x the sensing range of standard models
- IO-Link is standard with DC 3-wire PNP models Multiple connection Types
- Multiple connection Types (including M8 QD, M12 QD, M12 Pig-tail QD, PVC cable and PVC Robot Cable)
- Harsh condition robustness with IP67, IP69K, and IP67G



| Barrel Size | Sensing Distance | Shielded /Unshielded | Connection Method         | PNP Model              | NPN Model             |
|-------------|------------------|----------------------|---------------------------|------------------------|-----------------------|
| M8          | 1.5 mm           | Shielded             | M8 Connector<br>(3 pins)  | E2E-X1R5B1D8-M5        | E2E-X1R5C18-M5        |
|             | 2mm              |                      |                           | E2E-X2B1D8-M5          | E2E-X2C18-M5          |
|             | 4mm              |                      |                           | <b>E2E-X4B1D8-M5</b>   | E2E-X4C18-M5          |
|             | 1.5 mm           |                      | M12 Pigtail*              | E2E-X1R5B1D8-M1TJ 0.3M | E2E-X1R5C18-M1TJ 0.3M |
|             | 2mm              |                      |                           | E2E-X2B1D8-M1TJ 0.3M   | E2E-X2C18-M1TJ 0.3M   |
|             | 4mm              |                      |                           | E2E-X4B1D8-M1TJ 0.3M   | E2E-X4C18-M1TJ 0.3M   |
|             | 2 mm             | Unshielded           | M8 Connector<br>(3 pins)  | E2E-X2MB1D8-M5         | E2E-X2MC18-M5         |
|             | 4mm              |                      |                           | E2E-X4MB1D8-M5         | E2E-X4MC18-M5         |
|             | 8mm              |                      |                           | E2E-X8MB1D8-M5         | E2E-X8MC18-M5         |
|             | 2 mm             |                      | M12 Pigtail*              | E2E-X2MB1D8-M1TJ 0.3M  | E2E-X2MC18-M1TJ 0.3M  |
|             | 4mm              |                      |                           | E2E-X4MB1D8-M1TJ 0.3M  | E2E-X4MC18-M1TJ 0.3M  |
|             | 8mm              |                      |                           | E2E-X8MB1D8-M1TJ 0.3M  | E2E-X8MC18-M1TJ 0.3M  |
| M12         | 2 mm             | Shielded             | M12 Connector<br>(4 pins) | E2E-X2B1D12-M1         | E2E-X2C112-M1         |
|             | 4mm              |                      |                           | <b>E2E-X4B1D12-M1</b>  | E2E-X4C112-M1         |
|             | 9mm              |                      |                           | <b>E2E-X9B1D12-M1</b>  | E2E-X9C112-M1         |
|             | 5 mm             | Unshielded           |                           | E2E-X5MB1D12-M1        | E2E-X5MC112-M1        |
|             | 8mm              |                      |                           | E2E-X8MB1D12-M1        | E2E-X8MC112-M1        |
|             | 16mm             |                      |                           | E2E-X16MB1D12-M1       | E2E-X16MC112-M1       |
| M18         | 5 mm             | Shielded             |                           | E2E-X5B1D18-M1         | E2E-X5C118-M1         |
|             | 8mm              |                      |                           | E2E-X8B1D18-M1         | E2E-X8C118-M1         |
|             | 14mm             |                      |                           | <b>E2E-X14B1D18-M1</b> | E2E-X14C118-M1        |
|             | 10 mm            | Unshielded           |                           | E2E-X10MB1D18-M1       | E2E-X10MC118-M1       |
|             | 16mm             |                      |                           | E2E-X16MB1D18-M1       | E2E-X16MC118-M1       |
|             | 30mm             |                      |                           | E2E-X30MB1DL18-M1      | E2E-X30MC1L18-M1      |
| M30         | 10 mm            | Shielded             | E2E-X10B1D30-M1           | E2E-X10C130-M1         |                       |
|             | 15mm             |                      | E2E-X15B1D30-M1           | E2E-X15C130-M1         |                       |
|             | 23mm             |                      | E2E-X23B1D30-M1           | E2E-X23C130-M1         |                       |
|             | 18 mm            | Unshielded           | E2E-X18MB1D30-M1          | E2E-X18MC130-M1        |                       |
|             | 30mm             |                      | E2E-X30MB1DL30-M1         | E2E-X30MC1L30-M1       |                       |
|             | 50mm             |                      | E2E-X50MB1DL30-M1         | E2E-X50MC1L30-M1       |                       |

Note: Models shown are normally open, normally closed options are available.

\* 0.3M pre-wired with 4 pin M12 connector on the end.

Tables include representative part numbers. Please consult the product page for more details.



## E2EW - Metal Face Proximity Sensors



- Extended sensing range, up to 4x standard sensing
- Factor 1 sensing of ferrous and non-ferrous metals
- Weld field immunity
- IP67 rating for environmental robustness
- Proprietary slag resistance coating
- IO-link configurability and output monitoring



| Connection Method | Sensing Range | Barrel Size | Sensing Distance | PNP Model             | NPN Model             |
|-------------------|---------------|-------------|------------------|-----------------------|-----------------------|
| M12 Pigtail*      | 1x            | M12         | 2 mm             | E2EW-X2B112-M1TJ 0.3M | E2EW-X2C112-M1TJ 0.3M |
|                   |               | M18         | 5 mm             | E2EW-X5B118-M1TJ 0.3M | E2EW-X5C118-M1TJ 0.3M |
| Pre-wire          |               | M12         | 2 mm             | E2EW-X2B112 2M        | E2EW-X2C112 2M        |
|                   |               | M18         | 5 mm             | E2EW-X5B118 2M        | E2EW-X5C118 2M        |

| Connection Method | Sensing Range | Barrel Size | Sensing Distance | PNP Model                      | NPN Model              |
|-------------------|---------------|-------------|------------------|--------------------------------|------------------------|
| M12 Pigtail*      | 4x            | M18         | 12 mm            | <b>E2EW-X12B1T18-M1TJ 0.3M</b> | E2EW-X12C118-M1TJ 0.3M |
|                   |               | M30         | 22 mm            | <b>E2EW-X22B1T30-M1TJ 0.3M</b> | E2EW-X22C130-M1TJ 0.3M |
| Pre-wire          |               | M18         | 12 mm            | E2EW-X12B1T18 2M               | E2EW-X12C118 2M        |
|                   |               | M30         | 22 mm            | E2EW-X22B1T30 2M               | E2EW-X22C130 2M        |

### Spatter Resistance Models

| Connection Method | Sensing Range | Barrel Size | Sensing Distance | PNP Model                     | NPN Model              |
|-------------------|---------------|-------------|------------------|-------------------------------|------------------------|
| M12 Pigtail*      | 1x            | M12         | 2 mm             | <b>E2EW-QX2B112-M1TJ 0.3M</b> | E2EW-QX2C112-M1TJ 0.3M |
|                   |               | M18         | 5 mm             | <b>E2EW-QX5B118-M1TJ 0.3M</b> | E2EW-QX5C118-M1TJ 0.3M |
| Pre-wire          |               | M12         | 2 mm             | E2EW-QX2B112 2M               | E2EW-QX2C112 2M        |
|                   |               | M18         | 5 mm             | E2EW-QX5B118 2M               | E2EW-QX5C118 2M        |

| Connection Method | Sensing Range | Barrel Size | Sensing Distance | PNP Model                       | NPN Model               |
|-------------------|---------------|-------------|------------------|---------------------------------|-------------------------|
| M12 Pigtail*      | 4x            | M18         | 12 mm            | <b>E2EW-QX12B1T18-M1TJ 0.3M</b> | E2EW-QX12C118-M1TJ 0.3M |
|                   |               | M30         | 22 mm            | <b>E2EW-QX22B1T30-M1TJ 0.3M</b> | E2EW-QX22C130-M1TJ 0.3M |
| Pre-wire          |               | M18         | 12 mm            | E2EW-QX12B1T18 2M               | E2EW-QX12C118 2M        |
|                   |               | M30         | 22 mm            | E2EW-QX22B1T30 2M               | E2EW-QX22C130 2M        |

\* 0.3M pre-wired with 4 pin M12 connector on the end.

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.



## E3Z - Compact Photoelectric Sensor

- General purpose photoelectric family with all common sensing modes at long range
- Minimal optical axis deviation for easy alignment
- IP67 for water resistance
- Intensive shielding for highest noise immunity (EMC)
- Multiple molding housing for high mechanical resistance



| Sensor Type                           | Sensor Distance       | Connection            | PNP Model       | NPN Model       |
|---------------------------------------|-----------------------|-----------------------|-----------------|-----------------|
| Through-beam<br>(emitter+receiver)    | 10m (Red LED)         | 2m Cable              | E3Z-T81A        | E3Z-T61A        |
|                                       |                       | M8 Connector (4 pins) | <b>E3Z-T86A</b> | E3Z-T66A        |
|                                       | 15m (Infrared LED)    | 2m Cable              | <b>E3Z-T81</b>  | <b>E3Z-T61</b>  |
|                                       |                       | M8 Connector (4 pins) | <b>E3Z-T86</b>  | E3Z-T66         |
|                                       | 30m (Infrared LED)    | 2m Cable              | E3Z-T82 2M      | E3Z-T62 2M      |
|                                       |                       | M8 Connector (4 pins) | E3Z-T87         | E3Z-T67         |
| Retro-reflective with MSR<br>function | 0.1 to 4m (Red LED)   | 2m Cable              | <b>E3Z-R81</b>  | <b>E3Z-R61</b>  |
|                                       |                       | M8 Connector (4 pins) | <b>E3Z-R86</b>  | <b>E3Z-R66</b>  |
| Diffuse-reflective                    | 1m (Infrared LED)     | 2m Cable              | <b>E3Z-D82</b>  | <b>E3Z-D62</b>  |
|                                       |                       | M8 Connector (4 pins) | <b>E3Z-D87</b>  | E3Z-D67         |
| Background suppression                | 20 to 200mm (Red LED) | 2m Cable              | <b>E3Z-LS81</b> | <b>E3Z-LS61</b> |
|                                       |                       | M8 Connector (4 pins) | <b>E3Z-LS86</b> | E3Z-LS66        |

Note:

For sensors with IO-Link, refer to the catalog on the website [automation.omron.com](http://automation.omron.com)

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.

## E3FA - M18 Barrel Photoelectric Sensor

- Simplicity in selection and installation
- Compact size with flush mounting option
- IP67, IP69K for wash down resistance
- Straight or right angle (E3RA) models in cylindrical M18 plastic housing
- Background suppression, Limited Distance and Transparent detection models available



| Sensor Type                        | Sensor Distance     | Connection             | PNP Model           | NPN Model           |
|------------------------------------|---------------------|------------------------|---------------------|---------------------|
| Through-beam (emitter + receiver)* | 20m (Red LED)       | 2m Cable               | E3FA-TP11 2M        | E3FA-TN11 2M        |
|                                    |                     | M12 Connector (4 pins) | <b>E3FA-TP21</b>    | <b>E3FA-TN21</b>    |
| Retro-reflective with MSR function | 0.1 to 4m (Red LED) | 2m Cable               | <b>E3FA-RP11 2M</b> | <b>E3FA-RN11 2M</b> |
|                                    |                     | M12 Connector (4 pins) | <b>E3FA-RP21</b>    | <b>E3FA-RN21</b>    |
| Diffuse-reflective*                | 100mm (Red LED)     | 2m Cable               | E3FA-DP11 2M        | <b>E3FA-DN11 2M</b> |
|                                    |                     | M12 Connector (4 pins) | <b>E3FA-DP21</b>    | <b>E3FA-DN21</b>    |
|                                    | 300mm (Red LED)     | 2m Cable               | <b>E3FA-DP12 2M</b> | <b>E3FA-DN12 2M</b> |
|                                    |                     | M12 Connector (4 pins) | <b>E3FA-DP22</b>    | <b>E3FA-DN22</b>    |
|                                    | 1m (Red LED)        | 2m Cable               | E3FA-DP13 2M        | E3FA-DN13 2M        |
|                                    |                     | M12 Connector (4 pins) | <b>E3FA-DP23</b>    | E3FA-DN23           |
| Background suppression             | 100mm (Red LED)     | 2m Cable               | E3FA-LP11 2M        | E3FA-LN11 2M        |
|                                    |                     | M12 Connector (4 pins) | <b>E3FA-LP21</b>    | E3FA-LN21           |
|                                    | 200mm (Red LED)     | 2m Cable               | E3FA-LP12 2M        | E3FA-LN12 2M        |
|                                    |                     | M12 Connector (4 pins) | E3FA-LP22           | E3FA-LN22           |

\*Note for these sensing modes Infrared LED models are available.

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.



## E3Z-F - M18 Barrel Mount Photoelectric Sensor

- Visible alignment spot simplifies set-up
- Popular M18 nose mounting
- Models with infrared LEDs available
- Offers various types of sensing distances



| Sensor Type                           | Sensor Distance | Connection             | PNP Model    | NPN Model    |
|---------------------------------------|-----------------|------------------------|--------------|--------------|
| Through-beam<br>(emitter+receiver)*   | 20 m            | 2m Cable               | E3Z-FTP11 2M | E3Z-FTN11 2M |
|                                       |                 | M12 Connector (4 pins) | E3Z-FTP21    | E3Z-FTN21    |
| Retro-reflective with MSR<br>Function | 0.1 to 4m       | 2m Cable               | E3Z-FRP11 2M | E3Z-FRN11 2M |
|                                       |                 | M12 Connector (4 pins) | E3Z-FRP21    | E3Z-FRN21    |
| Diffuse-reflective*                   | 100 mm          | 2m Cable               | E3Z-FDP11 2M | E3Z-FDN11 2M |
|                                       |                 | M12 Connector (4 pins) | E3Z-FDP21    | E3Z-FDN21    |
|                                       | 300 mm          | 2m Cable               | E3Z-FDP12 2M | E3Z-FDN12 2M |
|                                       |                 | M12 Connector (4 pins) | E3Z-FDP22    | E3Z-FDN22    |
|                                       | 500 mm          | 2m Cable               | E3Z-FDP13 2M | E3Z-FDN13 2M |
|                                       |                 | M12 Connector (4 pins) | E3Z-FDP23    | E3Z-FDN23    |
|                                       | 1 m             | 2m Cable               | E3Z-FDP14 2M | E3Z-FDN14 2M |
|                                       |                 | M12 Connector (4 pins) | E3Z-FDP24    | E3Z-FDN24    |

Note:

Reflectors for retroreflective models are sold separately under code E39-R1S

\*Note for these sensing modes Infrared LED models are available

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.

## E3AS-HL - Photoelectric Sensor



- Limited effect of color or reflectivity
- Small and complex object detection
- Line and spot beam for 150mm and 500mm sensing distances
- IP69K and IP67G
- Ecolab tested and certified detergent resistance
- Advanced ease-of-use, single teach button, OLED screen
- IO-Link distance output monitoring and configuration



| Sensor Type | Sensor Distance | Beam Type | Connection             | PNP Model (I/O Link)    | NPN Model               |
|-------------|-----------------|-----------|------------------------|-------------------------|-------------------------|
| CMOS laser  | 500 mm          | Spot      | Pre-wire M12 Connector | E3AS-HL500MT-M1TJ 0.3M  | E3AS-HL500MN-M1TJ 0.3M  |
|             |                 | Line      |                        | E3AS-HL500LMT-M1TJ 0.3M | E3AS-HL500LMN-M1TJ 0.3M |
|             | 150 mm          | Spot      |                        | E3AS-HL150MT-M1TJ 0.3M  | E3AS-HL150MN-M1TJ 0.3M  |
|             |                 | Line      |                        | E3AS-HL150LMT-M1TJ 0.3M | E3AS-HL150LMN-M1TJ 0.3M |
|             | 500 mm          | Spot      | M8 4pin                | E3AS-HL500MT M3         | E3AS-HL500MN M3         |
|             |                 | Line      |                        | E3AS-HL500LMT M3        | E3AS-HL500LMN M3        |
|             | 150 mm          | Spot      |                        | E3AS-HL150MT M3         | E3AS-HL150MN M3         |
|             |                 | Line      |                        | E3AS-HL150LMT M3        | E3AS-HL150LMN M3        |

## E3AS-F - Photoelectric Sensor

- Minimal color influence on sensing distance
- 50mm to 1500mm sensing range
- IP69K and IP67G
- Ecolab tested and certified detergent resistance
- Single teach button
- IO-Link distance output monitoring and configuration



| Sensor Type                                | Sensor Distance | Material        | Connection              | PNP Model (I/O Link)     | NPN Model               |
|--------------------------------------------|-----------------|-----------------|-------------------------|--------------------------|-------------------------|
| Time of Flight with Background Suppression | 50 - 1500 mm    | Stainless Steel | Pre-wired M12 Connector | E3AS-F1500IMT-M1TJ 0.3M  | E3AS-F1500IMN-M1TJ 0.3M |
|                                            |                 |                 | M8 4pin Connector       | E3AS-F1500IMT M3         | E3AS-F1500IMN M3        |
|                                            |                 | Plastic         | Pre-wired M12 Connector | E3AS-F1500IPT- M1TJ 0.3M | E3AS-F1500IPN-M1TJ 0.3M |
|                                            |                 |                 | M8 4pin Connector       | E3AS-F1500IPT M3         | E3AS-F1500IPN M3        |
|                                            | 50 - 1000 mm    | Stainless Steel | Pre-wired M12 Connector | E3AS-F1000IMT-M1TJ 0.3M  | E3AS-F1000IMN-M1TJ 0.3M |
|                                            |                 |                 | M8 4pin Connector       | E3AS-F1000IMT M3         | E3AS-F1000IMN M3        |
|                                            |                 | Plastic         | Pre-wired M12 Connector | E3AS-F1000IPT-M1TJ 0.3M  | E3AS-F1000IPN-M1TJ 0.3M |
|                                            |                 |                 | M8 4pin Connector       | E3AS-F1000IPT M3         | E3AS-F1000IPN M3        |

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.



## E3AS-L - Photoelectric Sensor

- Enhanced background suppression-Reduced black/white error and differential travel
- 200mm or 80mm sensing range
- IP69K and IP67G
- Ecolab tested and certified detergent resistance
- Single teach button
- IO-Link configurability



| Sensor Type                         | Sensor Distance | Material        | Connection              | PNP Model (I/O Link)  | NPN Model             |
|-------------------------------------|-----------------|-----------------|-------------------------|-----------------------|-----------------------|
| Diffuse with Background Suppression | 10 - 200 mm     | Stainless Steel | Pre-wired M12 Connector | E3AS-L200MT-M1TJ 0.3M | E3AS-L200MN-M1TJ 0.3M |
|                                     | 10 - 80 mm      |                 |                         | E3AS-L80MT-M1TJ 0.3M  | E3AS-L80MN-M1TJ 0.3M  |
|                                     | 10 - 200 mm     |                 | M8 4pin Connector       | E3AS-L200MT M3        | E3AS-L200MN M3        |
|                                     | 10 - 80 mm      |                 |                         | E3AS-L80MT M3         | E3AS-L80MN M3         |

## E3S-DC - Color Mark Detection Sensor

- High signal to noise ratio detects subtle color differences.
- High luminance, three-element (RGB) LED light source for greater light intensity.
- Highly efficient optics technology provides high power and enables stable detection even of subtle color differences.



| Type                                  | Sensor Distance | Connection    | Output | Baud Rate (IO-Link) | Model         |
|---------------------------------------|-----------------|---------------|--------|---------------------|---------------|
| Diffuse - reflective (mark detection) | 10 ± 3mm        | M12 Connector | PNP    | COM 3 (230, 4 kbps) | E3S-DCP21-IL3 |
|                                       |                 |               | NPN    | ---                 | E3S-DCN21     |

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.

## E3NX-FA - High Speed Digital Fiber Amplifier

- Easy teaching by Smart tuning within a few seconds
- New N-Smart technology provides significant improvement for sensing distance, minimum object detection and speed
- Easy and transparent information about sensor status by Solution Viewer and Change Finder function
- EtherCAT Communication unit for high-speed field bus connectivity



| Setting/Function     | Sensor Distance                                   | Inputs/Outputs      | Connection | PNP Model      | NPN Model      |
|----------------------|---------------------------------------------------|---------------------|------------|----------------|----------------|
| Standard Models      | Sensing distance up to 4m depending on fiber used | 1 output            | 2 m        | E3NX-FA41 2M   | E3NX-FA11 2M   |
| Advanced Models      |                                                   | 2 outputs + 1 input | 2 m        | E3NX-FA51 2M   | E3NX-FA21 2M   |
| Analog Output Models |                                                   | 2 outputs           | 2 m        | E3NX-FA41AN 2M | E3NX-FA11AN 2M |

Note: Infrared standard models are available as well as connector options for standard, advanced, and infrared models.

## E3X-HD - Advanced Fiber Amplifier

- Simple one-button smart tuning for sensor threshold and light intensity
- Confirm settings and status easily with dual digital display
- Automatic compensation for large objects and low reflectance dark targets



| Setting / Function         | Range                             | Connection   | PNP Model          | NPN Model          |
|----------------------------|-----------------------------------|--------------|--------------------|--------------------|
| Advanced digital amplifier | Up to 4m depending on fiber model | 2m Cable     | <b>E3X-HD41 2M</b> | <b>E3X-HD11 2M</b> |
|                            |                                   | M8 Connector | <b>E3X-HD44</b>    | E3X-HD14           |

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.

# E3X-NA / SD - Fiber Optic Amplifiers

- Easy adjustment with potentiometer
- Mutual interference prevention
- Enhanced water resistance types



| Setting / Function               | Distance                           | Connection | PNP Model       | NPN Model       |
|----------------------------------|------------------------------------|------------|-----------------|-----------------|
| Potentiometer and Bargraph       | Depending on the fiber optic model | 2m Cable   | <b>E3X-NA41</b> | <b>E3X-NA11</b> |
| Teach Button and digital display |                                    |            | <b>E3X-SD51</b> | E3X-SD21        |

# E3NX-CA - Colormark Fiber Amplifier

- High signal to noise ratio makes subtle color difference detection easy
- Able to handle glossy materials
- Stable even when lots change



| Model          | Sensor Distance                                 | Connection | Inputs / Outputs    | PNP Model    | NPN Model    |
|----------------|-------------------------------------------------|------------|---------------------|--------------|--------------|
| Standard Model | Sensor distance depends on selected fiber model | 2m Cable   | 1 output            | E3NX-CA41 2M | E3NX-CA11 2M |
| Advanced Model |                                                 |            | 2 outputs / 1 input | E3NX-CA51 2M | E3NX-CA21 2M |

\*For fiber options, or models for special applications, refer to the E32 fibers catalog on the Omron website.

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.



## E3ZM-V - Colormark Detection Sensor

- Compact SUS 316L colormark photoelectric sensor
- Ideal for high contrast colormark detection in a small package
- IP69K and IP67 rated for environmental robustness
- 50 us response time
- Single teach button



| Type                                        | Sensor Distance | Connection   | PNP         | NPN         |
|---------------------------------------------|-----------------|--------------|-------------|-------------|
| Diffuse - reflective (color mark detection) | 12 ± 2mm        | Pre-wired    | E3ZM-V81 2M | E3ZM-V61 2M |
|                                             |                 | M8 Connector | E3ZM-V86    | E3ZM-V66    |

## ZX1 - CMOS Laser Measurement Sensor

- Down to 2um resolution
- Best in class performance for accuracy and speed
- Increased measurement range
- Stable measurement for objects with any surface
- Simple configuration by one-button, Smart Tuning
- Compact size for quick mounting



| Range        | Resolution | Connection | PNP Model       | NPN Model       |
|--------------|------------|------------|-----------------|-----------------|
| 50 ± 10 mm   | 2um        | 2 m Cable  | ZX1-LD50A81 2M  | ZX1-LD50A61 2M  |
| 100 ± 35 mm  | 7um        |            | ZX1-LD100A81 2M | ZX1-LD100A61 2M |
| 300 ± 150 mm | 30um       |            | ZX1-LD300A81 2M | ZX1-LD300A61 2M |
| 600 ± 400 mm | 80um       |            | ZX1-LD600A81 2M | ZX1-LD600A61 2M |

Note: Models with 5-meter cable and pre-wired M12 connector available.

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.

## Sensor Cordsets

- Standard PVC or PUR cordsets for a wide variety of applications
- M8 and M12 connector sizes with 3 and 4 pin configurations
- Straight, right angle, and double ended variations available
- 2m, 5m, and 10m cordset lengths are available. Alternative lengths are also available



| Material | Connector Size | No. of Pins | Length | Straight Connector      | Right Angle Connector  |
|----------|----------------|-------------|--------|-------------------------|------------------------|
| PUR      | M8             | 3 Pins      | 2 m    | XS3F-M8PUR3S2M          | XS3F-M8PUR3A2M         |
|          |                |             | 5 m    | <b>XS3F-M8PUR3S5M</b>   | XS3F-M8PUR3A5M         |
|          |                |             | 10 m   | XS3F-M8PUR3S10M         | XS3F-M8PUR3A10M        |
|          |                | 4 Pins      | 2 m    | XS3F-M8PUR4S2M          | XS3F-M8PUR4A2M         |
|          |                |             | 5 m    | <b>XS3F-M8PUR4S5M</b>   | <b>XS3F-M8PUR4A5M</b>  |
|          |                |             | 10 m   | <b>XS3F-M8PUR4S10M</b>  | XS3F-M8PUR4A10M        |
|          | M12            | 4 Pins      | 2 m    | XS2F-M12PUR4S2M         | XS2F-M12PUR4A2M        |
|          |                |             | 5 m    | <b>XS2F-M12PUR4S5M</b>  | <b>XS2F-M12PUR4A5M</b> |
|          |                |             | 10 m   | <b>XS2F-M12PUR4S10M</b> | XS2F-M12PUR4A10M       |
|          |                | 3 Pins      | 2 m    | XS3F-M8PVC3S2M          | XS3F-M8PVC3A2M         |
|          |                |             | 5 m    | XS3F-M8PVC3S5M          | XS3F-M8PVC3A5M         |
|          |                |             | 10 m   | XS3F-M8PVC3S10M         | XS3F-M8PVC3A10M        |
| PVC      | M8             | 4 Pins      | 2 m    | XS3F-M8PVC4S2M          | XS3F-M8PVC4A2M         |
|          |                |             | 5 m    | XS3F-M8PVC4S5M          | XS3F-M8PVC4A5M         |
|          |                |             | 10 m   | XS3F-M8PVC4S10M         | XS3F-M8PVC4A10M        |
|          | M12            | 3 Pins      | 2 m    | XS2F-M12PVC3S2M         | XS2F-M12PVC3A2M        |
|          |                |             | 5 m    | XS2F-M12PVC3S5M         | XS2F-M12PVC3A5M        |
|          |                |             | 10 m   | XS2F-M12PVC3S10M        | XS2F-M12PVC3A10M       |
|          |                | 4 Pins      | 2 m    | <b>XS2F-M12PVC4S2M</b>  | XS2F-M12PVC4A2M        |
|          |                |             | 5 m    | <b>XS2F-M12PVC4S5M</b>  | <b>XS2F-M12PVC4A5M</b> |
|          |                |             | 10 m   | <b>XS2F-M12PVC4S10M</b> | XS2F-M12PVC4A10M       |

### Double-ended cordsets

| Material | Connector Size | No. of Pins | Length | Straight Connector | Right Angle (Socket)/Straight (Plug) |
|----------|----------------|-------------|--------|--------------------|--------------------------------------|
| PVC      | M12            | 4           | 2 m    | XS2W-D421-D81-F    | XS2W-D424-D81-F                      |
|          |                |             | 5 m    | XS2W-D421-G81-F    | XS2W-D424-G81-F                      |
|          |                |             | 10 m   | XS2W-D421-J81-F    | XS2W-D424-J81-F                      |

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.

## S8VK - Complete Line Of Power Supplies

- Compact single-phase and three-phase power supplies
- Operating Temperature: -40°C to 70°C (S8VK-G and S8VK-T) and -25°C to 60°C (S8VK-C)
- 5 year warranty
- Power Boost Function: 120% for 10s (S8VK-G/T)



| Line                            | Power                                | Output Voltage | Output Current | Capacity | Model              |
|---------------------------------|--------------------------------------|----------------|----------------|----------|--------------------|
| Economy<br>Single-Phase         | 100 to 240 VAC<br><br>90 to 350 VDC  | 24V            | 2.5 A          | 60 W     | <b>S8VK-C06024</b> |
|                                 |                                      |                | 5 A            | 120 W    | <b>S8VK-C12024</b> |
|                                 |                                      |                | 10 A           | 240 W    | S8VK-C24024        |
|                                 |                                      |                | 20 A           | 480 W    | S8VK-C48024        |
| General Purpose<br>Single-phase |                                      | 5V             | 3 A            | 15 W     | S8VK-G01505        |
|                                 |                                      | 12V            | 2.5 A          | 30 W     | S8VK-G03012        |
|                                 |                                      | 24V            | 1.3 A          | 30 W     | S8VK-G03024        |
|                                 |                                      |                | 2.5 A          | 60 W     | <b>S8VK-G06024</b> |
|                                 |                                      |                | 5 A            | 120 W    | <b>S8VK-G12024</b> |
|                                 |                                      |                | 10 A           | 240 W    | <b>S8VK-G24024</b> |
|                                 |                                      |                | 20 A           | 480 W    | S8VK-G48024        |
|                                 |                                      | 48V            | 10 A           | 480 W    | S8VK-G48048        |
| Three-phase                     | 380 to 480 VAC<br><br>450 to 600 VDC | 24V            | 5 A            | 120 W    | S8VK-T12024        |
|                                 |                                      |                | 10 A           | 240 W    | <b>S8VK-T24024</b> |
|                                 |                                      |                | 20 A           | 480 W    | <b>S8VK-T48024</b> |
|                                 |                                      |                | 40 A           | 960 W    | S8VK-T96024        |

Note: Tables include representative part numbers. Bold models: Preferred Availability.

Please refer to the [Component selection guide](#) for more details.



## S8VK-X - Power Supply With EtherNet / IP

- Product replacement time, output voltage, output current, and more can be monitored remotely on the Ethernet/IP network
- Product status can be checked on-site using the indication monitor
- Remote monitoring with included software tool



| Line                                            | Power                               | Output Voltage | Output Current | Capacity | Model                   |
|-------------------------------------------------|-------------------------------------|----------------|----------------|----------|-------------------------|
| EtherNet/IP<br>Communication<br>With Display    | 100 to 240 VAC<br><br>90 to 350 VDC | 24V            | 3.75 A         | 90 W     | <b>S8VK-X09024A-EIP</b> |
|                                                 |                                     |                | 5 A            | 120 W    | <b>S8VK-X12024A-EIP</b> |
|                                                 |                                     |                | 10 A           | 240 W    | <b>S8VK-X24024A-EIP</b> |
| EtherNet/IP<br>Communication<br>Without Display |                                     |                | 2.5 A          | 60 W     | S8VK-X06024-EIP         |
|                                                 |                                     |                | 3.75 A         | 90 W     | <b>S8VK-X09024-EIP</b>  |
|                                                 |                                     |                | 5 A            | 120 W    | S8VK-X12024-EIP         |
|                                                 |                                     |                | 10 A           | 240 W    | S8VK-X24024-EIP         |
|                                                 |                                     |                | 20 A           | 480 W    | S8VK-X48024-EIP         |

## S8V-CP - Electronic Circuit Protector

- Compact design saves panel space compared to standard circuit breakers
- 3-step LED indicators for easy identification of channel status
- 4 and 8 channel models available with individual output current adjustments for various loads
- Available UL Class-2 output model



| Power  | Output Voltage | Number of Outputs | Maximum Input Current | Adjustment Output Current | Model             |
|--------|----------------|-------------------|-----------------------|---------------------------|-------------------|
| 24 VDC | 24 VDC         | 4                 | 40A                   | 2 A up to 10 A            | <b>S8V-CP0424</b> |
|        |                | 8                 | 70A                   | 2 A up to 10 A            | S8V-CP0824        |

Note: Tables include representative part numbers. Bold models: Preferred Availability.

Please refer to the [Component selection guide](#) for more details.

H5CX-N - Digital Timer

- 15 Different timing settings
- High Precision and Excellent Performance
- Available IP66 rating with optional waterproof cover
- Time parameterization from 0.001s to 9999h



| Power          | Terminal Type | Output Type | Model                     |
|----------------|---------------|-------------|---------------------------|
| 12 - 24V AC/DC | Screw         | Relay       | H5CX-AD-N AC24/DC12-24    |
|                |               | Transistor  | H5CX-ASD-N DC12-24/AC24   |
| 100 - 240 VAC  |               | Relay       | <b>H5CX-A-N AC100-240</b> |

H7CX-N - Digital Counters

- Multi-function Counter/Tachometer
- High Precision and Excellent Performance
- Available IP66 rating with optional waterproof cover
- 4 and 6 digit displays are available

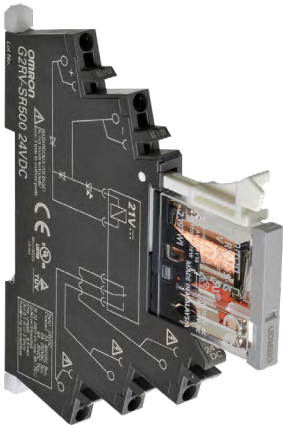


| Power          | Terminal type | Output Type | Display Digits | Model                     |
|----------------|---------------|-------------|----------------|---------------------------|
| 12 - 24V AC/DC | Screw         | Relay       | 6              | <b>H7CX AD-N DC12-24</b>  |
|                |               | Transistor  |                | H7CX-ASD-N DC12-24        |
| 100 - 240 VAC  |               | Relay       |                | <b>H7CX-A-N AC100-240</b> |
|                |               | Transistor  |                | H7CX-AS-N AC100-240       |

Note: Tables include representative part numbers. Bold models: Preferred Availability.  
Please refer to the [Component selection guide](#) for more details.

# G2RV-SR - Slim I/O Relay

- Push-in plus Technology for easy wiring
- Lockable test switch models available for circuit troubleshooting
- LED/mechanical flag available for checking operation
- Slim 6mm width – space saving
- Gold plate contact models available for micro loads



| Coil Voltage | Contact Rating | Contact Form | Screw Terminal Model    | Push-in Terminal Model  | Individual Relay for Replacement |
|--------------|----------------|--------------|-------------------------|-------------------------|----------------------------------|
| 24 VDC       | 6 A            | SPDT         | <b>G2RV-SR700 DC24</b>  | <b>G2RV-SR500 DC24</b>  | G2RV-1-S- DC21                   |
| 110 VAC      |                |              | <b>G2RV-SR700 AC110</b> | <b>G2RV-SR500 AC110</b> | G2RV-1-S DC48                    |
| 230VAC       |                |              | G2RV-SR700 AC230        | G2RV-SR500 AC230        |                                  |

## Accessories

| Description | Number of Poles | Red           | Blue          | Yellow        |
|-------------|-----------------|---------------|---------------|---------------|
| Jumper bar  | 20              | PYDN-6.2-200R | PYDN-6.2-200S | PYDN-6.2-200Y |

Note: Tables include representative part numbers. Bold models: Preferred Availability.  
Please refer to the [Component selection guide](#) for more details.



## G2R-S - Slim Mechanical Relay

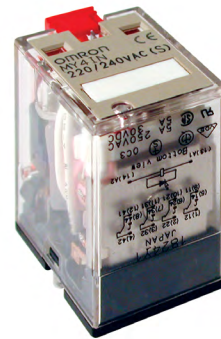
- Lockable test switch models available for circuit troubleshooting
- LED/mechanical flag available for checking operation
- Available DIN-rail mount relay sockets
- Slim 16mm design with socket



| Coil Voltage | Contact Rating | Contact Form | Relay Socket Model   | Relay Model              |
|--------------|----------------|--------------|----------------------|--------------------------|
| 12 VDC       | 10 A           | SPDT         | P2RFZ-05E/P2RF-05-PU | G2R-1-S DC12(S)          |
| 24 VDC       |                |              |                      | <b>G2R-1-S DC24(S)</b>   |
| 120 VAC      |                |              |                      | <b>G2R-1-SN AC120(S)</b> |
| 240 VAC      |                |              |                      | G2R-1-SN AC240(S)        |
| 12 VDC       | 5 A            | DPDT         | P2RFZ-08E/P2RF-08-PU | G2R-2-S DC12(S)          |
| 24 VDC       |                |              |                      | <b>G2R-2-S DC24(S)</b>   |
| 120 VAC      |                |              |                      | <b>G2R-2-S AC120(S)</b>  |
| 240 VAC      |                |              |                      | G2R-2-S AC240(S)         |

## MY - General Purpose Ice Cube Relay

- DPDT type 10 A / 4PDT type 5 A
- Lockable test switch models available for circuit troubleshooting
- LED/mechanical flag available for checking operation
- Low power switching (1 mA at 5 VDC) / Bifurcated 4PDT (0.1 mA at 1 VDC)



| Coil Voltage | Contact Rating | Contact Form | Relay Socket Model  | Relay Model               |
|--------------|----------------|--------------|---------------------|---------------------------|
| 24 VDC       | 10 A           | DPDT         | PYFZ-08-E/PYF-08-PU | <b>MY2N DC24 (S)</b>      |
| 120 VAC      |                |              |                     | <b>MY2N AC110/120 (S)</b> |
| 220 VAC      |                |              |                     | MY2N AC220/240 (S)        |
| 24 VDC       | 5 A            | 4PDT         | PYFZ-14-E/PYF-14-PU | <b>MY4N DC24 (S)</b>      |
| 120 VAC      |                |              |                     | <b>MY4N AC110/120 (S)</b> |
| 220 VAC      |                |              |                     | MY4N AC220/240 (S)        |

Note: Tables include representative part numbers. Bold models: Preferred Availability.

Please refer to the [Component selection guide](#) for more details.

# E5CC/E5DC - General-Purpose Temperature Controllers

- High contrast white PV display
- High-speed sampling at 50ms
- Available auxiliary outputs, event inputs, a transfer output, and a remote SP input
- Short body with a depth of 60mm
- Available IP66 rating with optional waterproof cover



| Dimensions                   | Type of Input                   | Power        | Type of Output | Auxiliary Output                | Standard Model  |                 |
|------------------------------|---------------------------------|--------------|----------------|---------------------------------|-----------------|-----------------|
| 48 x 48 x 60 mm              | Thermocouple, PT100, Analogical | 100 -240 VAC | Relay          | SPST-NO contacts (Relay Output) | E5CC-RX3A5M-000 |                 |
|                              |                                 |              | Voltage        |                                 | E5CC-QX3A5M-000 |                 |
|                              |                                 |              | Current        |                                 | E5CC-CX3A5M-000 |                 |
|                              |                                 | 24 VAC / VDC | Relay          |                                 | E5CC-RX3D5M-000 |                 |
|                              |                                 |              | Voltage        |                                 | E5CC-QX3D5M-000 |                 |
|                              |                                 |              | Current        |                                 | E5CC-CX3D5M-000 |                 |
| 22.5mm<br>For DIN rail mount |                                 |              | 100-240 VAC    |                                 | Relay           | E5DC-RX2ASM-000 |
|                              |                                 |              |                |                                 | Current         | E5DC-CX2ASM-000 |
|                              |                                 |              | 24VAC / VDC    |                                 | Relay           | E5DC-RX2DSM-000 |
|                              | Voltage                         |              |                | E5DC-QX2DSM-002                 |                 |                 |

Note: Tables include representative part numbers. Bold models: Preferred Availability.  
Please refer to the [Component selection guide](#) for more details.

K6CM - Motor Condition Monitor

- 24/7 remote monitoring of critical 3-phase induction motors
- Can monitor motor vibration, temperature, current, and insulation resistance depending on model
- EtherNet/IP and Modbus TCP communication
- Included monitoring software tool can monitor up to 10 motors at one time



| Motor failure mode   | Description                                                    | Power     | Controller model      | Sensor Model                                                                             |
|----------------------|----------------------------------------------------------------|-----------|-----------------------|------------------------------------------------------------------------------------------|
| Bearing Wear         | Monitors motor vibration/temperature with sensor               | 24 VAC/DC | <b>K6CM-VBMD-EIP</b>  | <b>K6CM-VBS1</b>                                                                         |
| Overload Condition   | Monitors motor current and degradation level using a CT sensor | 24 VAC/DC | <b>K6CM-CI2MD-EIP</b> | <b>K6CM-CICB025</b><br><b>K6CM-CICB100</b><br><b>K6CM-CICB200</b><br><b>K6CM-CICB400</b> |
| Insulation breakdown | Monitors motor insulation and current leakage with sensor      | 24 VAC/DC | K6CM-ISMD-EIP         | K6CM-ISZBI52                                                                             |

K6PM - Thermal Condition Monitor

- 24/7 remote thermal monitoring of equipment using infrared thermal image sensors
- Thermal Imaging Sensor that detects temperatures 32-392°F (0-200°C)
- EtherNet/IP and Modbus TCP communication
- Included monitoring software tool can monitor up to 155 sensors at one time



| Power     | Controller    | Thermal image Sensor |
|-----------|---------------|----------------------|
| 24 VAC/DC | K6PM-THMD-EIP | <b>K6PM-THS3232</b>  |

Note: Tables include representative part numbers. Bold models: Preferred Availability.  
Please refer to the [Component selection guide](#) for more details.

## K8AK / K8DS – Monitoring Relays

- Three-phase and single-phase relays for voltage and current monitoring
- Complete line for monitoring sequence and phase drop, asymmetry, under or over control
- Supply voltages: 24 VAC/DC, 100 to 240 VAC, 380-480 VAC
- Special models for monitoring temperature and liquid level



| Phase        | Dimensions                  | Monitoring Type                                          | Input                       | Output Contact Form | Model                                             |
|--------------|-----------------------------|----------------------------------------------------------|-----------------------------|---------------------|---------------------------------------------------|
| Single-Phase | K8AK - 22.5 x 90 x 100 [mm] | Over Current                                             | 24 VAC/DC or 100 to 240 VAC | SPDT                | K8AK-AS2 24VAC/DC                                 |
|              |                             | Overvoltage and Undervoltage                             | 24 VAC/DC or 100 to 240 VAC | SPDT                | K8AK-VW2 24VAC/DC                                 |
| Three-Phase  | K8DS: 17.5 x 80 x 69 [mm]   | Phase Drop and Phase Sequence                            | 200-480 VAC                 | DPDT<br>SPDT        | <b>K8AK-PH1 200/500VAC</b><br>K8DS-PH1 200/480VAC |
|              |                             | Phase Drop, Phase Sequence, Overvoltage and Undervoltage | 200-240 VAC                 | (2) SPDT            | K8AK-PM1 200/240VAC                               |
|              |                             |                                                          | 380-480 VAC                 |                     | K8AK-PM2 380/480VAC                               |

Note: Tables include representative part numbers. Bold models: Preferred Availability.  
Please refer to the [Component selection guide](#) for more details.



## A2W - Wireless Pushbutton

- 8 pushbuttons can be assigned to one receiver unit
- Each receiver has 8 transistor outputs (one-shot operation)
- LED signal strength indicator on each button
- Battery-less pushbutton (uses self-generating power)



### Pushbutton Unit

| Type       | Button type | Frequency (MHz) | Area                    | Button color | Flange color | Model            |
|------------|-------------|-----------------|-------------------------|--------------|--------------|------------------|
| Pushbutton | Mushroom    | 922.5           | United States or Canada | Green        | Black        | A2W-TC-WC1 US1GB |
|            | Full guard  |                 |                         | Red          | Black        | A2W-TC-WC1 US2RB |
|            |             |                 |                         | Green        | Black        | A2W-TC-WC1 US2GB |
|            |             |                 |                         | Yellow       | Black        | A2W-TC-WC1 US2YB |
|            |             |                 |                         | Blue         | Black        | A2W-TC-WC1 US2AB |
|            |             |                 |                         | Black        | Black        | A2W-TC-WC1 US2BB |

### Receiver Unit

| Type     | Frequency (MHz) | Area                    | Output configuration | Model          |
|----------|-----------------|-------------------------|----------------------|----------------|
| Receiver | 922.5           | United States or Canada | PNP                  | A2W-RCP-WC1 US |

Note: This product is a wireless device that conforms to the radio regulations of United States or Canada. It cannot be used outside of United States or Canada.

### Accessories (sold separately)

| Type                                   | Model         | Remarks                                                                               |
|----------------------------------------|---------------|---------------------------------------------------------------------------------------|
| High-sensitivity magnetic-base antenna | A2W-AT2.5-WC1 | Frequencies: all frequencies supported, cable length 2.5 m Degree of protection: IP65 |

Note: Tables include representative part numbers. Bold models: Preferred Availability.

Please refer to the [Component selection guide](#) for more details.

## A22N / M22N - Push Buttons And Indicators

- Complete line with Ø 22mm assemblies
- Various colors and models with plastic or metallic bezels
- Color coded contact blocks to prevent assembly errors
- Easy installation and IP66 degree of protection



| Type                        | Bezel material                                    | Color                                                                                 | Contact           | LED Voltage                                                                                                                          | Model                 |
|-----------------------------|---------------------------------------------------|---------------------------------------------------------------------------------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| A22NN - Push Button         | (1) Bezel Material<br>B – Plastic<br>R – Metallic | (2) Color<br>B – Red<br>G – Green<br>Y – Yellow<br>W – White<br>A – Blue<br>B – Black | 1 NO              | (3) LED Voltage<br>N – No lighting<br>A – 6 VAC/VDC<br>B – 12 VAC/VDC<br>C – 24VAC/VDC<br>D – 100/120 VAC/VDC<br>E – 200/240 VAC/VDC | A22NN-RNM-NGA-G100-NN |
|                             |                                                   |                                                                                       | 1 NO              |                                                                                                                                      | A22NN-RNM-NBA-G100-NN |
| A22NL - Lighted Push Button |                                                   |                                                                                       | 1 NO              |                                                                                                                                      | A22NL-BGM-TGA-G100-GC |
|                             |                                                   |                                                                                       | 1 NO              |                                                                                                                                      | A22NL-RPM-TRA-G100-RC |
| M22N - Indicators           |                                                   |                                                                                       | ---               |                                                                                                                                      | M22N-BC-TYA-YC        |
|                             |                                                   |                                                                                       | ---               |                                                                                                                                      | M22N-BN-TGA-GC        |
| A22NS - Selector            |                                                   |                                                                                       | 2 positions - 1NO |                                                                                                                                      | A22NS-2RM-NBA-G100-NN |
|                             |                                                   |                                                                                       | 3 positions - 2NO |                                                                                                                                      | A22NS-3RM-NBA-G101-NN |
| A22NK - Selector with Key   |                                                   | ----                                                                                  | 2 positions - 1NO | ----                                                                                                                                 | A22NK-2RM-01AA-G100   |
|                             |                                                   |                                                                                       | 2 positions - 1NO |                                                                                                                                      | A22NK-2RL-01BA-G100   |

| Item              | Model       |
|-------------------|-------------|
| Contact block 1NO | A22NZ-S-G1A |
| Contact block 1NC | A22NZ-S-G1B |

Note: Tables include representative part numbers. Bold models: Preferred Availability.

Please refer to the [Component selection guide](#) for more details.

## CP1H – MicroPLC for 4 Axis Position Control and High Speed Control

- High-speed counters with differential phases and pulse outputs for 4 axes control. Easily handles multi-axis control with a single unit.
- Up to two Ethernet ports and two serial ports when selecting the appropriate optional communications boards
- Up to 40 Built in I/O points with Analog I/O built in on XA CPU units
- Over 30 different expansion units for I/O, temperature sensing and communications



| Type                                                                                     | Input Points | Output Points | Expandable up to* | Program Capacity | Data Memory Capacity | Power Supply     | Output Method                 | Built-In Functions            |     |                | Model         |
|------------------------------------------------------------------------------------------|--------------|---------------|-------------------|------------------|----------------------|------------------|-------------------------------|-------------------------------|-----|----------------|---------------|
|                                                                                          |              |               |                   |                  |                      |                  |                               | E                             | I/C | P              |               |
| CP1H-X with pulse outputs for 4 axes                                                     | 24           | 16            | 320 points        | 20K steps        | 32K words            | 85 to 264 VAC    | Relay output                  | 4                             | 8   | --             | CP1H-X40DR-A  |
|                                                                                          |              |               |                   |                  |                      | 20.4 to 26.4 VDC | Transistor output (sink type) | 4                             | 8   | 4              | CP1H-X40DT-D  |
| Transistor output (source type)                                                          |              |               |                   |                  |                      |                  | 4                             | 8                             | 4   | CP1H-X40DT1-D  |               |
| CP1H-XA with built-in analog I/O (4 analog inputs/2 analog outputs; 1/12,000 resolution) |              |               |                   |                  |                      | 85 to 264 VAC    | Relay output                  | 4                             | 8   | --             | CP1H-XA40DR-A |
|                                                                                          |              |               |                   |                  |                      |                  | 20.4 to 26.4 VDC              | Transistor output (sink type) | 4   | 8              | 4             |
| Transistor output (source type)                                                          |              |               |                   |                  |                      | 4                |                               | 8                             | 4   | CP1H-XA40DT1-D |               |
| CP1H-Y with 1-MHz pulse I/O                                                              | 12           | 8             | 300 points        |                  |                      |                  | Transistor output (sink type) | 4**                           | 6   | 4**            | CP1H-Y20DT-D  |

Note: Built-in functions: E = Encoder inputs; I/C = Interrupts/counters; P = Pulse outputs

\*CP1H CPU series can be expanded with CP-series Expansion Units and CJ1 Special I/O Units.

\*\* Encoder inputs: 2x 1 MHz + 2x 100 kHz; Pulse outputs: 2x 1 MHz + 2x 100 kHz.

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.

## CP2E - Micro PLC for Data Collection and Machine-To-Machine Communication

- Up to five communications channels: dual Ethernet and up to three serial ports for data collection, machine-to-machine or IIoT
- Built-in I/O of either 14, 20, 30, 40 or 60 points with up to 180 I/O points when using expansion modules
- Up to four axes of motion control for precise machine movement



### CP2E-N/Network Models

| I/O points | Specifications        |        |         |               |                                          |      |               |                 |                     |
|------------|-----------------------|--------|---------|---------------|------------------------------------------|------|---------------|-----------------|---------------------|
|            | Power Supply          | Inputs | Outputs | Output Type   | Communications                           | Axis | Option Boards | Expansion Units | Model               |
| 14         | 100 to 240 VAC        | 8      | 6       | Relay         | 1 Ethernet port<br>Up to 2 serial ports  | 2    | 1             |                 | CP2E-N14DR-A        |
|            | Transistor (sinking)  |        |         | CP2E-N14DT-A  |                                          |      |               |                 |                     |
|            | Relay                 |        |         | CP2E-N14DR-D  |                                          |      |               |                 |                     |
|            | Transistor (sinking)  |        |         | CP2E-N14DT-D  |                                          |      |               |                 |                     |
|            | Transistor (sourcing) |        |         | CP2E-N14DT1-D |                                          |      |               |                 |                     |
| 20         | 100 to 240 VAC        | 12     | 8       | Relay         | 1 Ethernet port<br>Up to 2 serial ports  | 2    | 1             |                 | CP2E-N20DR-A        |
|            | Transistor (sinking)  |        |         | CP2E-N20DT-A  |                                          |      |               |                 |                     |
|            | Relay                 |        |         | CP2E-N20DR-D  |                                          |      |               |                 |                     |
|            | Transistor (sinking)  |        |         | CP2E-N20DT-D  |                                          |      |               |                 |                     |
|            | Transistor (sourcing) |        |         | CP2E-N20DT1-D |                                          |      |               |                 |                     |
| 30         | 100 to 240 VAC        | 18     | 12      | Relay         | 2 Ethernet ports<br>Up to 3 serial ports | 4    | 2             | 3               | <b>CP2E-N30DR-A</b> |
|            | Transistor (sinking)  |        |         | CP2E-N30DT-A  |                                          |      |               |                 |                     |
|            | Relay                 |        |         | CP2E-N30DR-D  |                                          |      |               |                 |                     |
|            | Transistor (sinking)  |        |         | CP2E-N30DT-D  |                                          |      |               |                 |                     |
|            | Transistor (sourcing) |        |         | CP2E-N30DT1-D |                                          |      |               |                 |                     |
| 40         | 100 to 240 VAC        | 24     | 16      | Relay         | 2 Ethernet ports<br>Up to 3 serial ports | 4    | 2             | 3               | <b>CP2E-N40DR-A</b> |
|            | Transistor (sinking)  |        |         | CP2E-N40DT-A  |                                          |      |               |                 |                     |
|            | Relay                 |        |         | CP2E-N40DR-D  |                                          |      |               |                 |                     |
|            | Transistor (sinking)  |        |         | CP2E-N40DT-D  |                                          |      |               |                 |                     |
|            | Transistor (sourcing) |        |         | CP2E-N40DT1-D |                                          |      |               |                 |                     |
| 60         | 100 to 240 VAC        | 36     | 24      | Relay         | 2 Ethernet ports<br>Up to 3 serial ports | 4    | 2             | 3               | CP2E-N60DR-A        |
|            | Transistor (sinking)  |        |         | CP2E-N60DT-A  |                                          |      |               |                 |                     |
|            | Relay                 |        |         | CP2E-N60DR-D  |                                          |      |               |                 |                     |
|            | Transistor (sinking)  |        |         | CP2E-N60DT-D  |                                          |      |               |                 |                     |
|            | Transistor (sourcing) |        |         | CP2E-N60DT1-D |                                          |      |               |                 |                     |

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.



## CP2E - Micro PLC (continued)

- Function block library for expedited program development
- Analog, high speed counters, pulse outputs, linear interpolation and PWM output facilitates a wide range of applications



### CP2E-S/Standard Models

| I/O points | Specifications        |        |         |                      |                                     |      |               |                 |              |
|------------|-----------------------|--------|---------|----------------------|-------------------------------------|------|---------------|-----------------|--------------|
|            | Power Supply          | Inputs | Outputs | Output Type          | Communications                      | Axis | Option Boards | Expansion Units | Model        |
| 30         | 100 to 240 VAC        | 18     | 12      | Relay                | 1 x RS-232C port<br>1 x RS-485 port | 2    | ----          | 3               | CP2E-S30DR-A |
|            | 24 VDC                |        |         | Transistor (sinking) |                                     |      |               |                 | CP2E-S30DT-D |
|            | Transistor (sourcing) |        |         | CP2E-S30DT1-D        |                                     |      |               |                 |              |
| 40         | 100 to 240 VAC        | 24     | 16      | Relay                | 1 x RS-232C port<br>1 x RS-485 port | 2    | ----          | 3               | CP2E-S40DR-A |
|            | 24 VDC                |        |         | Transistor (sinking) |                                     |      |               |                 | CP2E-S40DT-D |
|            | Transistor (sourcing) |        |         | CP2E-S40DT1-D        |                                     |      |               |                 |              |
| 60         | 100 to 240 VAC        | 36     | 24      | Relay                | 1 x RS-232C port<br>1 x RS-485 port | 2    | ----          | 3               | CP2E-S60DR-A |
|            | 24 VDC                |        |         | Transistor (sinking) |                                     |      |               |                 | CP2E-S60DT-D |
|            | Transistor (sourcing) |        |         | CP2E-S60DT1-D        |                                     |      |               |                 |              |

### CP2E-E/Essential Models

| I/O points | Specifications |        |         |             |                  |      |               |                 |                     |
|------------|----------------|--------|---------|-------------|------------------|------|---------------|-----------------|---------------------|
|            | Power Supply   | Inputs | Outputs | Output Type | Communications   | Axis | Option Boards | Expansion Units | Model               |
| 14         | 100 to 240 VAC | 8      | 6       | Relay       | 1 x RS-232C port | ---- | ----          | 3               | CP2E-E14DR-A        |
| 20         |                | 12     | 8       | Relay       | 1 x RS-232C port | ---- | ----          | 3               | CP2E-E20DR-A        |
| 30         |                | 18     | 12      | Relay       | 1 x RS-232C port | ---- | ----          | 3               | <b>CP2E-E30DR-A</b> |
| 40         |                | 24     | 16      | Relay       | 1 x RS-232C port | ---- | ----          | 3               | CP2E-E40DR-A        |
| 60         |                | 36     | 24      | Relay       | 1 x RS-232C port | ---- | ----          | 3               | CP2E-E60DR-A        |

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.

## CP1L - Micro PLC

- Compact PLC for up to 180 I/O points
- Programming via USB port or Ethernet port based on model
- Optional boards for Analog, Serial and Ethernet communication on select models
- Supports up to 4 encoders and 2 pulse train outputs (transistor models only)



| Family  | Power Supply   | Amount of I/Os in the CPU |         |           | Expansion Units | Communication Ports | Option Boards | Output Type           | Model                 |
|---------|----------------|---------------------------|---------|-----------|-----------------|---------------------|---------------|-----------------------|-----------------------|
|         |                | Digital                   |         | Analog    |                 |                     |               |                       |                       |
|         |                | Inputs                    | Outputs | Inputs    |                 |                     |               |                       |                       |
| CP1L-EM | 24 VDC         | 24                        | 16      | 2 (0-10V) | 3               | Ethernet FINS       | 2             | Transistor (sourcing) | <b>CP1L-EM40DT1-D</b> |
|         | 24 VDC         | 24                        | 16      | 2 (0-10V) | 3               | Ethernet FINS       | 2             | Relay                 | <b>CP1L-EM40DR-D</b>  |
|         | 24 VDC         | 18                        | 12      | 2 (0-10V) | 3               | Ethernet FINS       | 2             | Transistor (sourcing) | CP1L-EM30DT1-D        |
|         | 24 VDC         | 18                        | 12      | 2 (0-10V) | 3               | Ethernet FINS       | 2             | Relay                 | <b>CP1L-EM30DR-D</b>  |
| CP1L-EL | 24 VDC         | 12                        | 8       | 2 (0-10V) | 1               | Ethernet FINS       | 1             | Transistor (sourcing) | CP1L-EL20DT1-D        |
|         | 24 VDC         | 12                        | 8       | 2 (0-10V) | 1               | Ethernet FINS       | 1             | Relay                 | CP1L-EL20DR-D         |
| CP1L-M  | 100 to 240 VAC | 24                        | 16      | No        | 3               | USB                 | 2             | Relay                 | <b>CP1L-M40DR-A</b>   |
|         | 24 VDC         | 24                        | 16      | No        | 3               | USB                 | 2             | Relay                 | <b>CP1L-M40DR-D</b>   |
|         | 24 VDC         | 24                        | 16      | No        | 3               | USB                 | 2             | Transistor (sourcing) | <b>CP1L-M40DT1-D</b>  |
|         | 100 to 240 VAC | 18                        | 12      | No        | 3               | USB                 | 2             | Relay                 | <b>CP1L-M30DR-A</b>   |
|         | 24 VDC         | 18                        | 12      | No        | 3               | USB                 | 2             | Relay                 | CP1L-M30DR-D          |
|         | 24 VDC         | 18                        | 12      | No        | 3               | USB                 | 2             | Transistor (sourcing) | CP1L-M30DT1-D         |
| CP1L-L  | 24 VDC         | 12                        | 8       | No        | 1               | USB                 | 1             | Transistor (sourcing) | <b>CP1L-L20DT1-D</b>  |
|         | 24 VDC         | 12                        | 8       | No        | 1               | USB                 | 1             | Transistor (sinking)  | CP1L-L20DT-D          |
|         | 100 to 240 VAC | 12                        | 8       | No        | 1               | USB                 | 1             | Relay                 | <b>CP1L-L20DR-A</b>   |
|         | 24 VDC         | 12                        | 8       | No        | 1               | USB                 | 1             | Relay                 | CP1L-L20DR-D          |
|         | 24 VDC         | 8                         | 6       | No        | 1               | USB                 | 1             | Transistor (sinking)  | CP1L-L14DT-D          |
|         | 100 to 240 VAC | 8                         | 6       | No        | 1               | USB                 | 1             | Relay                 | <b>CP1L-L14DR-A</b>   |

### Expansion Modules and Accessories

| Family                                          | Communication Ports                                                          | Model          |
|-------------------------------------------------|------------------------------------------------------------------------------|----------------|
| Digital Expansions                              | 8 Inputs                                                                     | CP1W-8ED       |
|                                                 | 8 Relay Outputs                                                              | CP1W-8ER       |
|                                                 | 16 Relay Outputs                                                             | CP1W-16ER      |
|                                                 | 12 Inputs and 8 PNP Transistor Outputs                                       | CP1W-20EDT1    |
|                                                 | 24 Inputs and 16 Relay Outputs                                               | CP1W-40EDR     |
| Analog Expansions<br>Resolution of 12000 points | 4 Inputs (0 to 5V, 1 to 5V, 0 to 10V, -10 to + 10V, 0 to 20mA and 4 to 20mA) | CP1W-AD042     |
|                                                 | 4 Outputs (1 to 5V, 0 to 10V, -10 to + 10V, 0 to 20mA and 4 to 20mA)         | CP1W-DA042     |
|                                                 | 2 Inputs (0 to 5V, 1 to 5V, 0 to 10V, -10 to + 10V, 0 to 20mA and 4 to 20mA) | CP1W-MAD42     |
|                                                 | 1 Output (1 to 5V, 0 to 10V, -10 to + 10V, 0 to 20mA and 4 to 20mA)          | CP1W-MAD42     |
| Optional Communication Adapters                 | RS-232C Serial Port (15m Distance)                                           | CP1W-CIF01     |
|                                                 | RS-422A/485 Serial Port (50m Distance)                                       | CP1W-CIF11     |
|                                                 | RS-422A/485 Serial Port (500m Distance)                                      | CP1W-CIF12     |
| Software                                        | Programming Software with 1 license                                          | CXONE-AL01D-V4 |

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.

## NX1P - Machine Automation Controllers

- Compact entry model with integrated motion and machine control. Connectivity to safety and vision systems
- Up to 4 axes of coordinated motion control plus 4 axes point to point control
- Expandable I/O using up to 8 NX series I/O cards on local bus
- Built in EtherCAT and EtherNet/IP ports
- Connect up to 16 EtherCAT Slaves
- Sysmac Studio IDE for flexible, scalable programming



| Built-In Digital I/O |         | Specifications                                        | Number of Coordinated axes* | Number of point-to-point axes** | Total Axes | Option Boards | Model                 |
|----------------------|---------|-------------------------------------------------------|-----------------------------|---------------------------------|------------|---------------|-----------------------|
| Inputs               | Outputs |                                                       |                             |                                 |            |               |                       |
| 14                   | 10      | 1.5MB of programming memory, min cycle time up to 2ms | 0                           | 4                               | 4          | 1 Slot        | <b>NX1P2-9024-DT1</b> |
| 24                   | 16      |                                                       | 2                           |                                 | 6          | 2 Slots       | <b>NX1P2-1040-DT1</b> |
| 24                   | 16      |                                                       | 4                           |                                 | 8          |               | NX1P2-1140-DT1        |

\* Coordinated Axes Include:

- Point to Point Positioning
- Synchronized Motion (Gearing/Camming)
- Multi-Axes Coordinated Motion (Circular/Linear Interpolation)
- Axes grouping

\*\*Point to Point axes Include:

- Only Point to Point Positioning
- No Synchronized Motion
- No Multi-Axes Coordinated Motion
- No Axes Grouping

Note: PNP transistor Output options shown. For NPN options, go to [automation.omron.com](http://automation.omron.com)

### Option Boards

| Type                      | Description                                                                                                                                                                                                                        | Communication Protocol                       | Model       |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|-------------|
| Serial Communication      | 1 x RS-232C port Transmission Distance: 15 m Connector type: Spring terminal (9 terminals)                                                                                                                                         | Host link, Modbus-RTU Master and no-protocol | NX1W-CIF01  |
|                           | 1 RS-422A/485 Transmission Distance: 50 m Connector type: Spring terminal (5 terminals)                                                                                                                                            |                                              | NX1W-CIF11  |
|                           | 1 RS-422A/485 port (isolated) Transmission Distance: 500 m Connector type: Spring terminal (5 terminals)                                                                                                                           |                                              | NX1W-CIF12  |
| Analog Inputs and Outputs | 2 x Analog inputs<br>Voltage input: 0 to 10 V (Resolution: 1/4,000)<br>Input current: 0 to 20 mA (1/2,000)<br>Connector type: Spring terminal (5 terminals)                                                                        |                                              | NX1W-ADB21  |
|                           | 2 x Analog inputs / 2 x Analog output<br>Voltage input: 0 to 10 V (Resolution: 1/4,000)<br>Input current: 0 to 20 mA (1/2,000)<br>Voltage output: 0 to 10 V (Resolution: 1/4,000)<br>Connector Type: Spring terminal (8 terminals) |                                              | NX1W-MAB221 |

Note: The expansion cards of the NX1P machine controller line are the same as the NX Series I/O cards.

For information on virtual axes, refer to the catalog on the website [automation.omron.com](http://automation.omron.com)

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.

## NX102 - Machine Automation Controller

- Compact controller integrates production line, safety systems, and IT systems
- EtherCAT (1 port) and EtherNet/IP (2 ports) communication on the same CPU
- OPC UA server functionality
- Up to 8 axes of coordinated motion plus 4 axes of point-to-point control
- Embedded SQL Client Option
- Connect up to 64 EtherCAT slaves
- Expandable IO using up to 32 NX Series I/O cards on local bus
- Sysmac Studio IDE for flexible, scalable programming



| Family | Specifications                                   | Number of Coordinated axes * | Number of point-to-point axes ** | Total Axes | SQL | Model             |
|--------|--------------------------------------------------|------------------------------|----------------------------------|------------|-----|-------------------|
| NX102  | 5 MB of programming memory, Min. cycle up to 1ms | 0                            | 4                                | 4          | No  | <b>NX102-9000</b> |
|        |                                                  |                              |                                  |            | Yes | <b>NX102-9020</b> |
|        |                                                  | 2                            |                                  | 6          | No  | <b>NX102-1000</b> |
|        |                                                  |                              |                                  |            | Yes | NX102-1020        |
|        |                                                  | 4                            |                                  | 8          | No  | NX102-1100        |
|        |                                                  |                              |                                  |            | Yes | NX102-1120        |
|        |                                                  | 8                            |                                  | 12         | No  | NX102-1200        |
|        |                                                  |                              |                                  |            | Yes | NX102-1220        |

Note: The NX-END02 terminal cover is included with the NX102. The HMC-SD291 memory card is supplied with the NX102-\_\_ 20. The battery is not mounted when the product is shipped. Refer to the datasheet for details.

For information on virtual axes, refer to the catalog on Omron website [automation.omron.com](http://automation.omron.com)

\* Coordinated Axes Include:

- Point to Point Positioning
- Synchronized Motion (Gearing/Camming)
- Multi-Axes Coordinated Motion (Circular/Linear Interpolation)
- Axes grouping

\*\*Point to Point axes Include:

- Only Point to Point Positioning
- No Synchronized Motion
- No Multi-Axes Coordinated Motion
- No Axes Grouping

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.



## NJ - Machine Automation Controllers

- One integrated controller designed to meet extreme requirements in terms of logic sequence, motion control speed, accuracy, and system size
- EtherCAT and Ethernet IP communication on the same CPU
- Ability to manage logic, motion, safety and vision tasks
- Embedded SQL Client Option
- Expandable I/O Using up to 10 CJ Expansion cards
- Sysmac Studio IDE for flexible, scalable programming



| Family | Specifications                                                            | Number of axes | OPC UA | SQL | Model             |
|--------|---------------------------------------------------------------------------|----------------|--------|-----|-------------------|
| NJ1    | 64 EtherCAT slaves, 3 MB of programming memory, Min. cycle time: 1ms      | 0              | No     | No  | NJ101-9000        |
|        |                                                                           |                | No     | Yes | NJ101-9020        |
|        |                                                                           | 2              | No     | No  | NJ101-1000        |
|        |                                                                           |                | No     | Yes | NJ101-1020        |
| NJ3    | 192 EtherCAT slaves, 5 MB of programming memory, Min. cycle time: 1ms     | 4              | No     | No  | NJ301-1100        |
|        |                                                                           | 8              | No     | No  | NJ301-1200        |
| NJ5    | 192 EtherCAT slaves, 20 MB of programming memory, Min. cycle time: 0.5 ms | 16             | Yes    | No  | NJ501-1300        |
|        |                                                                           |                | No     | Yes | <b>NJ501-1320</b> |

Note: For information on virtual axes, refer to the catalog on the website [automation.omron.com](http://automation.omron.com)

### Power Supplies

| Power Supplies | Capacity | RUN Indicator | Model            |
|----------------|----------|---------------|------------------|
| 100 to 240VAC  | 30W      | NO Relay      | <b>NJ-PA3001</b> |
| 24 VDC         |          |               | <b>NJ-PD3001</b> |

### Software and Switches

| Type     | Description                  | Model          |
|----------|------------------------------|----------------|
| Software | Sysmac Studio IDE 1 License  | SYSMAC-SE201L  |
| Hub      | Hub EtherCAT with 3 Ports    | GX-JC03        |
|          | Hub EtherCAT with 6 Ports    | <b>GX-JC06</b> |
|          | Hub EtherNet/IP with 3 Ports | W4S1-03B       |
|          | Hub EtherNet/IP with 5 Ports | W4S1-05B       |

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.

# NX7 - Machine Automation Controllers

- Highest performance Sysmac CPU, designed to address the most demanding industrial control and motion applications, laying the infrastructure for Big Data support
- EtherCAT (1 port) and EtherNet/IP (2 ports) communication on the same CPU
- Dual-core Motion
- 128 or 256 Axes of Motion
- Embedded SQL Client Option
- Sysmac Studio IDE for flexible, scalable programming



| Family | Specification                                            | Number of Coordinated Axes | SQL | Model Number      |
|--------|----------------------------------------------------------|----------------------------|-----|-------------------|
| NX7    | 80 MB of programming memory, minimum cycle time 0.125 ms | 128                        | YES | <b>NX701-1620</b> |

## Power Supplies

| Power Supplies | Capacity | RUN Indicator | Model     |
|----------------|----------|---------------|-----------|
| 100 to 240VAC  | 90W      | NO Relay      | NX-PA9001 |
| 24 VDC         | 70W      |               | NX-PD7001 |

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.

## NX - Remote I/O

- Wide variety of high density remote I/O Modules
- Ideal match with Sysmac Machine automation controllers
- EtherCAT and EtherNet/IP coupler options
- Platform Agnostic. Easy connectivity to 3rd party systems
- Removable wiring terminals for easy system assembly and testing



| Type                 | Description                                    | Model            |
|----------------------|------------------------------------------------|------------------|
| Digital I/O          | 8 Digital Inputs (NPN)                         | NX-ID4342        |
|                      | 8 Digital Inputs (PNP)                         | <b>NX-ID4442</b> |
|                      | 16 Digital Inputs (NPN)                        | <b>NX-ID5342</b> |
|                      | 16 Digital Inputs (PNP)                        | <b>NX-ID5442</b> |
|                      | 8 Relay NO Outputs                             | <b>NX-OC4633</b> |
|                      | 8 Digital Outputs (NPN)                        | NX-OD4121        |
|                      | 8 Digital Outputs (PNP)                        | <b>NX-OD4256</b> |
|                      | 16 digital outputs (NPN)                       | <b>NX-OD5121</b> |
|                      | 16 digital outputs (PNP)                       | <b>NX-OD5256</b> |
| Analog I/O           | 4 4-20 mA Analog Inputs                        | <b>NX-AD3203</b> |
|                      | 4 4-20mA Analog Outputs                        | <b>NX-DA3203</b> |
|                      | 4 Analog Inputs -10 to +10 V                   | <b>NX-AD3603</b> |
|                      | 4 Analog Outputs -10 to +10 V                  | <b>NX-DA3603</b> |
| Temperature control  | 4 Thermocouple Inputs                          | <b>NX-TS3101</b> |
|                      | 4 RTD Inputs                                   | <b>NX-TS3201</b> |
| Weighing             | 1 Input for Load Cell                          | <b>NX-RS1201</b> |
| Position control     | 1 Line-Driver Pulsed Output                    | NX-PG0122        |
|                      | 1 Incremental Encoder Input                    | NX-EC0122        |
| Serial Communication | 1 RS232C Interface                             | NX-CIF101        |
|                      | 1 RS485/422A Interface                         | NX-CIF105        |
| IIoT                 | IO-Link Master Interface for 4 IO-Link Devices | <b>NX-ILM400</b> |
| Accessories          | Additional Supply for I/Os (4A)                | NX-PF0630        |
|                      | Additional Supply for I/Os (10A)               | <b>NX-PF0730</b> |
|                      | Additional Source for Communication Bus        | <b>NX-PD1000</b> |

## Couplers

| Network     | Communications Cycle  | Current Consumption | Maximim I/O power supply current | Model            |
|-------------|-----------------------|---------------------|----------------------------------|------------------|
| EtherCAT    | 250 to 4,000 $\mu$ s  | 1.45 W or lower     | 4A                               | NX-ECC201        |
|             |                       |                     | 10A                              | <b>NX-ECC202</b> |
|             | 125 to 10,000 $\mu$ s | 1.25 W or lower     |                                  | <b>NX-ECC203</b> |
| EtherNet/IP | -                     | 1.50W or lower      |                                  | <b>NX-EIC202</b> |

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.

## NB - Basic Graphic HMI

- 65K Color TFT display with LED backlight
- Data Logging/Trending, Recipes, Alarms, Remote web viewing
- Graphics Library and Animation
- Free NB Designer programming software
- Preferred for Omron CP controllers



| Size | Description            |            | Model              |
|------|------------------------|------------|--------------------|
|      | Communication Port     | Resolution |                    |
| 3.5" | RS232C/RS422           | 320 × 234  | NB3Q-TW00B         |
| 5.6" | RS232C/RS422, Ethernet |            | <b>NB5Q-TW01B</b>  |
| 5.6" | RS232C/RS422           |            | <b>NB5Q-TW00B</b>  |
| 7"   | RS232C/RS422, Ethernet | 800 × 480  | <b>NB7W-TW01B</b>  |
| 7"   | RS232C/RS422           |            | <b>NB7W-TW00B</b>  |
| 10"  | RS232C/RS422, Ethernet |            | <b>NB10W-TW01B</b> |

Note: For more information, refer to the catalog on the website [automation.omron.com](http://automation.omron.com)

## NS - Standard Graphic HMI

- High resolution displays QVGA (5.7") to XGA (15") with LED back lighting
- Ladder Monitor, Programming Console and Troubleshooter for Omron Controllers
- FTP Interface with Ethernet models
- CX Designer programming software
- Preferred for Omron CJ/CS controllers



| Size  | Description        |                       | Model                |
|-------|--------------------|-----------------------|----------------------|
|       | Communication Port | Resolution            |                      |
| 5.7"  | RS232C             | 320 x 240 Resolution  | <b>NS5-SQ10B-V2</b>  |
| 8.4"  | EtherNet, RS232C   | 640 x 480 Resolution  | <b>NS8-TV01B-V2</b>  |
| 10.4" | RS232C             | 640 x 480 Resolution  | NS10-TV00B-V2        |
| 12.1" | EtherNet, RS232C   | 800 x 600 Resolution  | <b>NS12-TS01B-V2</b> |
| 15"   | EtherNet, RS232C   | 1024 x 768 Resolution | <b>NS15-TX01B-V2</b> |

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.

# NA - Advanced High Resolution Graphic Display

- Wide screen high resolution display with 16M colors
- Multimedia including video, Word, Excel and PDF viewers
- Sysmac Studio provides the integrated development environment
- Preferred for NJ/NX controllers



| Size  | Description            |            | Model          |
|-------|------------------------|------------|----------------|
|       | Communication Port     | Resolution |                |
| 7"    | 2 Ethernet, USB, RS232 | 800 x 480  | NA5-7W001B-V1  |
| 9"    |                        |            | NA5-9W001B-V1  |
| 12.1" |                        | 1280 x 800 | NA5-12W101B-V1 |
| 15.4" |                        |            | NA5-15W101B-V1 |

Note: Part numbers are for black bezel. Silver bezel available.

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.



## NY - Industrial PC

- No internal cables eliminates faults, maximizes uptime
- Unique simplified thermal design cuts downtime
- Powerful Intel® Core™ technology for optimum performance
- Options for models with no moving parts - increasing reliability
- Box and Panel mount versions

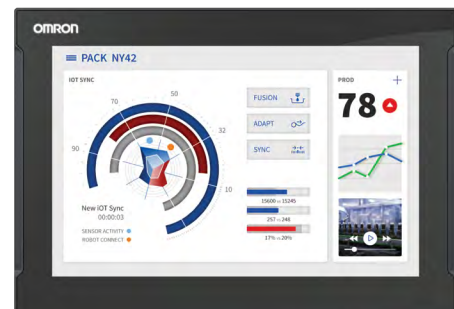


| Family | Operational System                   | CPU                    | RAM Memory | Storage   | Type                        | Model                |
|--------|--------------------------------------|------------------------|------------|-----------|-----------------------------|----------------------|
| NYB    | Windows 10 IoT Enterprise LTSC 64bit | Intel Xeon E3-1515M v5 | 8GB        | 128GB SSD | Box PC                      | NYB1E-313K1          |
|        |                                      | Intel Core i7-4700EQ   |            |           |                             | NYB17-313K1          |
|        |                                      | Intel Core i5-7300U    |            |           |                             | NYB35-313K1          |
|        |                                      | Intel Core i5-4300U    |            |           |                             | NYB25-313K1          |
|        |                                      | Intel Celeron 2980U    |            |           |                             | NYB1C-313K1          |
|        |                                      | Intel Core ATOM E3940  |            |           |                             | NYB2A-30450          |
| NYP    |                                      | Intel Core i7-4700EQ   |            | 128GB SSD | Monitor Panel 12", 15", 19" | NYP17-313K1-15WC1000 |
|        |                                      | Intel Core i5-7300U    |            |           |                             | NYP35-30350-19WC1000 |
|        |                                      | Intel Core i5-4300U    |            |           |                             | NYP25-31391-15WC1000 |
|        |                                      | Intel Celeron 2980U    |            |           |                             | NYP1C-313K1-15WC1000 |
|        |                                      | Intel Core ATOM E3940  |            |           |                             | NYP2A-30460-19WC1000 |
|        |                                      |                        |            |           |                             |                      |

Note: The NYB family does not come with an industrial monitor.

## NYM - Industrial Monitor

- Multitouch projected capacitive touchscreen
- False touch detection (palm, water)  
Operator can wear gloves
- Optional NY Monitor Link interface for connectivity up to 100m
- Custom logo option



| Item               | Size  | Resolution  | Interface       | Model        |
|--------------------|-------|-------------|-----------------|--------------|
| Industrial Monitor | 18.5" | 1,280 x 800 | DVI-D           | NYM19W-C1000 |
|                    | 15.4" |             |                 | NYM15W-C1000 |
|                    | 12.1" |             |                 | NYM12W-C1000 |
|                    | 18.5" |             | NY Monitor Link | NYM19W-C1060 |
|                    | 15.4" |             |                 | NYM15W-C1060 |
|                    | 12.1" |             |                 | NYM12W-C1060 |

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.

# NY5 - IPC Machine Controller

- Models available with AI function and with NC function
- Real Time Operating System runs independently of the Windows OS
- Program the machine control with Sysmac Studio using ladder, ST, SFC.
- Machine control program portable to modular NJ controller
- Available in box and panel versions



| Operational System                    | CPU                  | Number of axes | RAM Memory | Storage  | Type                   | Model                |
|---------------------------------------|----------------------|----------------|------------|----------|------------------------|----------------------|
| Windows Embedded<br>Standard 7 64 bit | Intel Core i7 4700EQ | 64             | 8 GB       | 64GB SSD | 15.4" Monitor<br>Panel | NY532-1500-112213910 |
|                                       |                      | 32             |            |          |                        | NY532-1400-112213910 |
|                                       |                      | 16             |            |          |                        | NY532-1300-112213910 |

Note: For models with NC function or with Artificial Intelligence function, refer to the catalog on the website [automation.omron.com](http://automation.omron.com)

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.

## MX-Z2000H-V1 - Laser Marker

- Provides durable, high-resolution marking for advanced traceability (1D & 2D Code Marking)
- Boosts flexibility by marking parts in any orientation (Three axes)
- Marks a wide variety of shapes and curved surfaces
- Performs orientation, marking and verification in a single step



| Laser Type          | Marking Area  | Working Distance | Marking Resolution | Model         |
|---------------------|---------------|------------------|--------------------|---------------|
| 1062nm Class 4, 20W | 90mm x 90mm   | 170mm +/- 10mm   | 2 micron           | MX-Z2000H-V1  |
|                     | 160mm x 160mm | 220mm +/- 10mm   | 4 micron           | MX-Z2050H-V1  |
|                     |               |                  |                    | MX-Z2055H-V1* |

\* Large Bean Diameter for coarse marking

### Accessories

| Type                  | Descriptions                                            | Model                 |
|-----------------------|---------------------------------------------------------|-----------------------|
| Safety Relay          | 4 pole, DPST-NO, DPST-NC, EN 50205 Class A              | <b>G7SA-2A2B DC24</b> |
| Cable                 | Controller power supply cable                           | MX-9301               |
| EE Mode               | Energy Enhancement (EE) Mode activation key             | MX-9230               |
| Camera Controller     | Vision System Controller, Super, Mid Spd CPU, Box 2-Cam | FH-2050               |
| Camera                | Hi-Speed Camera 4M pix Color                            | FH-SC04               |
| Camera Lens           | CCTV Lens 16mm                                          | 3Z4S-LE SV-1614V      |
| Camera Bracket        | Vision Attachment MX-Z2050/55                           | MX-9151               |
|                       | Vision Attachment MX-Z2000                              | MX-9150               |
| Camera Mounting Plate | FH-SC04 Camera Mount for MX-9151                        | SFP0270               |

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.

## MS-3, QX-830/870 - 1D Code Readers

- Very high scan speed (Up to 1400 scans/second)
- 1D Code reading with Intelligent Raster
- X-Mode technology for code reconstruction (QX-830 and QX-870)
- IP65 Degree of Protection (QX-870)



| Line   | Scans per Second | Resolution Code | Distance      | Communication                                                   | Laser Format | Power    | Model                 |                 |                |
|--------|------------------|-----------------|---------------|-----------------------------------------------------------------|--------------|----------|-----------------------|-----------------|----------------|
| MS-3   | 300 to 1000      | 5 to 20 mils*   | 38 to 254 mm* | Serial (RS-232C) +<br>Serial (RS-232C/422/485)                  | Single Line  | 5VDC     | FIS-0003-0001G        |                 |                |
|        |                  |                 |               |                                                                 | Raster Line  |          | <b>FIS-0003-0003G</b> |                 |                |
| QX-830 | 300 to 1400      | 5 to 40 mils*   | 38 to 762 mm* | 2 x Serial<br>(RS-232C/422/485)                                 | Single Line  | 10~28VDC | FIS-0830-0001G        |                 |                |
|        |                  |                 |               |                                                                 | Raster Line  |          | FIS-0830-0004G        |                 |                |
|        |                  |                 |               | Serial<br>(RS-232C/422/485),<br>Ethernet TCP/IP,<br>EtherNet/IP | Single Line  |          | FIS-0830-1001G        |                 |                |
|        |                  |                 |               |                                                                 | Raster Line  |          | FIS-0830-1004G        |                 |                |
| QX-870 |                  |                 |               |                                                                 |              |          |                       | Sweeping Raster | FIS-0870-1004G |
|        |                  |                 |               |                                                                 |              |          |                       |                 | FIS-0870-0004G |
|        |                  |                 |               | 2 x Serial<br>(RS-232C/422/485)                                 |              |          | FIS-0870-0004G        |                 |                |

Note: \* dependent on model #, see data sheet

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.

## MicroHAWK V430/420/330 - Barcode Reader



- Ultracompact readers, with several model options and setting possibilities
- High performance in reading 1D and 2D codes on any surface, including Direct Part Marks
- Extremely simple setting via browser - WebLink, without the need for software installation
- Autofocus with liquid lens (V420-F and V430-F)



| Line   | Acquisition | Sensor       | Focus               | Communication                                              | Lighting                                     | IP      | Power                            | Model             |
|--------|-------------|--------------|---------------------|------------------------------------------------------------|----------------------------------------------|---------|----------------------------------|-------------------|
| V320-F | 52 fps      | 0.34 MP Mono | Fixed 102mm         | RS-232C, USB/HID, or Ethernet via USB (USB 2.0 Full-Speed) | Built-in White & Red                         | IP40    | 5VDC                             | V320-F102W03M-NNX |
|        | 40 fps      | 1.2 MP Mono  |                     |                                                            |                                              |         |                                  | V320-F102W12M-NNX |
| V330-F | 60 fps      | 0.34 MP Mono | Fixed 102mm         | Ethernet TCP/IP                                            | Built-in White & Red                         | IP40    | 36 to 57 VDC (PoE, IEEE 802.3af) | V330-F102W03M-NNX |
|        | 42 fps      | 1.2 MP Mono  |                     |                                                            |                                              |         |                                  | V330-F102W12M-NNX |
| V420-F | 60 fps      | 0.34 MP Mono | Autofocus 50-300mm  | RS-232C, USB/HID, or Ethernet via USB (USB 2.0 Full-Speed) | Built-in White & Red + External Red (8 LEDs) | IP54    | 5VDC                             | V420-F000W03M-SRX |
|        | 42 fps      | 1.2 MP Mono  |                     |                                                            |                                              |         |                                  | V420-F000W12M-SRX |
|        | 42 fps      | 1.2 MP Mono  | Autofocus 75-1200mm |                                                            |                                              |         |                                  | V420-F000L12M-SRX |
| V430-F | 60 fps      | 0.34 MP Mono | Autofocus 50-300mm  | RS-232C, Ethernet TCP/IP, EtherNet/IP, PROFINET I/O        | Built-in White & Red + External Red (8 LEDs) | IP65/67 | 5 to 30 VDC                      | V430-F000W03M-SRX |
|        | 42 fps      | 1.2 MP Mono  |                     |                                                            |                                              |         |                                  | V430-F000W12M-SRX |
|        | 42 fps      | 1.2 MP Mono  | Autofocus 75-1200mm |                                                            |                                              |         |                                  | V430-F000L12M-SRX |
|        | 42 fps      | 1.2 MP Mono  | Autofocus 50-300mm  |                                                            | External Red (24 LEDs)                       |         |                                  | V430-F000M12M-RRX |

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.



## V410H - Handheld Barcode Reader

- Labels or Direct Part Mark barcode reading
- High resolution 1280 x 800 pixels
- Read ranges from contact to 28 inches
- Intuitive and insightful WebLink PC utility and run time with image storage, statistics, reader discovery, troubleshooting and extensive tool tips



| Name      | Decoding Algorithms | Read Range (10 mil DataMatrix) | Communication | IP Rating | Application                         | Model          |
|-----------|---------------------|--------------------------------|---------------|-----------|-------------------------------------|----------------|
| V410-H XD | 1D/2D, X-Mode       | 0 - 12 cm / 0 - 4.6 in         | RS-232 / USB  | IP52      | Direct Part Mark and Labels         | V410-HDS4608XD |
| V410-H SR | 1D/2D               | 2.5 - 29 cm / 1 - 11.5 in      |               |           | Labels only                         | V410-HDS4608SR |
| V410-H HC |                     | 0.5 - 24 cm / 0.2 - 9.5 in     |               |           | Healthcare / Disinfectant resistant | V410-HDS4608HC |

### Cables And Accessories

| Product                | Type                          | Description                                                              | Model               |
|------------------------|-------------------------------|--------------------------------------------------------------------------|---------------------|
| MS-3                   | Programming                   | DB15 cable for USB                                                       | <b>98-000051-01</b> |
| QX-830/870             | Port A: Power, I/O and Serial | Cable with 12-pin M12 connector, 3m                                      | 61-000167-02        |
|                        | Port B: Serial                | Cable with 12-pin M12 connector, 3m                                      | 61-000166-02        |
|                        | Port B: Ethernet              | Cable with 8-pin M12 connector for RJ45, 3m                              | 61-000163-03        |
| MicroHAWK V/<br>F320-F | Power, I/O, Serial and USB    | Cable with RJ50 connector, 3m                                            | V320-W8-3M          |
|                        | RJ50/DB-15 Converter          | RJ50 Cable for DB-15, 1m                                                 | V320-WR-1M          |
|                        | Programming                   | DB-15 cable for USB, 1m                                                  | V420-WUB-1M         |
| MicroHAWK V/<br>F330-F | Standard Ethernet Cable       | RJ45 Cable for RJ45                                                      | XS6W-5PURBSS_00CM-G |
| MicroHAWK V/<br>F420-F | Programming                   | DB-15 cable for USB, 1m                                                  | V420-WUB-1M         |
| MicroHAWK V/<br>F430-F | Power, I/O and Serial         | Cable with 12-pin M12 connector                                          | V430-W8-_M          |
|                        | Ethernet                      | Cable with 8-pin M12 connector for RJ45                                  | V430-WE-_M          |
| V410-H                 | Cable (Required)              | CABLE ASSY, UNIVERSAL STYLE 3 USB, 2m, SHIELDED MOD PLUG-V410-H          | V410-WUB-2M         |
|                        | Cable                         | CBL ASSY, RS232, DB9F, 2m, for connection to communication module or PLC | V410-WR-2M          |
|                        | Power Supply                  | Power Supply required for V410-WR-2M RS-232 Cable                        | V410-AC0-1          |
|                        | Intelligent Stand             | Stand/holder for using in Hands-free mode                                | V410-AS0            |
|                        | Communication Module          | Serial to Ethernet TCP and EIP DIN rail mounted converter                | OEI-EA3600-R1CP-11  |
|                        | Cable                         | 2m Serial Cable for OEI-EA3600                                           | OEI-CBA-RF2-CO9ZAR  |

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.

## V680S - RFID Reader/Writer

- All in one controller, amplifier, antenna
- Reads and writes to any ISO 18000-3 compliant RFID Tag
- Diagnostic function for easy setup and troubleshooting
- Ethernet, EtherNet/IP and PROFINET connectivity



| Dimensions (mm) | Network             | Model                  |
|-----------------|---------------------|------------------------|
| 50 x 50 x 30    | EtherNet/IP         | <b>V680S-HMD63-EIP</b> |
|                 | PROFINET            | V680S-HMD63-PNT        |
|                 | Modbus TCP (TCP/IP) | V680S-HMD63-ETN        |
| 75 x 75 x 40    | EtherNet/IP         | V680S-HMD64-EIP        |
|                 | PROFINET            | V680S-HMD64-PNT        |
|                 | Modbus TCP (TCP/IP) | V680S-HMD64-ETN        |
| 120 x 120 x 40  | EtherNet/IP         | V680S-HMD66-EIP        |
|                 | PROFINET            | V680S-HMD66-PNT        |
|                 | Modbus TCP (TCP/IP) | V680S-HMD66-ETN        |

### Tags

| Type       | Memory | Dimensions (mm) | Installation                                 | Model         |
|------------|--------|-----------------|----------------------------------------------|---------------|
| No Battery | 2 K    | 40 x 40 x 5     | For assembly on non-metallic faceted surface | V680S-D2KF67  |
|            |        |                 | For assembly on metallic faceted surface     | V680S-D2KF67M |
|            |        | 86 x 54 x 10    | For assembly on non-metallic faceted surface | V680S-D2KF68  |
|            |        |                 | For assembly on metallic faceted surface     | V680S-D2KF68M |
|            | 8 K    | 40 x 40 x 5     | For assembly on non-metallic faceted surface | V680S-D8KF67  |
|            |        |                 | For assembly on metallic faceted surface     | V680S-D8KF67M |
|            |        | 86 x 54 x 10    | For assembly on non-metallic faceted surface | V680S-D8KF68  |
|            |        |                 | For assembly on metallic faceted surface     | V680S-D8KF68M |

Note: For tags in other formats, or labels, refer to Omron website.

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.

## V780 - UHF Long Range RFID Reader/Writer



- All-in-one antenna/amplifier/controller with up to 6m of read/write range
- Ability to network up to 7 slave antennas with a master for increased tag reading area
- Web browser based setup and configuration with advanced diagnostics
- Ethernet (Modbus TCP, EtherNet/IP™) as a standard feature



| Dimensions (mm) | Network                               | Applicable countries     | Model               |
|-----------------|---------------------------------------|--------------------------|---------------------|
| 250 × 250 × 70  | Modbus/TCP base (TCP/IP)              | United States and Canada | V780-HMD68-ETN-US   |
|                 |                                       | Mexico                   | V780-HMD68-ETN-MX   |
|                 | EtherNet/IP                           | United States and Canada | V780-HMD68-EIP-US   |
|                 |                                       | Mexico                   | V780-HMD68-EIP-MX   |
|                 | (For Multi-Reader/Writer function *2) | United States and Canada | V780-HMD68-ETN-US-S |
|                 |                                       | Mexico                   | V780-HMD68-ETN-MX-S |

### Cables and accessories for V680 and V780

| Type of Communication          | Length    | Power cable     | Communication cable |
|--------------------------------|-----------|-----------------|---------------------|
| Modbus TCP (TCP/IP)            | 2 Meters  |                 | V680S-A41 2M*       |
|                                | 5 Meters  |                 | V680S-A41 5M*       |
|                                | 10 Meters |                 | V680S-A41 10M*      |
| V780 EtherNet/IP and PROFINET  | 1 Meter   | XS5F-D421-C80-F | XS5W-T421-CME-K     |
| V680S EtherNet/IP and PROFINET | 2 Meters  | XS5F-D421-D80-F | XS5W-T421-DMC-K     |
|                                | 5 Meters  | XS5F-D421-G80-F | XS5W-T421-GMC-K     |
|                                | 10 Meters | XS5F-D421-J80-F | XS5W-T421-JMC-K     |

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.

## LVS-95XX - Offline Verifier

- Verify a broad variety of direct part marks as well as 1D and 2D printed barcodes with a single model
- Software automatically selects best lighting performance from integrated red or white dome and 30° angle lighting
- Validates printed barcodes to ISO/IEC, ANSI, GS1, and UDI print quality standards



| Type                          | Field of View                          | Codes          | X-Dimension (min) |          | Lighting                | Power                             | Communication | Model          |
|-------------------------------|----------------------------------------|----------------|-------------------|----------|-------------------------|-----------------------------------|---------------|----------------|
|                               |                                        |                | 1 D               | 2 D      |                         |                                   |               |                |
| LVS-9510 Desktop              | 102mm x 102mm                          | 1D & 2D        | 6.0 mils          | 9.0 mils | White (with red filter) | 12VDC (Supply)                    | USB 2.0       | 9510-5-4.0     |
| LVS-9580 DPM/<br>LVS-9585 DPM | 76.19mm x 57.15mm                      |                | 1D, 2D & DPM      | 4.0 mils | 5.9 mils                | White Dome type (with red filter) |               | 5VDC (Via USB) |
|                               | 33mm x 25mm (High Density, HD)         | 2.0 mils (DPM) |                   |          | 9580-DPM-HD             |                                   |               |                |
|                               | 76.19mm x 57.15mm<br>44mm x 44mm (DPM) | 5.9 mils       |                   |          | White and Red Dome      | 9585-DPM                          |               |                |
|                               | 33mm x 25mm (High Density, HD)         | 2.0 mils (DPM) |                   |          | White and Red Dome      | 9585-DPM-HD                       |               |                |

## V275 - Inline Verifier and Print Quality Inspection



- Inspect 100% of labels for print quality.
- Verify 1D and 2D codes to ISO standards.
- Ensure compliance with regulations and quality requirements.
- Check for cosmetic blemishes and errors in printed data.
- Avoid costly chargebacks, recalls, and supply chain disruption.



| Printer     | Print Resolution | Print Speed (max) | Label Width (max) | X-Dimension (min) |           | Font Size (point) | Communication          | Model             |
|-------------|------------------|-------------------|-------------------|-------------------|-----------|-------------------|------------------------|-------------------|
|             |                  |                   |                   | 1 D               | 2 D       |                   |                        |                   |
| Zebra ZT610 | 300 dpi          | 304mm (12")/seg   | 104mm (4.1")      | 6.6 mils          | 10.0 mils | 5 point           | 5 pt Ethernet (via PC) | V275-P46Z61030-CC |
| Zebra ZT610 | 600 dpi          | 152mm (6")/seg    | 104mm (4.1")      |                   |           |                   |                        | V275-P46Z61060-CC |
| Zebra ZT620 | 300 dpi          | 203mm (8")/seg    | 167mm (6.6")      |                   |           |                   |                        | V275-P86Z62030-CC |

Note: 10.0 mils if Code 1D is vertically printed (ladder orientation)

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.

## MicroHAWK F430/330 - Smart Camera



- Ultracompact Smart Cameras
- Various model options and configuration possibilities
- Two programming software options: AutoVISION (Simplified) or Visionscape (Complete)
- Autofocus with liquid lens (F420-F and F430-F)
- Degree of protection up to IP67



| Family | Sensor Color | Sensor Resolution | Shutter Type | Lens Type/<br>Mount                        | Focus Distance                         | Software or License                        | Model                                      |                   |
|--------|--------------|-------------------|--------------|--------------------------------------------|----------------------------------------|--------------------------------------------|--------------------------------------------|-------------------|
| F320   | Monochrome   | 0.34 MP           | Global       | Integrated -<br>fixed focus                | 102 mm                                 | AutoVISION + Verification +<br>Visionscape | F320-F102W03M-NNV                          |                   |
|        | Monochrome   | 1.2 MP            |              |                                            |                                        |                                            | F320-F102W12M-NNV                          |                   |
|        | Color        | 5 MP              | Rolling      |                                            |                                        |                                            | F320-F102W50C-NNV                          |                   |
| F330   | Monochrome   | 0.34 MP           | Global       |                                            |                                        |                                            | F330-F102W03M-NNV                          |                   |
|        | Monochrome   | 1.2 MP            |              |                                            |                                        |                                            | F330-F102W12M-NNV                          |                   |
|        | Color        | 5 MP              | Rolling      |                                            |                                        |                                            | F330-F102W50C-NNV                          |                   |
| F420   | Monochrome   | 1.2 MP            | Global       |                                            | Autofocus high<br>speed liquid<br>lens | 75 to 1200 mm                              |                                            | F420-F000L12M-SRV |
|        | Color        | 5 MP              | Rolling      |                                            |                                        | 50 to 300 mm                               | AutoVISION Sensor                          | F420-F000M50C-SWS |
|        | Monochrome   | 0.34 MP           | Global       |                                            |                                        |                                            | AutoVISION + Verification +<br>Visionscape | F420-F000W03M-SRV |
|        | Monochrome   | 1.2 MP            |              | F420-F000W12M-SRV                          |                                        |                                            |                                            |                   |
|        | Color        | 5 MP              | Rolling      | F420-F000W50C-SWV                          |                                        |                                            |                                            |                   |
| F430   | Monochrome   | 1.2 MP            | Global       | 75 to 1200 mm                              |                                        |                                            | F430-F000L12M-SRV                          |                   |
|        | Monochrome   | 1.2 MP            |              | 50 to 300 mm                               |                                        |                                            | F430-F000M12M-RRV                          |                   |
|        | Monochrome   | 1.2 MP            |              |                                            |                                        | AutoVISION + Verification                  | F430-F000M12M-SRA                          |                   |
|        | Monochrome   | 1.2 MP            |              |                                            |                                        | AutoVISION + Verification +<br>Visionscape | F430-F000M12M-SRV                          |                   |
|        | Monochrome   | 1.2 MP            |              |                                            |                                        | AutoVISION + Verification                  | <b>F430-F000M12M-SWA</b>                   |                   |
|        | Monochrome   | 0.34 MP           |              |                                            |                                        | AutoVISION + Verification +<br>Visionscape | F430-F000W03M-SRV                          |                   |
|        | Monochrome   | 1.2 MP            |              | AutoVISION + Verification +<br>Visionscape |                                        | F430-F000W12M-SRV                          |                                            |                   |
|        | Color        | 5 MP              | Rolling      | AutoVISION Sensor                          |                                        | F430-F000W50C-SWS                          |                                            |                   |
|        | Color        | 5 MP              |              | AutoVISION + Verification +<br>Visionscape |                                        | F430-F000W50C-SWV                          |                                            |                   |

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.



# MV4000 - Smart camera/vision sensor

- Complete vision, code reading and code verification toolsets
- Near PC processing speeds (inspection rates ranging from 4,000 to 14,000 parts per minute)
- Complete offering lenses, lights, cables and mounts to support the complete solution
- A scalable and faster solution on AutoVISION/ Visionscape software platform



| Family  | Sensor Color | Sensor Resolution | Shutter Type | Lens Type/Mount                              | Software or License                     | Model          |
|---------|--------------|-------------------|--------------|----------------------------------------------|-----------------------------------------|----------------|
| MV-4000 | Monochrome   | 0.3 MP            | Global       | C Mount with option for auto-focus accessory | AutoVISION + Verification + Visionscape | 8011-0000-0104 |
|         |              | 1.3 MP            |              |                                              |                                         | 8012-0000-0104 |
|         |              | 2 MP              |              |                                              |                                         | 8013-0000-0104 |
|         |              | 5 MP              |              |                                              |                                         | 8014-0000-0104 |
|         | Color        | 0.3 MP            |              |                                              |                                         | 8015-0000-0104 |
|         |              | 1.3 MP            |              |                                              |                                         | 8016-0000-0104 |
|         |              | 2 MP              |              |                                              |                                         | 8017-0000-0104 |
|         |              | 5 MP              |              |                                              |                                         | 8018-0000-0104 |

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.

## FHV7 - Vision System

- Smart Cameras with several model options and setting possibilities (from 0.4MP to 12M)
- Dual Core CPU providing up to 430 fps (0.4MP) acquisition
- Multicolor lighting module (red, green, blue, and infrared, with individual control)
- Degree of protection up to IP67



| Family | Sensor Color | Sensor Resolution | Shutter Type | Lens Type/Mount                              | Software or License          | Model               |
|--------|--------------|-------------------|--------------|----------------------------------------------|------------------------------|---------------------|
| FHV7   | Monochrome   | 0.4 MP            | Global       | C Mount with option for auto-focus accessory | FHV Software + Sysmac Studio | FHV7H-M004-C        |
|        |              | 1.6 MP            |              |                                              |                              | FHV7H-M016-C        |
|        |              | 3.2 MP            |              | C Mount                                      |                              | FHV7H-M032-C        |
|        |              | 5 MP              |              |                                              |                              | FHV7H-M050-C        |
|        | Color        | 0.4 MP            |              | C Mount with option for auto-focus accessory |                              | <b>FHV7H-C004-C</b> |
|        |              | 1.6 MP            |              |                                              |                              | FHV7H-C016-C        |
|        |              | 3.2 MP            |              |                                              |                              | <b>FHV7H-C032-C</b> |
|        |              | 5 MP              |              | C Mount                                      |                              | FHV7H-C050-C        |
|        |              | 6.3 MP            | Rolling      | C Mount with option for auto-focus accessory |                              | FHV7H-C063R-C       |
|        |              | 12 MP             |              | C Mount                                      |                              | FHV7H-C120R-C       |
|        | Monochrome   | 6.3 MP            |              | C Mount with option for auto-focus accessory |                              | FHV7H-M063R-C       |
|        |              | 12 MP             |              | C Mount                                      |                              | FHV7H-M120R-C       |

### Lenses

| Focal Distance | C-Mount                 | Autofocus (Standard) | Autofocus (High-speed) |
|----------------|-------------------------|----------------------|------------------------|
| 6mm            |                         | FHV-LEM-S06          | FHV-LEM-H06            |
| 8mm            | <b>3Z4S-LE SV-0814H</b> | -                    | -                      |
| 9mm            |                         | <b>FHV-LEM-S09</b>   | -                      |
| 12mm           | <b>3Z4S-LE SV-1214H</b> | FHV-LEM-S12          | -                      |
| 16mm           | <b>3Z4S-LE SV-1614H</b> | FHV-LEM-S16          | -                      |
| 19mm           | -                       |                      | FHV-LEM-H19            |
| 25mm           | <b>3Z4S-LE SV-2514H</b> | FHV-LEM-S25          | -                      |

Note: For C-Mount lenses, please refer to Vision Accessory Catalog for complete lens setup. Autofocus and Lighting modules will fit on 0.4MP, 1.6MP, 3.2MP and 6.3MP cameras. You can also refer to the FHV7 configurator on the product page.

### Lighting Modules

| Light Color | Model            |
|-------------|------------------|
| Multicolor  | FHV-LTM-MC       |
| Red         | FHV-LTM-R        |
| White       | <b>FHV-LTM-W</b> |
| IR          | FHV-LTM-IR       |

### Accessories

| Type                             | Connector    |             |
|----------------------------------|--------------|-------------|
|                                  | Straight     | 90°         |
| Ethernet Cable                   | FHV-VNB _M   | FHV-VNLB _M |
| I/O Cable                        | FHV-VDB _M   | FHV-VDLB _M |
| Connection cable for Interface   | FHV-VUB _M   | FHV-VULB _M |
| I/O Cable for Parallel Interface | XW2Z-S013-_* |             |

### Data and Communication Interface

| Type     | Inputs / Outputs       | EtherCAT Communication | Model     |
|----------|------------------------|------------------------|-----------|
| Parallel | 12 Inputs / 24 Outputs | No                     | FHV-SDU10 |
| EtherCAT | 1 Input / 2 Outputs    | Yes (Slave)            | FHV-SDU30 |

## FH - Vision System

- High performance Vision System with more than 100 program tools
- Connection for 2, 4 or 8 cameras on the same controller with independent triggers
- High resolution cameras up to 20 MP
- Real image processing (16 million colors)



### Controllers

| Item                     | CPU and Processing             | Communication                                                 | EtherCAT | No. of cameras | Model          |
|--------------------------|--------------------------------|---------------------------------------------------------------|----------|----------------|----------------|
| Box type controller      | High-Speed Controller (4 core) | EtherNet/IP, Ethernet TCP/UDP, PROFINET, Serial, Parallel I/O | Yes      | 2              | FH-5050        |
|                          |                                |                                                               |          | 4              | FH-5050 -10    |
|                          | 8                              |                                                               |          | FH-5050-20     |                |
|                          | 2                              |                                                               |          | FH-2050        |                |
|                          | 4                              |                                                               |          | FH-2050 -10    |                |
|                          | 8                              |                                                               |          | FH-2050 -20    |                |
|                          | High-Speed Controller (2 core) |                                                               | No       | 2              | <b>FH-L550</b> |
|                          |                                |                                                               |          | 4              | FH-L550-10     |
| Lite Controller (2 core) |                                |                                                               |          |                |                |

### Cameras

| Item                                          | Description                           | Model     |            |
|-----------------------------------------------|---------------------------------------|-----------|------------|
|                                               |                                       | Color     | Monochrome |
| CMOS Camera (Rolling Shutter)                 | 5MP, 71.7ms image acquisition time    | FH-SC05R  | FH-SM05R   |
|                                               | 20.4MP, 42.6ms image acquisition time | FH-SC21R  | FH-SM21R   |
| Newer high speed CMOS Camera (Global Shutter) | 12MP, 24.9ms image acquisition time   | FH-SCX12  | FH-SMX12   |
|                                               | 5MP, 10.3ms image acquisition time    | FH-SCX05  | FH-SMX05   |
|                                               | 0.4MP, 1.9ms image acquisition time   | FH-SCX    | FH-SMX     |
| High speed CMOS Camera (Global Shutter)       | M42 Mount 12MP, 25.7ms image acq time | FH-SC12   | FH-SM12    |
|                                               | 4MP, 8.5ms image acquisition time     | FH-SC04   | FH-SM04    |
|                                               | 2MP, 4.6ms image acquisition time     | FH-SC02   | FH-SM02    |
|                                               | 0.3MP, 3.3ms image acquisition time   | FH-SC     | FH-SM      |
| CCD Camera (Global Shutter)                   | 5MP, 62.5ms image acquisition time    | FZ-SC5M3  | FZ-S5M3    |
|                                               | 2MP, 33.3ms image acquisition time    | FZ-SC2M   | FZ-S2M     |
|                                               | 0.3MP, 12.5ms image acquisition time  | FZ-SC     | FZ-S       |
|                                               | 0.3MP, 4.9ms image acquisition time   | FZ-SHC    | FZ-SH      |
| Smart CMOS Camera (Global Shutter)            | 0.3MP, 16.7ms image acquisition time  | FZ-SQ100N | -          |

| Type                    | Description | Model             | Type of Camera                                   | Focal Distance | Model            |
|-------------------------|-------------|-------------------|--------------------------------------------------|----------------|------------------|
| Cable for camera        | 2m Length   | FZ-VS3 2M         | FZ-S_2M<br>FZ-S_5M2<br>FH-S_05R<br>(2MP and 5MP) | 6mm            | 3Z4S-LE SV-0614H |
|                         | 5m Length   | <b>FZ-VS3 5M</b>  |                                                  | 8mm            | 3Z4S-LE SV-0814H |
|                         | 10m Length  | <b>FZ-VS3 10M</b> |                                                  | 12mm           | 3Z4S-LE SV-1214H |
| Parallel cable for I/Os | 2m Length   | XW2Z-S013-2       |                                                  | 16mm           | 3Z4S-LE SV-1614H |
|                         | 5m Length   | XW2Z-S013-5       |                                                  | 25mm           | 3Z4S-LE SV-2514H |
|                         |             |                   | FZ-S_<br>FH-S_<br>(0.3MP)                        | 6mm            | 3Z4S-LE SV-0614V |
|                         |             |                   |                                                  | 8mm            | 3Z4S-LE SV-0813V |
|                         |             |                   |                                                  | 12mm           | 3Z4S-LE SV-1214V |
|                         |             |                   |                                                  | 16mm           | 3Z4S-LE SV-1614V |
|                         |             |                   |                                                  | 25mm           | 3Z4S-LE SV-2514V |

Note: Please refer to Vision Accessory Catalog for complete lens setup.

## M Series GigE Vision Cameras

- Power over Ethernet capable
- High Resolution, High Speed, CMOS Sensors.
- Small Form Factor: 29 x 29mm & 30 x 40mm versions.
- IEEE1588 Certified with GigE Vision 2.1
- Compatible with Omron AutoVISION & VisionScape



### Global shutter models

| Monochrome/Color | Resolution | Frame Rate | Effective Pixels (H × V) | Sensor Size | Cell Size (μm) | Sensor   | Lens Mount | Model          |
|------------------|------------|------------|--------------------------|-------------|----------------|----------|------------|----------------|
| Monochrome       | 0.4M       | 282.8 fps  | 720 × 540                | 1/2.9       | 6.9 × 6.9      | IMX287   | C          | STC-MBS43POE   |
| Color            |            |            |                          |             |                |          |            | STC-MCS43POE   |
| Monochrome       | 0.5M       | 166.5 fps  | 816 × 624                | 1/1.7       | 9 × 9          | IMX433   | C          | STC-MBS52POE   |
| Color            |            |            |                          |             |                |          |            | STC-MCS52POE   |
| Monochrome       | 1.3M       | 61 fps     | 1280 × 1024              | 1/1.8       | 5.3 × 5.3      | EV76C560 | C          | STC-MBE132POE  |
| Color            |            |            |                          |             |                |          |            | STC-MCE132POE  |
| Monochrome       | 1.6M       | 70.7 fps   | 1440 × 1088              | 1/2.9       | 3.45 × 3.45    | IMX273   | C          | STC-MBS163POE  |
| Color            |            |            |                          |             |                |          |            | STC-MCS163POE  |
| Monochrome       | 2M         | 54.6 fps   | 1624 × 1240              | 1/1.7       | 4.5 × 4.5      | IMX430   | C          | STC-MBS202POE  |
| Color            |            |            |                          |             |                |          |            | STC-MCS202POE  |
| Monochrome       | 2.3M       | 41.6 fps   | 1920 × 1200              | 1/1.2       | 5.86 × 5.86    | IMX249   | C          | STC-MBS231POE  |
| Color            |            |            |                          |             |                |          |            | STC-MCS231POE  |
| Monochrome       | 3.2M       | 34.9 fps   | 2048 × 2048              | 2/3         | 3.45 × 3.45    | IMX265   | C          | STC-MBS312POE  |
| Color            |            |            |                          |             |                |          |            | STC-MCS312POE  |
| Monochrome       | 5M         | 21.9 fps   | 2448 × 2048              | 2/3         | 3.45 × 3.45    | IMX264   | C          | STC-MBS500POE  |
| Color            |            |            |                          |             |                |          |            | STC-MCS500POE  |
| Monochrome       | 8.9M       | 12.4 fps   | 4096 × 2160              | 1           | 3.45 × 3.45    | IMX267   | C          | STC-MBS881POE  |
| Color            |            |            |                          |             |                |          |            | STC-MCS881POE  |
| Monochrome       | 12.3M      | 8.9 fps    | 4096 × 3000              | 1.1         | 3.45 × 3.45    | IMX255   | C          | STC-MBS122BPOE |
| Color            |            |            |                          |             |                |          |            | STC-MCS122BPOE |

### Rolling shutter models

| Monochrome/Color | Resolution | Frame Rate | Effective Pixels (H × V) | Sensor Size | Cell Size (μm) | Sensor  | Lens Mount | Model          |
|------------------|------------|------------|--------------------------|-------------|----------------|---------|------------|----------------|
| Monochrome       | 5M         | 14 fps     | 2592 × 1944              | 1/2.5       | 2.2 × 2.2      | MT9P031 | C          | STC-MBA503POE  |
| Color            |            |            |                          |             |                |         |            | STC-MCA503POE  |
| Monochrome       | 6.4M       | 17.4 fps   | 3072 × 2048              | 1/1.8       | 2.4 × 2.4      | IMX178  | C          | STC-MBS642POE  |
| Color            |            |            |                          |             |                |         |            | STC-MCS642POE  |
| Monochrome       | 10M        | 10.3 fps   | 3856 × 2764              | 1/2.3       | 1.67 × 1.67    | MT9J003 | C          | STC-MBA1002POE |
| Monochrome       | 12M        | 9.2 fps    | 4000 × 3000              | 1/1.7       | 1.85 × 1.85    | IMX226  | C          | STC-MBS1242POE |
| Color            |            |            |                          |             |                |         |            | STC-MCS1242POE |
| Monochrome       | 20.4M      | 5.5 fps    | 5472 × 3648              | 1           | 2.4 × 2.4      | IMX183  | C          | STC-MBS2041POE |
| Color            |            |            |                          |             |                |         |            | STC-MCS2041POE |

### Screw-Fastened GigE Cables

| Length | Model      |
|--------|------------|
| 3 m    | FJ-VSG 3M  |
| 5 m    | FJ-VSG 5M  |
| 10 m   | FJ-VSG 10M |
| 20 m   | FJ-VSG 20M |
| 40 m   | FJ-VSG 40M |

### Power Supply and I/O Cables

| Length | Model       |
|--------|-------------|
| 3 m    | FJ-VSP2 3M  |
| 5 m    | FJ-VSP2 5M  |
| 10 m   | FJ-VSP2 10M |

Note. Please connect the cables according to the external connector specifications prescribed in your camera's specification documents, for faulty wiring can cause failure.

## FS Series GigE Vision Line Scan Cameras

- Power over Ethernet capable
- Compact case designed for easy mounting
- Offered in 2K, 4K, or 8K
- Available in Single & Dual Line Monochrome and Dual Line Color Models.
- Action Command Triggering: Trigger multiple cameras simultaneously with one command.



| Monochrome/Color | Resolution | Line Rate | Pixel size | Sensor              | Sensor Type | Lens Mount | Model            |
|------------------|------------|-----------|------------|---------------------|-------------|------------|------------------|
| Monochrome       | 2048 × 1   | 51 kHz    | 7 μm       | DR-2K-7             | Single      | C          | FS-B2KU7GES-C    |
|                  |            |           |            |                     |             | F          | FS-B2KU7GES-F    |
|                  |            |           |            |                     |             | M42        | FS-B2KU7GES-M42  |
| Monochrome       | 4096 × 1   | 26 kHz    | 7 μm       | DR-4K-7             | Single      | F          | FS-B4KU7GES-F    |
|                  |            |           |            |                     |             | M42        | FS-B4KU7GES-M42  |
| Monochrome       | 4096 × 1   | 26 kHz    | 3.5 μm     | DR-4K-3.5           | Single      | C          | FS-B4KU35GES-C   |
|                  |            |           |            |                     |             | F          | FS-B4KU35GES-F   |
|                  |            |           |            |                     |             | M42        | FS-B4KU35GES-M42 |
| Monochrome       | 8192 × 1   | 13 kHz    | 3.5 μm     | DR-8K-3.5           | Single      | F          | FS-B8KU35GES-F   |
|                  |            |           |            |                     |             | M42        | FS-B8KU35GES-M42 |
| Monochrome       | 2048x1     | 26kHz     | 7 μm       | DR-2X2K-7-inver     | Dual        | C          | FS-B2KU7DGES-C   |
|                  |            |           |            |                     |             | F          | FS-B2KU7DGES-F   |
|                  |            |           |            |                     |             | M42        | FS-B2KU7DGES-M42 |
| Monochrome       | 4096x2     | 13kHz     | 7 μm       | DR-2X4K-7-inver     | Dual        | F          | FS-B4KU7DGES-F   |
|                  |            |           |            |                     |             | M42        | FS-B4KU7DGES-M42 |
| Color            | 2048x1     | 26kHz     | 7 μm       | DR-2X2K-7-inver-RGB | Dual        | C          | FS-C2KU7DGES-C   |
|                  |            |           |            |                     |             | F          | FS-C2KU7DGES-F   |
|                  |            |           |            |                     |             | M42        | FS-C2KU7DGES-M42 |
| Color            | 4096x2     | 13kHz     | 7 μm       | DR-2X4K-7-inver-RGB | Dual        | F          | FS-C4KU7DGES-F   |
|                  |            |           |            |                     |             | M42        | FS-C4KU7DGES-M42 |

### Screw-Fastened GigE Cables

| Length | Model      |
|--------|------------|
| 3 m    | FJ-VSG 3M  |
| 5 m    | FJ-VSG 5M  |
| 10 m   | FJ-VSG 10M |
| 20 m   | FJ-VSG 20M |
| 40 m   | FJ-VSG 40M |

### Power Supply and I/O Cables

| Length | Model       |
|--------|-------------|
| 3 m    | FJ-VSP2 3M  |
| 5 m    | FJ-VSP2 5M  |
| 10 m   | FJ-VSP2 10M |

Note. Please connect the cables according to the external connector specifications prescribed in your camera's specification documents, for faulty wiring can cause failure.



## M Series USB3 Vision Cameras

- USB3.0 Compact CMOS Camera
- Offered in resolutions ranging from 0.4M to 20.4M
- Plug and Play functionality
- Compatible with Omron AutoVISION & VisionScape.



### Global shutter models

| Monochrome/Color | Resolution | Frame Rate | Effective Pixels (H × V) | Sensor Size | Cell Size (μm) | Sensor   | Lens Mount | Model              |
|------------------|------------|------------|--------------------------|-------------|----------------|----------|------------|--------------------|
| Monochrome       | 0.4M       | 527.1 fps  | 720 × 540                | 1/2.9       | 6.9 × 6.9      | IMX287   | C          | STC-MBS43U3V       |
| Color            |            |            |                          |             |                |          |            | STC-MCS43U3V       |
| Monochrome       | 1.3M       | 60 fps     | 1280 × 1024              | 1/1.8       | 5.3 × 5.3      | EV76C560 | CS         | STC-MBE132U3V      |
| Color            |            |            |                          |             |                |          |            | STC-MCE132U3V      |
| Monochrome       | 1.6M       | 238 fps    | 1440 × 1080              | 1/2.9       | 3.45 × 3.45    | IMX273   | C          | STC-MBS163U3V      |
| Color            |            |            |                          |             |                |          |            | STC-MCS163U3V      |
| Monochrome       | 2M         | 167 fps    | 2048 × 1088              | 2/3         | 5.5 × 5.5      | CMV2000  | C          | STC-MBCM200U3V     |
| Monochrome NIR   |            |            |                          |             |                |          |            | STC-MBCM200U3V-NIR |
| Monochrome       | 2.3M       | 41.6 fps   | 1920 × 1200              | 1/1.2       | 5.86 × 5.86    | IMX249   | C          | STC-MBS231U3V      |
| Color            |            |            |                          |             |                |          |            | STC-MCS231U3V      |
| Monochrome       | 2.3M       | 163 fps    | 1920 × 1200              | 1/1.2       | 5.86 × 5.86    | IMX174   | C          | STC-MBS241U3V      |
| Color            |            |            |                          |             |                |          |            | STC-MCS241U3V      |
| Monochrome       | 3.2M       | 56 fps     | 2048 × 1536              | 1/1.8       | 3.45 × 3.45    | IMX265   | C          | STC-MBS312U3V      |
| Color            |            |            |                          |             |                |          |            | STC-MCS312U3V      |
| Monochrome       | 3.2M       | 121 fps    | 2048 × 1536              | 1/1.8       | 3.45 × 3.45    | IMX252   | C          | STC-MBS322U3V      |
| Color            |            |            |                          |             |                |          |            | STC-MCS322U3V      |
| Monochrome       | 4M         | 89 fps     | 2048 × 2048              | 1           | 5.5 × 5.5      | CMV4000  | C          | STC-MBCM401U3V     |
| Color            |            |            |                          |             |                |          |            | STC-MCCM401U3V     |
| Monochrome NIR   |            |            |                          |             |                |          |            | STC-MBCM401U3V-NIR |
| Monochrome       | 5M         | 35.8 fps   | 2448 × 2048              | 2/3         | 3.45 × 3.45    | IMX264   | C          | STC-MBS500U3V      |
| Color            |            |            |                          |             |                |          |            | STC-MCS500U3V      |
| Monochrome       | 5M         | 75.7 fps   | 2448 × 2048              | 2/3         | 3.45 × 3.45    | IMX250   | C          | STC-MBS510U3V      |
| Color            |            |            |                          |             |                |          |            | STC-MCS510U3V      |
| Monochrome       | 7.1M       | 51.2 fps   | 3216 × 2208              | 1.1         | 4.5 × 4.5      | IMX428   | C          | STC-MBS70BU3V      |
| Color            |            |            |                          |             |                |          |            | STC-MCS70BU3V      |
| Monochrome       | 8.9M       | 32.5 fps   | 4096 × 2160              | 1           | 3.45 × 3.45    | IMX267   | C          | STC-MBS881U3V      |
| Color            |            |            |                          |             |                |          |            | STC-MCS881U3V      |
| Monochrome       | 8.9M       | 41.9 fps   | 4096 × 2160              | 1           | 3.45 × 3.45    | IMX255   | C          | STC-MBS891U3V      |
| Color            |            |            |                          |             |                |          |            | STC-MCS891U3V      |
| Monochrome       | 12.3M      | 23.5 fps   | 4096 × 3000              | 1.1         | 3.45 × 3.45    | IMX304   | C          | STC-MBS122BU3V     |
| Color            |            |            |                          |             |                |          |            | STC-MCS122BU3V     |
| Monochrome       | 12.3M      | 30.4 fps   | 4096 × 3000              | 1.1         | 3.45 × 3.45    | IMX253   | C          | STC-MBS123BU3V     |
| Color            |            |            |                          |             |                |          |            | STC-MCS123BU3V     |

Note. We recommend that you use an external power supply for 8.9M and 12M cameras, for depending on PC performance, power supplied via USB bus connection alone may not be sufficient for these cameras.

Note. Models with "-SE" have been additionally equipped with the Short Exposure Mode feature.

### Rolling shutter models

| Monochrome/Color | Resolution | Frame Rate | Effective Pixels (H × V) | Sensor Size | Cell Size (μm) | Sensor | Lens Mount | Model          |
|------------------|------------|------------|--------------------------|-------------|----------------|--------|------------|----------------|
| Monochrome       | 12M        | 31.2 fps   | 4000 × 3000              | 1/1.7       | 1.85 × 1.85    | IMX226 | C          | STC-MBS1242U3V |
| Color            |            |            |                          |             |                |        |            | STC-MCS1242U3V |
| Monochrome       | 20.4M      | 18.5 fps   | 5472 × 3648              | 1           | 2.4 × 2.4      | IMX183 | C          | STC-MBS2041U3V |
| Color            |            |            |                          |             |                |        |            | STC-MCS2041U3V |

### Non-USB3 Vision Compliant Models (with Rolling Shutters)

| Monochrome/Color | Resolution | Frame Rate | Effective Pixels (H × V) | Sensor Size | Cell Size (μm) | Sensor  | Lens Mount | Model         |
|------------------|------------|------------|--------------------------|-------------|----------------|---------|------------|---------------|
| Monochrome       | 5M         | 14 fps     | 2592 × 1944              | 1/2.5       | 2.2 × 2.2      | MT9P031 | CS         | STC-MBA5MUSB3 |
| Color            |            |            |                          |             |                |         |            | STC-MCA5MUSB3 |

## G9SP - Safety Controller

- The standalone safety controller for small and mid-sized applications.
- Communication with standard PLC via Ethernet or Serial
- Direct communication with HMI NB Series via Serial
- Four types of standard expansion



| Product     | Inputs | Test outputs | Safety outputs       | Common outputs | Model            |
|-------------|--------|--------------|----------------------|----------------|------------------|
| G9SP Series | 10     | 4            | Transistor Output: 4 | 4              | <b>G9SP-N10S</b> |
|             | 10     | 6            |                      | -              | G9SP-N10D        |
|             | 20     | 6            | Transistor Output: 8 | -              | <b>G9SP-N20S</b> |

### Expansion Modules and Accessories

| Description           | No. of Outputs                      | No. of Inputs | Model           |
|-----------------------|-------------------------------------|---------------|-----------------|
| Expansion Modules     | 8 (NPN)                             | 12 (NPN)      | CP1W-20EDT      |
|                       | 8 (PNP)                             | 12 (PNP)      | CP1W-20EDT1     |
|                       | 32 (NPN)                            |               | CP1W-32ET       |
|                       | 32 (PNP)                            |               | CP1W-32ET1      |
| Connection Cable      | 80cm (for connecting distant units) |               | CP1W-CN811      |
| Communication Modules | RS-232 Serial                       |               | CP1W-CIF01      |
|                       | EtherNet/FINS                       |               | CP1W-CIF41      |
|                       | EtherNet/IP                         |               | <b>CM-EIP-1</b> |
| Programming software  | 1 license                           |               | WS02-G9SP01-V1  |
| Cassette Memory       |                                     |               | CP1W-ME05M      |

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.

## NX-SL5 - Safety Controller

- A versatile safety controller, with EtherCAT and EtherNet/IP capabilities, for integrated or stand-alone solutions, making machine safety design, installation, and maintenance easier
- Enable flexible manufacture by supporting different safety networks, CIP Safety and FSoE. Enable a hybrid system, when combining the NX-SL5 with the NX-102.
- Sysmac Studio offers a set of unique functions to make functional safety management easier as Safety Signature Check and Online Function Verification. In addition, reduce the design cycle with automatic programming and simple automatic test.



| Product                        | Description                                                  | Model            |
|--------------------------------|--------------------------------------------------------------|------------------|
| NX-SL5 Safety Controller Units | Safety PLC, up to 1024 safety I/O and 128 safety connections | <b>NX-SL5500</b> |
|                                | Safety PLC, up to 2032 safety I/O and 254 safety connections | NX-SL5700        |

| Product                                 | Type                         | Protocol    | Am. of Ports | Number of Networks | Safety Inputs | Safety Outputs | Test Outputs | Model      |
|-----------------------------------------|------------------------------|-------------|--------------|--------------------|---------------|----------------|--------------|------------|
| Communication & Remote Safety I/O Units | Network Coupler              | EtherNet/IP | 3            | 2                  |               |                |              | NX-CSG320  |
|                                         | Remote Module of safety I/Os | EtherNet/IP | 2            | 1                  | 12            | 4              | 12           | GI-SMD1624 |
|                                         |                              |             |              |                    | 12            | -              | 12           | GI-SID1224 |

| Product                     | Type   | No. of Points | Description                                     | Model             |
|-----------------------------|--------|---------------|-------------------------------------------------|-------------------|
| Safety Input & Output Units | Input  | 4             | 4 safety input points (PNP) with 2 test outputs | NX-SIH400 Ver 1.1 |
|                             |        | 8             | 8 safety input points (PNP) with 2 test outputs | <b>NX-SID800</b>  |
|                             | Output | 2             | 2 safety outputs (PNP)                          | NX-SOH200         |
|                             |        | 4             | 4 safety outputs (PNP)                          | <b>NX-SOD400</b>  |

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.

## NX-SL3 - Safety Controller

- Effortless integration into the most common PLC's platforms in the market, providing reliable safety solutions while supporting different configurations.
- Offer a direct connection to any PLC using an EtherNet/IP coupler, and build a stand-alone system. For larger projects, with a higher number of safety devices distributed over a larger area, using an EtherCAT coupler supports EtherCAT and FSoE.
- Sysmac Studio offers a set of unique functions to make functional safety management easier as Safety Signature Check and Online Function Verification. In addition, reduce the design cycle with automatic programming and simple automatic test.



| Product                        | Type                                                           | Model             |
|--------------------------------|----------------------------------------------------------------|-------------------|
| NX-SL3 Safety Controller Units | Safety PLC, up to 256 safety I/O and 32 safety connections *   | NX-SL3300 Ver 1.1 |
|                                | Safety PLC, up to 1024 safety I/O and 128 safety connections * | NX-SL3500 Ver 1.1 |

\* Only FSoE master connections supported

| Product                     | Type   | No. of Points | Description                                     | Model             |
|-----------------------------|--------|---------------|-------------------------------------------------|-------------------|
| Safety Input & Output Units | Input  | 4             | 4 safety input points (PNP) with 2 test outputs | NX-SIH400 Ver 1.1 |
|                             |        | 8             | 8 safety input points (PNP) with 2 test outputs | NX-SID800         |
|                             | Output | 2             | 2 safety outputs (PNP)                          | NX-SOH200         |
|                             |        | 4             | 4 safety outputs (PNP)                          | NX-SOD400         |

| Product          | Communication Cycle | Protocol          | Maximum number of NX I/O modules | Maximum Current I/O | Model     |
|------------------|---------------------|-------------------|----------------------------------|---------------------|-----------|
| Network Couplers | 250 to 4,000 us     | EtherCAT Slave    | 63                               | 4A                  | NX-ECC201 |
|                  | 125 to 10,000 us    |                   |                                  | 10A                 | NX-ECC202 |
|                  | 4 to 1,000 us       | EtherNet/IP Slave |                                  |                     | NX-ECC203 |
|                  |                     |                   |                                  |                     | NX-EIC202 |

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.

## F3SG-SR - Machine Guard Safety Light Curtain

- Three-color Area Beam Indicators (ABIs) enable easy alignment and quick troubleshooting
- Up to 30m protection range (25mm resolution and up)
- IO-Link communication capability helps improve preventive maintenance programs
- Advanced programming features (muting, blanking, pre-reset, warning zone, etc.) are available on all models.
- IP67G rating is standard, with IP69K option available (F3SG-SRB only)



| Resolution | Protective Height (mm) | Area Beam Indicators | Part Number               |
|------------|------------------------|----------------------|---------------------------|
| 14 mm      | 160                    | No                   | F3SG-4SRB0160-14          |
|            | 320                    |                      | F3SG-4SRB0320-14          |
|            | 400                    |                      | F3SG-4SRB0400-14          |
|            | 480                    |                      | F3SG-4SRB0480-14          |
|            | 560                    |                      | <b>F3SG-4SRB0560-14</b>   |
|            | 640                    |                      | F3SG-4SRB0640-14          |
|            | 720                    |                      | F3SG-4SRB0720-14-F        |
|            | 1200                   |                      | <b>F3SG-4SRB1200-14</b>   |
|            | 360                    |                      | F3SG-4SRB0360-25-F        |
| 25 mm      | 440                    |                      | F3SG-4SRB0440-25-F        |
|            | 600                    |                      | <b>F3SG-4SRB0600-25-F</b> |
|            | 680                    |                      | F3SG-4SRB0680-25-F        |
|            | 760                    |                      | F3SG-4SRB0760-25-F        |
|            | 840                    |                      | F3SG-4SRB0840-25-F        |
|            | 920                    |                      | <b>F3SG-4SRB0920-25-F</b> |
|            | 1000                   |                      | F3SG-4SRB1000-25-F        |
|            | 1200                   |                      | <b>F3SG-4SRB1200-25</b>   |
|            | 1440                   |                      | F3SG-4SRB1440-25          |
|            | 1520                   |                      | <b>F3SG-4SRB1520-25</b>   |
|            | 1600                   |                      | F3SG-4SRB1600-25          |
|            | 1840                   |                      | F3SG-4SRB1840-25          |
| 14 mm      | 400                    | Yes                  | F3SG-4SRA0400-14          |
|            | 560                    |                      | <b>F3SG-4SRA0560-14</b>   |
|            | 720                    |                      | F3SG-4SRA0720-14-F        |
|            | 880                    |                      | F3SG-4SRA0880-14-F        |
|            | 1200                   |                      | <b>F3SG-4SRA1200-14</b>   |
| 25 mm      | 280                    |                      | F3SG-4SRA0280-25-F        |
|            | 440                    |                      | F3SG-4SRA0440-25-F        |
|            | 600                    |                      | <b>F3SG-4SRA0600-25-F</b> |
|            | 760                    |                      | F3SG-4SRA0760-25-F        |
|            | 920                    |                      | <b>F3SG-4SRA0920-25-F</b> |
|            | 1200                   |                      | <b>F3SG-4SRA1200-25</b>   |
|            | 1600                   |                      | F3SG-4SRA1600-25          |
|            | 1760                   |                      | F3SG-4SRA1760-25          |



## F3SG-PG - Perimeter Guard Safety Light Curtain

- Three-color Area Beam Indicators (ABIs) enable easy alignment and quick troubleshooting.
- Protection distance up to 110m
- Robust design for harsh environments (rated IP67G)
- IO-Link communication for remote monitoring



| Number of Beams | Beam Gap (mm) | Product Length (mm) | Protection Range (m) | Type             | Part Number             |
|-----------------|---------------|---------------------|----------------------|------------------|-------------------------|
| 2               | 500           | 670                 | up to 30m            | Emitter/Receiver | F3SG-4PGA0670-2A        |
|                 | 500           | 670                 | up to 8m             | Transceiver      | F3SG-4PGA0670-2C        |
|                 | 500           | 670                 | up to 110m           | Emitter/Receiver | F3SG-4PGA0670-2L        |
| 3               | 400           | 970                 | up to 30m            | Emitter/Receiver | F3SG-4PGA0970-3A        |
|                 | 400           | 970                 | up to 110m           | Emitter/Receiver | <b>F3SG-4PGA0970-3L</b> |
| 4               | 300           | 1070                | up to 30m            | Emitter/Receiver | F3SG-4PGA1070-4A        |
|                 | 300           | 1070                | up to 8m             | Transceiver      | F3SG-4PGA1070-4C        |
|                 | 300           | 1070                | up to 110m           | Emitter/Receiver | F3SG-4PGA1070-4L        |
|                 | 400           | 1370                | up to 30m            | Emitter/Receiver | F3SG-4PGA1370-4A        |
|                 | 400           | 1370                | up to 8m             | Transceiver      | F3SG-4PGA1370-4C        |
|                 | 400           | 1370                | up to 110m           | Emitter/Receiver | <b>F3SG-4PGA1370-4L</b> |

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.

## Safety Light Curtain Accessories and Cables

### F3SG-SR/PG Brackets

| Description                                          | Part Number         |
|------------------------------------------------------|---------------------|
| Standard Bracket (non-adjustable)                    | F39-LSGF            |
| Adjustable Side-Mount Bracket                        | <b>F39-LSGA</b>     |
| Adjustable Top/Bottom Bracket (F3SJ, F3SN Adaptor)   | F39-LSGTB-SJ        |
| Adjustable Top/Bottom Bracket (F3SG-RA/RE Adaptor)   | <b>F39-LSGTB-RE</b> |
| Adjustable Top/Bottom Bracket (MS4800, F3SR Adaptor) | <b>F39-LSGTB-MS</b> |

### F3SG-SR/PG Root Cables (plug into light curtain)

| Description                                                      | Length | Emitter Part Number   | Receiver Part Number  |
|------------------------------------------------------------------|--------|-----------------------|-----------------------|
| Root Cable to M12 connector (Standard)                           | 0.3 m  | <b>F39-JGR3K-L</b>    | <b>F39-JGR3K-D</b>    |
| Root Cable to Flying Leads                                       | 3m     | <b>F39-JG3C-L</b>     | <b>F39-JG3C-D</b>     |
| Root Cable to Flying Leads                                       | 7m     | F39-JG7C-L            | F39-JG7C-D            |
| Root Cable to Flying Leads                                       | 10m    | F39-JG10C-L           | F39-JG10C-D           |
| Root Cable to M12 Connector (F3SJ-B/A, F3SR, or F3SN Conversion) | 0.3 m  | F39-JGR3K-SJ-L        | F39-JGR3K-SJ-D        |
| Root Cable to M12 Connector (F3SG-RE Conversion)                 | 0.3 m  | F39-JGR3K-RE-L        | F39-JGR3K-RE-D        |
| Root Cable to M12 Connector (MS4800 Conversion)                  | 0.3 m  | <b>F39-JGR3K-MS-L</b> | <b>F39-JGR3K-MS-D</b> |

### F3SG-SR/PG Extension Cables (plug into M12 Root Cable)

| Description                        | Length | Emitter Part Number | Receiver Part Number |
|------------------------------------|--------|---------------------|----------------------|
| M12 to Flying Lead Extension Cable | 3 m    | F39-JG3A-L          | F39-JG3A-D           |
| M12 to Flying Lead Extension Cable | 10 m   | <b>F39-JG10A-L</b>  | <b>F39-JG10A-D</b>   |
| M12 to M12 Extension Cable         | 3 m    | F39-JG3B-L          | F39-JG3B-D           |
| M12 to M12 Extension Cable         | 10 m   | F39-JG10B-L         | F39-JG10B-D          |
| M12 to M12 Extension Cable         | 20 m   | F39-JG20B-L         | F39-JG20B-D          |

### F3SG-SR Cascade Cables

| Description                                              | Length | Part Number       |
|----------------------------------------------------------|--------|-------------------|
| Side-by-Side Cascading Cable (2 cables per part number)  | 0.12 m | <b>F39-JGR12L</b> |
| Extension Cable for Cascading (2 cables per part number) | 0.3 m  | <b>F39-JGR3W</b>  |

### F3SG-SR/PG IO-Link Cables

| Description             | Length | Part Number      |
|-------------------------|--------|------------------|
| NX-ILM400 IO-Link Cable | 2 m    | X5SF-D521-DJ0-IL |
| GX-ILM08C IO-Link Cable | 3 m    | F39-JG3B-L       |
| GX-ILM08C IO-Link Cable | 10 m   | F39-JG10B-L      |
| GX-ILM08C IO-Link Cable | 20 m   | F39-JG20B-L      |

### F3SG-SR/PG Wiring Reduction and Reset Cables

| Description                                  | Length | Part Number     |
|----------------------------------------------|--------|-----------------|
| Y-Joint Plug/Socket Connector                | 0.5 m  | F39-GCNY2       |
| Reset Switch Connector                       | 0.5 m  | F39-GCNY3       |
| Reset Switch Connector to Reset Switch Cable | 1 m    | X5SF-D421-C80-F |
| Reset Switch Connector to Reset Switch Cable | 2 m    | X5SF-D421-D80-F |
| Reset Switch Connector to Reset Switch Cable | 3 m    | X5SF-D421-E80-F |
| Reset Switch Connector to Reset Switch Cable | 5 m    | X5SF-D421-G80-F |
| Reset Switch Connector to Reset Switch Cable | 10 m   | X5SF-D421-J80-F |
| Reset Switch Connector to Reset Switch Cable | 20 m   | X5SF-D421-L80-F |

## F3SG-SR/PG Accessories

### F3SG-SR, F3SG-PG, and F3SG-R[] Floor Mount Columns

| Applicable F3SG-SR/F3SG-R[] Light Curtain | Applicable F3SG-PG Light Curtain         | Column Height | Part Number       |
|-------------------------------------------|------------------------------------------|---------------|-------------------|
| Protective Height up to 880 mm            | F3SG-4PGA0670-2[]                        | 990 mm        | F39-ST0990        |
| Protective Height up to 1280 mm           | F3SG-4PGA0970-3A/3L<br>F3SG-4PGA1070-4[] | 1310 mm       | <b>F39-ST1310</b> |
| Protective Height up to 1520 mm           | F3SG-4PGA1370-4[]                        | 1630 mm       | F39-ST1630        |
| Protective Height up to 1840 mm           | -----                                    | 1950 mm       | F39-ST1950        |
| Protective Height up to 2080 mm           | -----                                    | 2270 mm       | F39-ST2270        |

### F3SG-SR, F3SG-PG, and F3SG-R[] Mirror Columns

| Applicable F3SG-SR/F3SG-R[] Light Curtain | Applicable F3SG-PG Light Curtain         | Column Height | Part Number        |
|-------------------------------------------|------------------------------------------|---------------|--------------------|
| Protective Height up to 880 mm            | F3SG-4PGA0670-2[]                        | 990 mm        | F39-SML0990        |
| Protective Height up to 1200 mm           | F3SG-4PGA0970-3A/3L<br>F3SG-4PGA1070-4[] | 1310 mm       | <b>F39-SML1310</b> |
| Protective Height up to 1520 mm           | F3SG-4PGA1370-4[]                        | 1630 mm       | F39-SML1630        |
| Protective Height up to 1840 mm           | -----                                    | 1950 mm       | F39-SML1950        |
| -----                                     | F3SG-4PGA0670-2A/2L                      | 990 mm        | F39-PML0990-2      |
| -----                                     | F3SG-4PGA0970-3A/3L                      | 1310 mm       | F39-PML1310-3      |
| -----                                     | F3SG-4PGA1070-4A/4L                      | 1310 mm       | F39-PML1310-4      |
| -----                                     | F3SG-4PGA1370-4A/4L                      | 1950 mm       | F39-PML1630-4      |

### Stand and Mirror Base Accessory

| Description                          | Part Number    |
|--------------------------------------|----------------|
| Adjustable and Rotatable Column Base | <b>F39-STB</b> |

### F3SG-SR and F3SG-PG Muting Accessories

| Description                                 | Length | Part Number |
|---------------------------------------------|--------|-------------|
| Through Beam Muting Sensor Mounting Arm     | 150 mm | F39-FMA150T |
| Through Beam Muting Sensor Mounting Arm     | 400 mm | F39-FMA400T |
| Retro-Reflective Muting Sensor Mounting Arm | 150 mm | F39-FMA150R |
| Retro-Reflective Muting Sensor Mounting Arm | 400 mm | F39-FMA400R |
| Muting Arm Bracket for F3SG-SR/PG Mounting  | n/a    | F39-LMAF1   |
| Muting Sensor Connection Box                | n/a    | F39-GCN5    |

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.

## F3SG-RE - Economic Model

- Simple on/off functionality with easy wiring
- 5ms response time
- IP67 Rated
- Resolutions of 14 and 30mm



| Resolution | Protective Height (mm) | Part Number            |
|------------|------------------------|------------------------|
| 14 mm      | 160                    | F3SG-4RE0160P14        |
|            | 240                    | F3SG-4RE0240P14        |
|            | 320                    | F3SG-4RE0320P14        |
|            | 560                    | F3SG-4RE0560P14        |
|            | 640                    | F3SG-4RE0640P14        |
|            | 960                    | F3SG-4RE0960P14        |
|            | 1200                   | F3SG-4RE1200P14        |
| 30 mm      | 350                    | F3SG-4RE0350P30        |
|            | 430                    | F3SG-4RE0430P30        |
|            | 590                    | <b>F3SG-4RE0590P30</b> |
|            | 750                    | F3SG-4RE0750P30        |
|            | 910                    | <b>F3SG-4RE0910P30</b> |
|            | 1070                   | F3SG-4RE1070P30        |
|            | 1230                   | <b>F3SG-4RE1230P30</b> |
|            | 1550                   | F3SG-4RE1550P30        |

### Cables

| Material                                            | Length | Model            |
|-----------------------------------------------------|--------|------------------|
| PVC Cable                                           | 2m     | XS2F-M12PVC4S2M  |
|                                                     | 5m     | XS2F-M12PVC4S5M  |
|                                                     | 10m    | XS2F-M12PVC4S10M |
| PUR Cable                                           | 2m     | XS2F-M12PUR4S2M  |
|                                                     | 5m     | XS2F-M12PUR4S5M  |
|                                                     | 10m    | XS2F-M12PUR4S10M |
| Connection cable in 'Y' between Sender and Receiver | 0.5m   | F39-GCNY1        |

### Accessories (for Advanced and Economic models)

| Type                                         | Description                         | Model          |
|----------------------------------------------|-------------------------------------|----------------|
| Fixed Mounting Bracket<br>(Already included) | Side fixation (2 supports per code) | F39-LGF        |
|                                              |                                     | <b>F39-LGA</b> |
| Adjustable Mounting Bracket<br>(Optional)    | Top fixation (4 supports per code)  | F39-LGTB       |
|                                              |                                     | F39-LGTB-1     |

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.

## OS32C - Safety Laser Scanner

- 4m maximum safety zone and 15m warning zone
- Up to 70 different detection zones configurations
- Distance measurement capabilities up to 50m
- 5W power consumption



| Cable Outlet | Safety Range | Ethernet/IP Data | Part Number        |
|--------------|--------------|------------------|--------------------|
| Back         | 3m           | No               | OS32C-BP           |
|              | 4m           | No               | <b>OS32C-BP-4M</b> |
|              | 3m           | Yes              | OS32C-BP-DM        |
|              | 4m           | Yes              | OS32C-BP-DM-4M     |
| Side         | 3m           | No               | OS32C-SP1          |
|              | 4m           | No               | OS32C-SP1-4M       |
|              | 3m           | Yes              | OS32C-SP1-DM       |
|              | 4m           | Yes              | OS32C-SP1-DM-4M    |

### OS32C Safety Laser Scanner Cables

| Description    | Length | Part Number           |
|----------------|--------|-----------------------|
| Power Cable    | 3 m    | <b>OS32C-CBL-03M</b>  |
|                | 10 m   | OS32C-CBL-10M         |
|                | 20 m   | OS32C-CBL-20M         |
|                | 30 m   | OS32C-CBL-30M         |
| Ethernet Cable | 2 m    | <b>OS32C-ECBL-02M</b> |
|                | 5 m    | OS32C-ECBL-05M        |
|                | 15 m   | OS32C-ECBL-15M        |

### OS32C Safety Laser Scanner Brackets

| Description                       | Part Number       |
|-----------------------------------|-------------------|
| Bottom/Side Mounting Bracket      | <b>OS32C-BKT1</b> |
| XY Axis Rotation Mounting Bracket | OS32C-BKT2        |
| Simple Mounting Bracket           | OS32C-BKT3        |
| Protective Cover for Window       | OS32C-BKT4        |
| Mounting Stand                    | OS32C-MT          |
| Hardware kit for Mounting Stand   | OS32C-HDT         |

### OS32C Spare/Replacement Parts

| Description                                    | Part Number         |
|------------------------------------------------|---------------------|
| Scan Window                                    | <b>OS32C-WIN-KT</b> |
| Sensor block without I/O 3m Range              | OS32C-SN            |
| Sensor block without I/O 4m Range              | OS32C-SN-4M         |
| Sensor block without I/O 3m Range, Ethernet/IP | OS32C-SN-DM         |
| Sensor block without I/O 4m Range, Ethernet/IP | OS32C-SN-DM-4M      |
| I/O Block with Back Cable Access               | OS32C-CBBP          |
| I/O Block with Side Cable Access               | OS32C-CBSP1         |

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.



## G9SE - Safety Relays

- A compact safety relay for simple safety applications, with screwless terminals and increased diagnostic capabilities for fast troubleshooting and easy wiring
- Modules with two or four safety contacts and OFF-delay timing options
- Compact units, 17.5 or 22.5 mm wide
- Front side wiring using screw less terminals and led indicators for fast diagnostic



| Safety Outputs | Auxiliary Output | OFF-delay Max. time | Power | Model               |
|----------------|------------------|---------------------|-------|---------------------|
| 2              | 1                | -                   | 24VDC | <b>G9SE-201</b>     |
| 4              |                  | -                   |       | <b>G9SE-401</b>     |
| 2              |                  | 5 s                 |       | <b>G9SE-221-T05</b> |
| 2              |                  | 30 s                |       | G9SE-221-T30        |

## G9SA - Expandable Safety Relay

- All-purpose expandable safety relays series ideal for high demand applications.
- Ideal for high demand applications.
- Expandable outputs options only, up to 8: instantaneous or time-delay
- Simple expansion connection available



| Safety Outputs | Auxiliary Outputs | Power | Model                   |
|----------------|-------------------|-------|-------------------------|
| 3              | 1                 | 24VDC | G9SA-301 AC/DC24        |
| 5              | 1                 |       | <b>G9SA-501 AC/DC24</b> |
| 3              | 1                 |       | G9SA-EX301              |
| 3              | 1                 |       | G9SA-TH301 AC/DC24*     |

\* Two hand controller (type III C, EN 574)

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.

## G9SX - Safety Modules

- A versatile safety relay series, ideal for scalable safety solution, support logical “AND” functions for expansion and offer special modules for dedicated safety functions
- G9SX-family modules can be connected by a logical “AND” function to implement partial/global stopping of a machine
- Solid-state outputs, detailed LED diagnosis and clever feedback signals help to keep maintenance easy
- Expansion units with safe timing functions complete the line-up



| Terminal Block Type   | Safety Output Instantaneous | Safety Output – Off-Delayed | Safety Standstill detection output | Safety slow-speed/ stopping detection output | Auxiliary Outputs | Power | Model                     |
|-----------------------|-----------------------------|-----------------------------|------------------------------------|----------------------------------------------|-------------------|-------|---------------------------|
| Screw Terminal        | 2                           | 0                           | 0                                  | 0                                            | 2                 | 24VDC | <b>G9SX-BC202-RT DC24</b> |
| Spring-cage terminals | 3                           | 2                           | 0                                  | 0                                            | 2                 |       | G9SX-AD322-T15-RC DC24*   |
| Screw Terminals       | 0                           | 0                           | 3                                  | 0                                            | 2                 |       | G9SX-SM032-RT             |
| Screw Terminals       | 2                           | 0                           | 0                                  | 2                                            | 4                 |       | G9SX-LM224-F10-RT **      |
| Screw Terminals       | 2                           | 0                           | 0                                  | 0                                            | 2                 |       | G9SX-NS202-RT DC24 ***    |
| Screw Terminals       | 2                           | 2                           | 0                                  | 0                                            | 2                 |       | G9SX-NSA222-T03-RT DC24   |

\*Off-Delay:

T15: 0/0.2/0.3/0.4/0.5/0.6/0.7/1/1.5/2/3/4/5/7/10/15 s

T03: 0/0.2/0.3/0.4/0.5/0.6/0.7/0.8/0.9/1.0/1.2/1.4/1.8/2.0/2.5/3.0 s

\*\* Safe Standstill monitoring unit based on Back EMF operation for two and three phase systems.

\*\*\* Limited speed monitoring unit

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.

## D40Z - Compact Non-Contact Door Switch

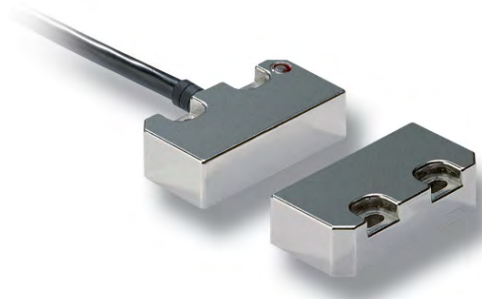
- Up 30 Switches can be connected to one Safety Controller while maintaining PLe/safety category 4
- Can be connected to G9SP or G9SX-NS[] Safety Controllers
- LED indication for easy troubleshooting
- Compact Non-contact Door Switch can be mounted from both sides



| Cable length | Auxiliary Outputs | Model           |
|--------------|-------------------|-----------------|
| 2 m          | 1                 | D40Z-1C2        |
| 5 m          |                   | <b>D40Z-1C5</b> |

## D40P - Non-Contact Safety Switches

- Hall effect technology provides solid state outputs for increased longevity
- LED indicates operation state
- Operates with all OMRON safety controllers and safety relays
- Connect up to 20 switches in series, up to PLd acc. EN ISO 13849-1



| Body Size | Housing           | Contacts  | Cable Connection                     | Model                  |
|-----------|-------------------|-----------|--------------------------------------|------------------------|
| Elongated | Polyester Housing | 2NC / 1NO | M12, 8 pin, fitted with 250 mm cable | <b>D40P-LPC-21-M12</b> |
| Small     |                   |           | M12, 8 pin, fitted with 250 mm cable | D40P-SPC-21-M12        |
| Barrel    |                   |           | 5 m pre-wired                        | D40P-BPC-21-05         |
| Small     | Stainless Steel   |           | 5 m pre-wired                        | D40P-SMC-21-05         |
| Small     | Hygienic          | 2NC / 1NO | M12, 8 pin, fitted with 250 mm cable | D40P-SHC-21-M12        |

## Accessories

| Type                                       | Description               | Model                    |
|--------------------------------------------|---------------------------|--------------------------|
| Cables, M12 female - 8 pin to flying leads | 5m                        | D40ML-CBL-M12-5M         |
| Cables, M12 female - 8 pin to flying leads | 10m                       | <b>D40ML-CBL-M12-10M</b> |
| T-Connector Connection Cable               | T-Connector for M12 cable | D40P-8PTC-M12            |

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.

## D40ML - RFID Magnetic Locking Safety Switch

- Magnetic latching combines with RFID technology to deliver high holding force and tamper resistance
- Residual magnetism acts as light door latch after unlocking and it provides multiple holding forces
- Clean/Sanitize in Place – stainless steel versions are rated IP69K
- For use on machines with no rundown time if power is lost



| Actuator Type | Case Material               | Holding Force | Cable Connection         | Model           |
|---------------|-----------------------------|---------------|--------------------------|-----------------|
| Basic         | Diecast Metal (IP67)        | 1500N         | Pigtail w/ M12 Connector | D40ML-M1-B-M12  |
| Basic         | Plastic (IP67)              | 1500N         |                          | D40ML-P1-B-M12  |
| Basic         | 316 Stainless Steel (IP69K) | 950N          |                          | D40ML-SS1-B-M12 |
| Unique        | 316 Stainless Steel (IP69K) | 600N          | 5m Cable                 | D40ML-SS2-U-5M  |

### Accessories

| Type                                       | Description | Model             |
|--------------------------------------------|-------------|-------------------|
| Cables, M12 female - 8 pin to flying leads | 5m          | D40ML-CBL-M12-5M  |
| Cables, M12 female - 8 pin to flying leads | 10m         | D40ML-CBL-M12-10M |

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.

## D4SL-N - Guard Lock Safety Door Switch

- A wide variety of built-in switches can be used for various devices (4-, 5-, and 6-contact models are available)
- Removable terminal block for easy wiring and quick maintenance
- Key holding force of 1,300N
- Slide key available to prevent workers from becoming trapped inside the hazardous area
- Can be easily mounted on 40 × 40 mm aluminum frames



| Type   | Conduit Size | Contact Model     | Head Material | Door Lock and Release                  | Indicator | Model               |
|--------|--------------|-------------------|---------------|----------------------------------------|-----------|---------------------|
| D4SL-N | 1/2-14NPT *  | 2NC/1NO + 2NC/1NO | Metal         | Mechanical lock/24VDC solenoid release | Yes       | <b>D4SL-N3NDA-D</b> |
|        | 1/2-14NPT *  | 2NC/1NO + 2NC/1NO | Metal         | 24VDC solenoid lock/mechanical release | Yes       | <b>D4SL-N3NDG-D</b> |
|        | M20          | 3NC + 1NC/1NO     | Resin         | Mechanical lock/24VDC solenoid release | Yes       | D4SL-N4GFA-D        |
|        | G1/2         | 2NC/1NO + 2NC/1NO | Resin         | Mechanical lock/24VDC solenoid release | Yes       | D4SL-N2NFA-D4       |

\* M20, includes M20-to-1/2-14NPT conversion adapter.

## Slides Key for D4SL

- Lockout Key to prevent workers from becoming trapped inside the hazardous area
- The plastic material makes the Slide Key suitable for lightweight doors



| Description                | Model                |
|----------------------------|----------------------|
| Slide Key Kit              | <b>D4SL-NSK10-LK</b> |
| Slide Key with inner lever | D4SL-NSK10-LKH       |

## Operation Keys for D4SL

| Mounting Orientation | Special Function | Model     |
|----------------------|------------------|-----------|
| Horizontal           | -                | D4SL-NK1  |
| Horizontal           | Rubber cushions  | D4SL-NK1G |
| Vertical             | -                | D4SL-NK2  |
| Horizontal           | Adjustable       | D4SL-NK3  |

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.

## PMAC Motion Controllers CK3 Series

### CK3E - EtherCAT Based Controllers

- 32, 16 or 8 axes motion control
- Up to 250  $\mu$ s cycle time
- Compatible with standard G-Code functions
- Save space & wiring thanks to compact design
- CAD/CAM for easy motion control
- EtherCAT for flexible configuration



| Number of Axis | Memory capacity | Programming language                        | Model        |
|----------------|-----------------|---------------------------------------------|--------------|
| 8              | 1G              | G-Code/ANSI C/original programming language | CK3E-1210-US |
| 16             |                 |                                             | CK3E-1310-US |
| 32             |                 |                                             | CK3E-1410-US |

By combining global leading Delta Tau Data Systems' Motion Control technologies, Omron can open up new applications and solutions. The CK3E is a controller designed for precise multi-axis control. You can build a system capable of controlling up to 32 axes of motion and incorporate customized control algorithms into the system. The CK3E allows you to program in C language and reuse existing software assets. The compact design saves space in machines and control panels. EtherCAT® connects servo drives, I/O, and other devices to the CK3E, reducing the number of cables.

### CK3M - Modular Controllers

- Local axes for nanoscale precision
- Ultra high-speed synchronous control (50 $\mu$ s/5 axes)
- Custom servo regulation algorithms
- Flexibility on using multi-vendor actuators and encoders
- Flexibility on programming on G-code, ANSI C or original programming language



| Product Type | Memory capacity                       | EtherCAT® port              | EtherCAT Axes | Expansion                                                                                    | Model       |
|--------------|---------------------------------------|-----------------------------|---------------|----------------------------------------------------------------------------------------------|-------------|
| CPU Units    | RAM: 1 GB Built-In flash memory: 1 GB | -                           | -             | One expansion rack can be connected using the expansion master unit and expansion slave unit | CK3M-CPU101 |
|              |                                       | EtherCAT®: 1 port (DC sync) | 4             |                                                                                              | CK3M-CPU111 |
|              |                                       |                             | 8             |                                                                                              | CK3M-CPU121 |

Maximize your machine's performance: Performing precise linear motor drive control and nanoscale positioning, the PMAC (Programmable Multi Axis Controller) has been appreciated by manufacturers of semiconductor manufacturing equipment and other leading-edge equipment. Omron now offers a next generation motion controller CK3M that packs PMAC's superior motion control capability, multi-vendor connectivity, and flexible development capability into its compact design. The CK3M removes constraints and barriers and maximizes your machine's capabilities.

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.



| Product Type          | Amplifier interface      | Encoder interface                         | Output type | Model        |
|-----------------------|--------------------------|-------------------------------------------|-------------|--------------|
| Axial Interface Units | DirectPWM output         | Digital quadrature encoder/serial encoder | NPN type    | CK3W-AX1313N |
|                       | DA output (Filtered PWM) |                                           |             | CK3W-AX1414N |
|                       | DA output (True DAC)     |                                           |             | CK3W-AX1515N |
|                       | DirectPWM output         | Sinusoidal encoder/Serial encoder         |             | CK3W-AX2323N |
|                       | DirectPWM output         | Digital quadrature encoder/serial encoder | PNP type    | CK3W-AX1313P |
|                       | DA output (Filtered PWM) |                                           |             | CK3W-AX1414P |
|                       | DA output (True DAC)     |                                           |             | CK3W-AX1515P |
|                       | DirectPWM output         | Sinusoidal encoder/Serial encoder         |             | CK3W-AX2323P |

| Product Type      | Description                          | Model      |
|-------------------|--------------------------------------|------------|
| Power Supply Unit | Rated output voltage: 5 VDC / 24 VDC | CK3W-PD048 |

| Product Type      | Number of inputs | Number of outputs | I/O type | Model       |
|-------------------|------------------|-------------------|----------|-------------|
| Digital I/O Units | 16 points        | 16 points         | NPN      | CK3W-MD7110 |
|                   |                  |                   | PNP      | CK3W-MD7120 |

| Product Type       | Input Range      | Number of inputs | Model       |
|--------------------|------------------|------------------|-------------|
| Analog Input Units | Unit -10 to 10 V | 4 points         | CK3W-AD2100 |
|                    |                  | 8 points         | CK3W-AD3100 |

| Product Type                                   | Product Name          | Function                                                                 | Model        |
|------------------------------------------------|-----------------------|--------------------------------------------------------------------------|--------------|
| Expansion Master Unit and Expansion Slave Unit | Expansion Master Unit | Expansion Master Unit connects to the right side of the CPU Unit         | CK3W-EXM01   |
|                                                | Expansion Slave Unit  | Expansion Slave Unit connects to the right side of the Power Supply Unit | CK3W-EXS02   |
|                                                | Expansion cable       | To connection between the Expansion Master Unit and Slave Unit (0.3m)    | CK3W-CAX003A |

## Power PMAC IDE (Integrated Development Environment)

- Based on Microsoft® Visual Studio®
- ANSI C or original programming language
- Easy tuning
- Simple setting
- Troubleshooting
- Debugger

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.

## 1S Series - Servomotor

- Advanced design allows easy installation and wiring
- EtherCAT communications up to 125µsec
- Safety over the EtherCAT network
- Motor has 23-bit battery less absolute encoder
- 350% momentary torque (200 V, 750 W max.)



| RPM      | Capacity | Torque   | Motor                | Drive                  | Motor                | Drive                   |
|----------|----------|----------|----------------------|------------------------|----------------------|-------------------------|
|          |          |          | 110V VAC             |                        | 480V VAC             |                         |
| 3000 RPM | 0.05 kW  | 0.159 Nm | R88M-1M05030S-(1)S2  | <b>R88D-1SN01L-ECT</b> |                      |                         |
|          | 0.1 kW   | 0.318 Nm | R88M-1M10030S-(1)S2  | R88D-1SN01L-ECT        |                      |                         |
|          | 0.2 kW   | 0.637 Nm | R88M-1M20030S-(1)S2  | R88D-1SN02L-ECT        |                      |                         |
|          | 0.4 kW   | 1.27 Nm  | R88M-1M40030S-(1)S2  | R88D-1SN04L-ECT        |                      |                         |
|          |          |          | 220V VAC             |                        |                      |                         |
|          | 0.05 kW  | 0.159 Nm | R88M-1M05030T-(1)S2  | <b>R88D-1SN01H-ECT</b> |                      |                         |
|          | 0.1 kW   | 0.318 Nm | R88M-1M10030T-(1)S2  | R88D-1SN01H-ECT        |                      |                         |
|          | 0.2 kW   | 0.637 Nm | R88M-1M20030T-(1)S2  | <b>R88D-1SN02H-ECT</b> |                      |                         |
|          | 0.4 kW   | 1.27 Nm  | R88M-1M40030T-(1)S2  | <b>R88D-1SN04H-ECT</b> |                      |                         |
|          | 0.75 kW  | 2.39 Nm  | R88M-1M75030T-(1)S2  | <b>R88D-1SN08H-ECT</b> | R88M-1L75030C-(1)S2  | R88D-1SN10F-ECT         |
|          | 1.0 kW   | 3.18 Nm  | R88M-1L1K030T-(1)S2  | <b>R88D-1SN10H-ECT</b> | R88M-1L1K030C-(1)S2  | R88D-1SN10F-ECT         |
|          | 1.5 kW   | 4.77 Nm  | R88M-1L1K530T-(1)S2  | <b>R88D-1SN15H-ECT</b> | R88M-1L1K530C-(1)S2  | R88D-1SN15F-ECT         |
|          | 2.0 kW   | 6.37 Nm  | R88M-1L2K030T-(1)S2  | <b>R88D-1SN20H-ECT</b> | R88M-1L2K030C-(1)S2  | <b>R88D-1SN20F-ECT</b>  |
|          | 3.0 kW   | 9.55 Nm  | R88M-1L3K030T-(1)S2  | <b>R88D-1SN30H-ECT</b> | R88M-1L3K030C-(1)S2  | R88D-1SN30F-ECT         |
|          | 4.0 kW   | 12.7 Nm  | R88M-1L4K030T-(1)S2  | R88D-1SN55H-ECT        | R88M-1L4K030C-(1)S2  | R88D-1SN55F-ECT         |
|          | 5.5 kW   | 15.9 Nm  | R88M-1L5K030T-(1)S2  | R88D-1SN55H-ECT        | R88M-1L5K030C-(1)S2  | R88D-1SN55F-ECT         |
| 2000 RPM | 0.4 kW   | 1.91 Nm  |                      |                        | R88M-1M40020C-(1)S2  | R88D-1SN06F-ECT         |
|          | 0.6 kW   | 2.86 Nm  |                      |                        | R88M-1M60020C-(1)S2  | R88D-1SN06F-ECT         |
|          | 1.0 kW   | 4.77 Nm  | R88M-1M1K020T-(1)S2  | R88D-1SN10H-ECT        | R88M-1M1K020C-(1)S2  | R88D-1SN10F-ECT         |
|          | 1.5 kW   | 7.16 Nm  | R88M-1M1K520T-(1)S2  | R88D-1SN15H-ECT        | R88M-1M1K520C-(1)S2  | R88D-1SN15F-ECT         |
|          | 2.0 kW   | 9.55 Nm  | R88M-1M2K020T-(1)S2  | R88D-1SN20H-ECT        | R88M-1M2K020C-(1)S2  | R88D-1SN20F-ECT         |
|          | 3.0 kW   | 14.3 Nm  | R88M-1M3K020T-(1)S2  | R88D-1SN30H-ECT        | R88M-1M3K020C-(1)S2  | R88D-1SN30F-ECT         |
| 1500 RPM | 4 kW     | 25.5 Nm  | R88M-1M4K015T-(1)S2  | R88D-1SN55H-ECT        | R88M-1M4K015C-(1)S2  | <b>R88D-1SN55F-ECT</b>  |
|          | 5.5 kW   | 35 Nm    | R88M-1M5K515T-(1)S2  | <b>R88D-1SN55H-ECT</b> | R88M-1M5K515C-(1)S2  | R88D-1SN55F-ECT         |
|          | 7.5kW    | 47.8 Nm  | R88M-1M7K515T-(1)S2  | <b>R88D-1SN75H-ECT</b> | R88M-1M7K515C-(1)S2  | <b>R88D-1SN75F-ECT</b>  |
|          | 11 kW    | 70 Nm    | R88M-1M11K015T-(1)S2 | R88D-1SN150H-ECT       | R88M-1M11K015C-(1)S2 | <b>R88D-1SN150F-ECT</b> |
|          | 15 kW    | 95.5 Nm  | R88M-1M15K015T-(1)S2 | R88D-1SN150H-ECT       | R88M-1M15K015C-(1)S2 | R88D-1SN150F-ECT        |
| 1000 RPM | 0.9 kW   | 8.59 Nm  | R88M-1M90010T-(1)S2  | R88D-1SN10H-ECT        | R88M-1M90010C-(1)S2  | R88D-1SN10F-ECT         |
|          | 2.0 kW   | 19.1 Nm  | R88M-1M2K010T-(1)S2  | R88D-1SN20H-ECT        | R88M-1M2K010C-(1)S2  | R88D-1SN20F-ECT         |
|          | 3.0 kW   | 28.7 Nm  | R88M-1M3K010T-(1)S2  | R88D-1SN30H-ECT        | R88M-1M3K010C-(1)S2  | R88D-1SN30F-ECT         |

Note: (1) B - Motor with brake WHITE - Without brake

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.

## 3G3MX2 - Frequency Inverter

- Vector Frequency Inverter
- Communication with major industrial communication networks
- Built-in Safety Torque Off function
- Embedded Micro PLC



| Capacity CT |       | 220V Single phase      | 220V Three-phase       | 480V Three-phase       |
|-------------|-------|------------------------|------------------------|------------------------|
| kW          | HP    |                        |                        |                        |
| 0.1         | 1/8   | 3G3MX2-AB001-V1        | 3G3MX2-A2001-V1        | -                      |
| 0.2         | 1/4   | 3G3MX2-AB002-V1        | <b>3G3MX2-A2002-V1</b> | -                      |
| 0.4         | 1/2   | <b>3G3MX2-AB004-V1</b> | <b>3G3MX2-A2004-V1</b> | <b>3G3MX2-A4004-V1</b> |
| 0.75        | 1     | <b>3G3MX2-AB007-V1</b> | <b>3G3MX2-A2007-V1</b> | <b>3G3MX2-A4007-V1</b> |
| 1.5         | 2     | 3G3MX2-AB015-V1        | <b>3G3MX2-A2015-V1</b> | <b>3G3MX2-A4015-V1</b> |
| 2.2         | 3     | 3G3MX2-AB022-V1        | <b>3G3MX2-A2022-V1</b> | <b>3G3MX2-A4022-V1</b> |
| 3           | 4     | -                      | -                      | 3G3MX2-A4030-V1        |
| 3.7         | 5     | -                      | <b>3G3MX2-A2037-V1</b> | -                      |
| 4           | 5     | -                      | -                      | 3G3MX2-A4040-V1        |
| 5.5         | 7-1/2 | -                      | 3G3MX2-A2055-V1        | 3G3MX2-A4055-V1        |
| 7.5         | 10    | -                      | 3G3MX2-A2075-V1        | 3G3MX2-A4075-V1        |
| 11          | 15    | -                      | 3G3MX2-A2110-V1        | 3G3MX2-A4110-V1        |
| 15          | 20    | -                      | 3G3MX2-A2150-V1        | 3G3MX2-A4150-V1        |

### Expansion Modules and Accessories

| Description             | Accessory                          | Model                  |
|-------------------------|------------------------------------|------------------------|
| Optional Communications | Profibus Communication             | 3G3AX-MX2-PRT-E        |
|                         | DeviceNet Communication            | 3G3AX-MX2-DRT          |
|                         | EtherCAT Communication             | <b>3G3AX-MX2-ECT</b>   |
|                         | CompoNET Communication             | 3G3AX-MX2-CRT-E        |
|                         | Mechatrolink II Communication      | 3G3AX-MX2-ML2          |
|                         | EtherNet/IP Communication          | <b>3G3AX-MX2-EIP-A</b> |
| Remote HMI              | Remote HMI with Potentiometer      | 3G3AX-OP01             |
|                         | Communication cable for Remote HMI | 3G3AX-OPCN3            |

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.

## 3G3RX - Frequency Inverter

- Sensor-less and vector closed-loop control
- Full torque at 0 Hz in closed loop
- High starting torque in open loop: 200% at 0.3 Hz
- Double rating VT 120%/1 min and CT 150%/1 min
- Built-in EMC filter
- Built-in logic programmability



| Voltage           | Constant torque |                   | Variable torque |                   | Model          |
|-------------------|-----------------|-------------------|-----------------|-------------------|----------------|
|                   | Max motor (kW)  | Rated current (A) | Max motor (kW)  | Rated current (A) |                |
| Three-phase 200 V | 0.4             | 3                 | 0.75            | 3.7               | 3G3RX-A2004-V1 |
|                   | 0.75            | 5                 | 1.5             | 6.3               | 3G3RX-A2007-V1 |
|                   | 1.5             | 7.5               | 2.2             | 9.4               | 3G3RX-A2015-V1 |
|                   | 2.2             | 10.5              | 4               | 12                | 3G3RX-A2022-V1 |
|                   | 4               | 16.5              | 5.5             | 19.6              | 3G3RX-A2037-V1 |
|                   | 5.5             | 24                | 7.5             | 30                | 3G3RX-A2055-V1 |
|                   | 7.5             | 32                | 11              | 44                | 3G3RX-A2075-V1 |
|                   | 11              | 46                | 15              | 58                | 3G3RX-A2110-V1 |
|                   | 15              | 64                | 18.5            | 73                | 3G3RX-A2150-V1 |
|                   | 18.5            | 76                | 22              | 85                | 3G3RX-A2185-V1 |
|                   | 22              | 95                | 30              | 113               | 3G3RX-A2220-V1 |
|                   | 30              | 121               | 37              | 140               | 3G3RX-A2300-V1 |
|                   | 37              | 145               | 45              | 169               | 3G3RX-A2370-V1 |
|                   | 45              | 182               | 55              | 210               | 3G3RX-A2450-V1 |
|                   | 55              | 220               | 75              | 270               | 3G3RX-A2550-V1 |
| Three-phase 400 V | 0.4             | 1.5               | 0.75            | 1.9               | 3G3RX-A4004-V1 |
|                   | 0.75            | 2.5               | 1.5             | 3.1               | 3G3RX-A4007-V1 |
|                   | 1.5             | 3.8               | 2.2             | 4.8               | 3G3RX-A4015-V1 |
|                   | 2.2             | 5.3               | 4               | 6.7               | 3G3RX-A4022-V1 |
|                   | 4               | 9                 | 5.5             | 11.1              | 3G3RX-A4040-V1 |
|                   | 5.5             | 14                | 7.5             | 16                | 3G3RX-A4055-V1 |
|                   | 7.5             | 19                | 11              | 22                | 3G3RX-A4075-V1 |
|                   | 11              | 25                | 15              | 29                | 3G3RX-A4110-V1 |
|                   | 15              | 32                | 18.5            | 37                | 3G3RX-A4150-V1 |
|                   | 18.5            | 38                | 22              | 43                | 3G3RX-A4185-V1 |
|                   | 22              | 48                | 30              | 57                | 3G3RX-A4220-V1 |
|                   | 30              | 58                | 37              | 70                | 3G3RX-A4300-V1 |
|                   | 37              | 75                | 45              | 85                | 3G3RX-A4370-V1 |
|                   | 45              | 91                | 55              | 105               | 3G3RX-A4450-V1 |
|                   | 55              | 112               | 75              | 135               | 3G3RX-A4550-V1 |
|                   | 75              | 149               | 90              | 160               | 3G3RX-B4750-V1 |
|                   | 90              | 176               | 110             | 195               | 3G3RX-B4900-V1 |
|                   | 110             | 217               | 132             | 230               | 3G3RX-B411K-V1 |
|                   | 132             | 260               | 160             | 290               | 3G3RX-B413K-V1 |

## LD Series – Autonomous Mobile Robots

- Simplified programming and navigation using digital mapping
- In compliance with safety standards ISO 12100, ISO 14121-2 and ISO 13849-1
- Rechargeable battery with autonomy of 12 to 15 hours and self-management for recharging
- Connectivity with factory management software (MES/WMS)
- Cleanroom and ESD options available



### Part Number Configurator

37    -   
(1) (2) (3) (4)

| No. | Item            | Specification                     |                                  | Symbol |
|-----|-----------------|-----------------------------------|----------------------------------|--------|
| 1   | Robot Type      | LD 60/LD 90                       |                                  | 0      |
|     |                 | Cart Transporter                  |                                  | 1      |
|     |                 | D 250                             |                                  | 2      |
| 2   | Speed & Payload | 0.9m/s (Excludes LD 250)          | 90Kg (LD90)                      | 6      |
|     |                 |                                   | 130Kg (Cart transporter)         |        |
|     |                 | 1.2m/s (LD 250 Only)              | 250Kg                            | 2      |
|     |                 | 1.3m/s (Excludes LD 250)          | 90Kg (LD90)                      | 4      |
|     |                 |                                   | 105Kg (Cart transporter)         |        |
| 3   | Laser Version   | SICK (Excludes LD 250)            |                                  | 1      |
|     |                 | Omron                             |                                  | 2      |
|     |                 |                                   |                                  |        |
| 4   | Configuration   | Standard<br>LD60 / LD 90 / LD 250 | Robot                            | 00000  |
|     |                 |                                   | Robot, Dock                      | 00002  |
|     |                 |                                   | Robot, Dock, Joystick, Top Plate | 10004  |
|     |                 | Cart Transporter                  | Robot                            | 00010  |
|     |                 |                                   | Robot, Dock                      | 00012  |
|     |                 |                                   | Robot, Dock, Joystick, Top Plate | 01014  |
|     |                 | ESD<br>LD 60 / LD 90              | Robot                            | 20000  |
|     |                 |                                   | Robot, Dock                      | 20002  |
|     |                 |                                   | Robot, Dock, Joystick, Top Plate | 20004  |

### Accessories

| Item          | Description                      | Model           |
|---------------|----------------------------------|-----------------|
| Battery       | Power battery                    | 20452000        |
| Fleet Manager | LD Mobile robot fleet supervisor | 20271-900-OEI-5 |

Note: The battery 20452000 must be purchased separately.

## HD-1500 – Autonomous Mobile Robot

- Natural feature navigation: Automatically plans efficient routes and prevents collisions
- Fleet management: Operates in coordination with a fleet of up to 100 mobile robots
- Easy deployment: Installs quickly, without facility modifications
- 1500 Kg large capacity payload
- Dynamic intelligent 360° safety
- Integrated automation controller



**Part Number Configurator** 37□□□-□  
(1) (2) (3) (4)

| No. | Item            | Specification    |                                                                    | Symbol |
|-----|-----------------|------------------|--------------------------------------------------------------------|--------|
| 1   | Robot Type      | HD-1500          |                                                                    | 4      |
| 2   | Speed & Payload | 1.8 m/s          | 1500 Kg                                                            | 8      |
| 3   | Laser Version   | Omron (HD)       |                                                                    | 0      |
| 4   | Configuration   | Standard HD-1500 | Robot                                                              | 00000  |
|     |                 |                  | Robot, Dock                                                        | 00002  |
|     |                 |                  | Robot, Side Lasers                                                 | 00010  |
|     |                 |                  | Robot, Single HAPS                                                 | 00100  |
|     |                 |                  | Robot, Single HAPS, Side Lasers                                    | 00110  |
|     |                 |                  | Robot, Double HAPS                                                 | 00200  |
|     |                 |                  | Robot, Double HAPS, Side Lasers                                    | 00210  |
|     |                 |                  | Robot, Dock, Joystick/Pendant, Top Plate                           | 10004  |
|     |                 |                  | Robot, Dock, Single HAPS, Joystick/Pendant, Top Plate              | 10104  |
|     |                 |                  | Robot, Dock, Single HAPS, Joystick/Pendant, Top Plate, Side Lasers | 10114  |
|     |                 |                  | Robot, Dock, Double HAPS, Joystick/Pendant, Top Plate              | 10204  |
|     |                 |                  | Robot, Dock, Single HAPS, Joystick/Pendant, Top Plate, Side Lasers | 10214  |

### Accessories

| Item          | Description                      | Model           |
|---------------|----------------------------------|-----------------|
| Battery       | Power battery                    | 68330000        |
| Fleet Manager | HD Mobile robot fleet supervisor | 20271-900-OEI-5 |

Note: Vehicle Battery (68330000) must be purchased separately from the robot and is shipped separate from the HD Vehicle.

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.



## Omron TM - Collaborative Robots

- Designed to promote a safe and harmonious workplace between humans and machines.
- Easy-to-use graphical programming environment for quick startup and operation.
- Built-in vision-based robot control enables visual servoing, inspection, and measurement operations.
- TMvision and landmark allows truly flexible, fast changeover.



### Part Number Configurator

RT6-          
(1) (2) (3) (4) (5) (6) (7) (8)

| No.    | Item                          | Specifications             | Symbol |
|--------|-------------------------------|----------------------------|--------|
| (1)    | Omron TM Collaborative Robots |                            |        |
| (2)    | Model Type                    | TM5                        | 0      |
|        |                               | TM12                       | 1      |
|        |                               | TM14                       | 2      |
| (3)    | Power Supply                  | AC                         | 0      |
|        |                               | DC                         | 1      |
| (4)    | Vision System                 | Integrated Camera          | 0      |
|        |                               | No Camera (X Model)        | 1      |
| (5)(6) | Arm Length                    | 700 (TM5)                  | 70     |
|        |                               | 900 (TM5)                  | 90     |
|        |                               | 1300 (TM12)                | 13     |
|        |                               | 1100 (TM14)                | 11     |
| (7)    | Semi                          | Standard                   | 0      |
|        |                               | Semi                       | 1      |
| (8)    | Cable Length                  | Standard Length (3m/1.5m)* | 1      |
|        |                               | Extended Length (12m)*     | 2      |

Note: 1.5m cable is only standard on DC models. 12m cable is not available on DC models.

### Accessories

| Type                                | Notes                                                              | Model       |
|-------------------------------------|--------------------------------------------------------------------|-------------|
| <a href="#">Landmark</a>            | 3D position referencing label (2 units included in the robot code) | RT6-A000008 |
| <a href="#">Mobile Station</a>      | Compatible with OMRON TM5 only                                     | RT6-A000010 |
| <a href="#">Portable Pedestal</a>   | Compatible only with OMRON TM5/Adjustable Height                   | RT6-A000009 |
| <a href="#">SSD Card with cable</a> | 128 GB of memory with SATA cable                                   | RT6-A000012 |
| <a href="#">Calibration kit</a>     | Required for TCP calibration and manual vision                     | RT6-A000002 |
| <a href="#">Pneumatic Box</a>       | . Recommended to attach to the robot pedestal                      | RT6-A000015 |

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.

## Hornet 565 - Parallel Robots

- Ethernet capability to control the robot through the familiar programming language (IEC 61131-3) of Machine Automation
- Controller NJ/NX/NY Series
- The amplifier and controller built into the robot reduces the number of cables
- Tracks up to a conveyor speed of 1.4 m/s



| Item       | Number of Axes | IP       | Maximum Payload | Working volume    |                 |                             |
|------------|----------------|----------|-----------------|-------------------|-----------------|-----------------------------|
|            |                |          |                 | X,Y axis (stroke) | Z axis (stroke) | theta axis (rotation angle) |
| Hornet 565 | 3 axes         | Standard | 8 kg            | 1130 mm           | 425 mm          | -                           |
|            |                | IP65/67  |                 |                   |                 |                             |
|            | 4 axes         | Standard | 3 kg            |                   |                 | ±360°                       |
|            |                | IP65/67  |                 |                   |                 |                             |

**Part Number Configurator** 1720-□-456□□  
 (1) (2) (3)

| No. | Item                                             | Specification               |                | Symbol |
|-----|--------------------------------------------------|-----------------------------|----------------|--------|
| 1   | Bundle Type                                      | Without Smart Controller EX | eV+            | 0      |
|     |                                                  |                             | ePLC           | 1      |
|     |                                                  |                             | Add-On         | 3      |
|     |                                                  | With Smart Controller EX    | eV+            | 2      |
|     |                                                  |                             | PLC            | 4      |
| 2   | IP Rating<br>(Topside/Underside/Platform & Arms) |                             | IP20/IP65/IP67 | 0      |
|     |                                                  |                             | IP65/IP65/IP67 | 1      |
| 3   | Number of Axes & Max Payload                     |                             | 3 Axis / 8kg   | 0      |
|     |                                                  |                             | 4 Axis / 3kg   | 4      |

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.

## Quattro Parallel Robot

- Patented four-arm design
- Robust components and design
- High-resolution, absolute encoders
- High-efficiency, low-inertia drives and lightweight arms
- 8 kHz servo update rate yields high accuracy, superior slow-speed following, and easy calibration



| Item            | Number of Axes | Type     | IP                | Maximum Payload   | Working volume    |                 |                                                                  |
|-----------------|----------------|----------|-------------------|-------------------|-------------------|-----------------|------------------------------------------------------------------|
|                 |                |          |                   |                   | X,Y axis (stroke) | Z axis (stroke) | theta axis (rotation angle)                                      |
| Quattro 650H/HS | 4              | H        | Standard          | 6 kg (P30: 15 kg) | 1300 mm           | 500 mm          | 0° (fixed) (P30)<br>±46.25° (P31)<br>±92.5° (P32)<br>±185° (P34) |
| IP65/67         |                |          |                   |                   |                   |                 |                                                                  |
| HS              |                | Standard | 3 kg (P30: 12 kg) |                   |                   |                 |                                                                  |
| Quattro 800H/HS |                | H        | Standard          | 4 kg (P30:10 kg)  | 1600 mm           |                 |                                                                  |
|                 |                |          | IP65/67           |                   |                   |                 |                                                                  |
|                 | HS             | Standard | 1 kg (P30: 7 kg)  |                   |                   |                 |                                                                  |

**Part Number Configurator** 1721-□-26□□□  
(1) (2) (3) (4)

| No. | Item                                          | Specification                  |                                               | Symbol |
|-----|-----------------------------------------------|--------------------------------|-----------------------------------------------|--------|
| 1   | Bundle Type                                   | Without Smart Controller EX    | Add-On                                        | 3      |
|     |                                               | With Smart Controller EX       | eV+                                           | 2      |
|     |                                               |                                | ePLC                                          | 4      |
| 2   | Reach                                         |                                | 650mm (1300mm total)                          | 0      |
|     |                                               |                                | 800mm (1600mm total)                          | 3      |
| 3   | Max Payload (650mm/800mm)                     | "3kg/1kg (12kg/7kg with P30)"  | IP65/IP65/IP67, Stainless Steel Platform (HS) | 1      |
|     | IP Rating (Topside/Underside/Platform & Arms) | "6kg/4kg (12kg/10kg with P30)" | IP20/IP65/IP67 (H)                            | 0      |
|     |                                               |                                | IP66/IP66/IP67 (H)                            | 2      |
| 4   | Platform Type / Rotation                      |                                | (P30) / No Rotation                           | 0      |
|     |                                               |                                | (P31) / ± 46.25°                              | 1      |
|     |                                               |                                | (P32) / ± 92.5°                               | 2      |
|     |                                               |                                | (P34) / ± 185°                                | 4      |

## eCobra - SCARA Robots

- Ethernet capability to control the robot through the familiar programming language (IEC 61131-3) of Machine Automation Controller NJ/NX/NY Series
- Reach is extended to 800 mm without compromising repeatability
- High payload for screw-driving tools



| Item                                   | Type         | IP                      | Mounting                      | Reach  | Max payload | Cycle times *1 (Payload 2.0 kg) |           |
|----------------------------------------|--------------|-------------------------|-------------------------------|--------|-------------|---------------------------------|-----------|
|                                        |              |                         |                               |        |             | Burst                           | Sustained |
| eCobra 600                             | 600 Lite     | Standard Cleanroom      | Table/floor                   | 600 mm | 5.5 Kg      | 0.66 s                          | 0.66 s    |
|                                        | 600 Standard |                         |                               |        |             | 0.55 s                          | 0.55 s    |
|                                        | 600 Pro      |                         |                               |        |             | 0.39 s                          | 0.45 s    |
| eCobra 800<br>&<br>eCobra 800 Inverted | 800 Lite     | Standard Cleanroom IP65 | Table/Floor<br>or<br>Inverted | 800 mm |             | 0.73 s                          | 0.73 s    |
|                                        | 800 Standard |                         |                               | 0.62 s |             | 0.62 s                          |           |
|                                        | 800 Pro      |                         |                               | 0.44 s |             | 0.54 s                          |           |

**Part Number Configurator** 17□1□-1□□0  
(1) (2) (3) (4)

| No. | Item              | Specification               |                           | Symbol |
|-----|-------------------|-----------------------------|---------------------------|--------|
| 1   | License Type      |                             | Lite                      | 0      |
|     |                   |                             | Standard                  | 1      |
|     |                   |                             | Pro                       | 2      |
| 2   | Bundle Type       | Without Smart Controller EX | eV+                       | 0      |
|     |                   |                             | ePLC (Excludes Lite)      | 1      |
|     |                   |                             | Add-On (Excludes Lite)    | 3      |
|     |                   | With Smart Controller EX    | eV+ (Excludes Lite)       | 2      |
|     |                   |                             | ePLC (Excludes Lite)      | 4      |
| 3   | Reach / Mounting  |                             | 600mm / Floor,Table       | 60     |
|     |                   |                             | 800mm / Floor,Table       | 80     |
|     |                   |                             | 800mm / Inverted          | 84     |
| 4   | Protection Rating |                             | IP20                      | 0      |
|     |                   |                             | IP65 (800mm Only)         | 3      |
|     |                   |                             | Cleanroom Class 10 (IP20) | 1      |

# Cobra - SCARA Robots

- ACE software deploys your applications through a user-friendly interface
- High-resolution, absolute encoders give you high accuracy, superior slow-speed following, and easy calibration
- High-efficiency, low-inertia Harmonic Drives and a lightweight arm deliver maximum acceleration



| Item      | Reach  | Maximum Payload | Protection | Conveyor tracking input | Model       |
|-----------|--------|-----------------|------------|-------------------------|-------------|
| Cobra 450 | 450 mm | 5 kg            | IP20       | 2                       | 17201-14500 |
| Cobra 500 | 500 mm |                 |            |                         | 17201-15000 |
| Cobra 650 | 650 mm |                 |            |                         | 17201-16500 |

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.

## Viper - Articulated Robots

- Rapid deployment using familiar ladder logic programming languages of existing PLC (IEC 61131-3)
- Diagnostics display enables faster trouble shooting
- Ethernet TCP/IP capability to control the robot through a PC, PLC, or robot controller



| Item      | IP        | Number of axes | Reach  | Maximum Payload | Repeatability XYZ | Conveyor tracking input | Programming environment |
|-----------|-----------|----------------|--------|-----------------|-------------------|-------------------------|-------------------------|
| Viper 650 | Standard  | 6              | 653 mm | 5 kg            | ±0.02 mm          | 2                       | ACE, PackXpert, ePLC    |
|           | Cleanroom |                |        |                 |                   |                         |                         |
|           | IP54/65   |                |        |                 |                   |                         |                         |
| Viper 850 | Standard  | 6              | 855 mm | 5 kg            | ±0.03 mm          | 2                       | ACE, PackXpert, ePLC    |
|           | Cleanroom |                |        |                 |                   |                         |                         |
|           | IP54/65   |                |        |                 |                   |                         |                         |

**Part Number Configurator** 1720□-3□0□0  
 (1) (2) (3)

| No. | Item              |                             | Specification             | Symbol |
|-----|-------------------|-----------------------------|---------------------------|--------|
| 1   | Bundle Type       | Without Smart Controller EX | eV+                       | 0      |
|     |                   |                             | ePLC                      | 1      |
|     |                   |                             | Add-On                    | 3      |
|     |                   | With Smart Controller EX    | eV+                       | 2      |
|     |                   |                             | PLC                       | 4      |
| 2   | Reach             |                             | 650mm                     | 6      |
|     |                   |                             | 850mm                     | 8      |
| 3   | Protection Rating |                             | IP40                      | 0      |
|     |                   |                             | IP54 (IP65 on J4,J5,J6)   | 1      |
|     |                   |                             | Cleanroom Class 10 (IP40) | 2      |

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.



## Anyfeeder - Automatic Feeder

- Integration with robots, vision system and conveyors
- Flexibility in setting up different products
- Vibration control allows management of part movement



| Model                             |           | SXM-100      | SXM-140      | SX-240       | SX-340       |
|-----------------------------------|-----------|--------------|--------------|--------------|--------------|
| Part Number                       |           | 09725-500    | 18819-500    | 12480-500    | 14269-500    |
| Pick area                         |           | 100 x 134 mm | 140 x 193 mm | 240 x 320 mm | 340 x 453 mm |
| Maximum weight in field of vision |           | 500g         |              | 1500g        |              |
| Connections                       | Electric  | 1            | 1            | 1            | 1            |
|                                   | Pneumatic | -            | -            | 1            | 1            |
|                                   | Serial    | 1            | 1            | 1            | 1            |

### Accessories

| Corresponding Model         | SXM-100   | SXM-140   | SX-240    | SX-340    |
|-----------------------------|-----------|-----------|-----------|-----------|
| Red Backlight Lighting type | 09725-201 | 14630-001 | 05284-206 | 14269-002 |
| White Smooth surface        | 09725-101 | 09725-301 | 05284-101 | 14269-003 |

Note: For other specifications of backlights and surface, refer to the product datasheet.

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.



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