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- Motion / Drives
 - Servomotors / Servo Drivers
 - R88M-K, R88D-KN[-]ECT
 - R88L-EC, R88D-KN[-]ECT-L**
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G5 Series Linear Motor/Servo Drives with built-in EtherCAT Communications Linear Motor Type
R88L-EC, R88D-KN[-]ECT-L



Linear Motor for Higher-speed and Higher-precision

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last update: November 06, 2012

AC Servo Drives

Linear Motor with built-in EtherCAT communications

| Specifications | | Model |
|-------------------------------------|--------------------------------|------------------|
| Power Model Supply Voltage | Applicable Servomotor Capacity | |
| Single-phase 100 VAC | 100 W | R88D-KN01L-ECT-L |
| | 200 W | R88D-KN02L-ECT-L |
| | 400 W | R88D-KN04L-ECT-L |
| Single-phase/three-phase 200 VAC | 100 W | R88D-KN01H-ECT-L |
| | 200 W | R88D-KN02H-ECT-L |
| | 400 W | R88D-KN04H-ECT-L |
| | 750 W | R88D-KN08H-ECT-L |
| | 1 kW | R88D-KN10H-ECT-L |
| | 1.5 kW | R88D-KN15H-ECT-L |
| Three-phase 400 VAC | 600 W | R88D-KN06F-ECT-L |
| | 1 kW | R88D-KN10F-ECT-L |
| | 1.5 kW | R88D-KN15F-ECT-L |
| | 2 kW | R88D-KN20F-ECT-L |
| | 3 kW | R88D-KN30F-ECT-L |

Linear Motors

< Iron-core motor type >

Motor Coil Unit

| Motor Coil Unit model | Continuous force [N] | Momentary maximum force [N] |
|-----------------------|----------------------|-----------------------------|
| R88L-EC-FW-0303-ANPC | 48 | 105 |
| R88L-EC-FW-0306-ANPC | 96 | 210 |
| R88L-EC-FW-0606-ANPC | 160 | 400 |
| R88L-EC-FW-0609-ANPC | 240 | 600 |
| R88L-EC-FW-0612-ANPC | 320 | 800 |
| R88L-EC-FW-1112-ANPC | 608 | 1600 |
| R88L-EC-FW-1115-ANPC | 760 | 2000 |

Magnet Trac

| Magnet Trac model | Magnet Trac Unit Length (mm) |
|--------------------|------------------------------|
| R88L-EC-FM-03096-A | 96 |
| R88L-EC-FM-03144-A | 144 |
| R88L-EC-FM-03384-A | 384 |
| R88L-EC-FM-06192-A | 192 |
| R88L-EC-FM-06288-A | 288 |
| R88L-EC-FM-11192-A | 192 |
| R88L-EC-FM-11288-A | 288 |

< Ironless motor type >

Motor Coil Unit

| Motor Coil Unit model | Continuous force [N] | Momentary maximum force [N] |
|-----------------------|----------------------|-----------------------------|
| R88L-EC-GW-0303-ANPS | 26.5 | 96 |
| R88L-EC-GW-0306-ANPS | 53 | 200 |
| R88L-EC-GW-0309-ANPS | 80 | 300 |
| R88L-EC-GW-0503-ANPS | 58 | 240 |
| R88L-EC-GW-0506-ANPS | 117 | 480 |
| R88L-EC-GW-0509-ANPS | 175 | 720 |
| R88L-EC-GW-0703-ANPS | 117 | 552 |
| R88L-EC-GW-0706-ANPS | 232 | 1110 |
| R88L-EC-GW-0709-ANPS | 348 | 1730 |

Magnet Trac

| Magnet Trac model | Magnet Trac Unit Length (mm) |
|--------------------|------------------------------|
| R88L-EC-GM-03090-A | 90 |

| | |
|--------------------|-----|
| R88L-EC-GM-03120-A | 120 |
| R88L-EC-GM-03390-A | 390 |
| R88L-EC-GM-05126-A | 126 |
| R88L-EC-GM-05168-A | 168 |
| R88L-EC-GM-05210-A | 210 |
| R88L-EC-GM-05546-A | 546 |
| R88L-EC-GM-07114-A | 114 |
| R88L-EC-GM-07171-A | 171 |
| R88L-EC-GM-07456-A | 456 |

Combination table

Motor Coil Unit and Magnet Trac Combinations

Iron-core motor type

| Motor Coil Unit model | Magnet Trac model |
|--|--|
| R88L-EC-FW-0303-ANPC R88L-EC-FW-0306-ANPC | R88L-EC-FM-03096-A R88L-EC-FM-03144-A R88L-EC-FM-03384-A |
| R88L-EC-FW-0606-ANPC R88L-EC-FW-0609-ANPC R88L-EC-FW-0612-ANPC | R88L-EC-FM-06192-A R88L-EC-FM-06288-A |
| R88L-EC-FW-1112-ANPC R88L-EC-FW-1115-ANPC | R88L-EC-FM-11192-A R88L-EC-FM-11288-A |

Ironless motor type

| Motor Coil Unit model | Magnet Trac model |
|--|--|
| R88L-EC-GW-0303-ANPS R88L-EC-GW-0306-ANPS R88L-EC-GW-0309-ANPS | R88L-EC-GM-03090-A R88L-EC-GM-03120-A R88L-EC-GM-03390-A |
| R88L-EC-GW-0503-ANPS R88L-EC-GW-0506-ANPS R88L-EC-GW-0509-ANPS | R88L-EC-GM-05126-A R88L-EC-GM-05168-A R88L-EC-GM-05210-A R88L-EC-GM-05546-A |
| R88L-EC-GW-0703-ANPS R88L-EC-GW-0706-ANPS R88L-EC-GW-0709-ANPS | R88L-EC-GM-07114-A R88L-EC-GM-07171-A R88L-EC-GM-07456-A |

Accessories and Cables

Cable/Connector

Analog Monitor Cable

| Name | Length | Model |
|----------------------|--------|--------------|
| Analog Monitor Cable | 1 m | R88A-CMK001S |

Servo Drive Connectors (common)

| Name | Connects to | Model |
|--------------------------|-------------|-------------|
| External Scale Connector | CN4 | R88A-CNK41L |
| Safety Bypass Connector | CN8 | R88A-CNK81S |

Servo Drive Connectors

| Name | Connects to | Model |
|-----------------------|-------------|-------------|
| Control I/O Connector | CN1 | R88A-CNW01C |

External Encoder Cable

| Name | Lengths | Model |
|-----------------------------|---------|----------------|
| Serial Communications Cable | 10 m | R88A-CRKE010SR |

Control Cables

Control Cables (for Connector Terminal Block/CN1)

| Name | Specifications | Model |
|--|---|-----------------------------------|
| Connector Terminal Block Cables | MECHATROLINK-II Communications | Length 1.0 m XW2Z-100J-B34 |
| | EtherCAT Communications | Length 2.0 m XW2Z-200J-B34 |
| Connector Terminal Block Conversion Unit | Conversion Unit for General-purpose Controllers (M3 screws) | Through type XW2B-20G4 |
| | Conversion Unit for General-purpose Controllers (M3.5 screws) | Through type XW2B-20G5 |
| | Conversion Unit for General-purpose Controllers (M3 screws) | Slim type XW2D-20G6 |

Communication Cables



Recommended EtherCAT Communications Cables

Use Straight STP (shielded twisted-pair) cable of category 5 or higher with double shielding (braiding and aluminum foil tape) for EtherCAT.

Cable with Connectors

Wire Gauge and Number of Pairs: AWG22, 2-pair Cable

| Item | Appearance | Recommended manufacturer | Cable length (m) | Model |
|-----------------------|---|--------------------------|------------------|------------------------|
| Cable with Connectors |  | OMRON | 0.3 | XS5W-T421-AMD-K |

| | | | | |
|---|--|-------|-----|-----------------|
| on both Ends (RJ45/RJ45) |  | | 0.5 | XS5W-T421-BMD-K |
| | | | 1 | XS5W-T421-CMD-K |
| | | | 2 | XS5W-T421-DMD-K |
| | | | 5 | XS5W-T421-GMD-K |
| | | | 10 | XS5W-T421-JMD-K |
| Cable with Connectors on Both Ends (M12/RJ45) |  | OMRON | 0.3 | XS5W-T421-AMC-K |
| | | | 0.5 | XS5W-T421-BMC-K |
| | | | 1 | XS5W-T421-CMC-K |
| | | | 2 | XS5W-T421-DMC-K |
| | | | 5 | XS5W-T421-GMC-K |
| | | | 10 | XS5W-T421-JMC-K |

Note: The cable length 0.3, 0.5, 1, 2, 3, 5, 10 and 15m are available.


Cables/Connectors

Wire Gauge and Number of Pairs: AWG24, 4-pair Cable

| Item | Appearance | Recommended manufacturer | Model |
|-----------------|------------|------------------------------|-------------------------------|
| Cables | - | Hitachi Cable, Ltd. | NETSTAR-C5E SAB * 0.5 x 4P |
| | - | Kuramo Electric Co. | KETH-SB * |
| | - | SWCC Showa Cable Systems Co. | FAE-5004 * |
| RJ45 Connectors | - | Panduit Corporation | MPS588 * |

* We recommend you to use above cable and connector together.

Wire Gauge and Number of Pairs: AWG22, 2-pair Cable

| Item | Appearance | Recommended manufacturer | Model |
|-------------------------|--|--------------------------|----------------|
| Cables | - | Kuramo Electric Co. | KETH-PSB-OMR * |
| RJ45 Assembly Connector |  | OMRON | XS6G-T421-1 * |

* We recommend you to use above cable and connector together.

Note: Connect both ends of cable shielded wires to the connector hoods.

Peripheral Devices (External Regeneration Resistors, Reactors, Mounting Brackets)

External Regeneration Resistors

| Specifications | Model |
|----------------|----------------|
| 80 W 50 Ω | R88A-RR08050S |
| 80 W 100 Ω | R88A-RR080100S |
| 220 W 47 Ω | R88A-RR22047S1 |
| 500 W 20 Ω | R88A-RR50020S |

Reactors

| Specifications | Model |
|---|--------------|
| Linear Motor with built-in EtherCAT communications | |
| R88D-KN01H-ECT-L (For single-phase input) | 3G3AX-DL2002 |
| R88D-KN01L-ECT-L/-KN02H-ECT-L (For single-phase input) | 3G3AX-DL2004 |
| R88D-KN02L-ECT-L/-KN04H-ECT-L (For single-phase input) | 3G3AX-DL2007 |
| R88D-KN04L-ECT-L/-KN08H-ECT-L/-KN10H-ECT-L (For single-phase input) | 3G3AX-DL2015 |
| R88D-KN15H-ECT-L (For single-phase input) | 3G3AX-DL2022 |
| R88D-KN01H-ECT-L/-KN02H-ECT-L/-KN04H-ECT-L/-KN08H-ECT-L/-KN10H-ECT-L/-KN15H-ECT-L (For three-phase input) | 3G3AX-AL2025 |
| R88D-KN06F-ECT-L/-KN10F-ECT-L/-KN15F-ECT-L | 3G3AX-AL4025 |
| R88D-KN20F-ECT-L/-KN30F-ECT-L | 3G3AX-AL4055 |

Mounting Brackets (L Brackets for Rack Mounting)

| Specifications | Model |
|--|------------|
| Linear Motor with built-in EtherCAT communications | |
| R88D-KN01L-ECT-L/-KN01H-ECT-L/-KN02H-ECT-L | R88A-TK01K |
| R88D-KN02L-ECT-L/-KN04H-ECT-L | R88A-TK02K |
| R88D-KN04L-ECT-L/-KN08H-ECT-L | R88A-TK03K |
| R88D-KN10H-ECT-L/-KN15H-ECT-L/-KN06F-ECT-L/-KN10F-ECT-L/-KN15F-ECT-L | R88A-TK04K |

Note: Mounting brackets are provided with Servo Drives of 2 to 15 kW.

Software

How to Select Required Support Software for Your Controller

The required Support Software depends on the Controller to connect. Please check the following table when purchasing the Support Software.

| Item | Omron PLC System | Omron Machine Automation Controller System |
|-------------------------------|---|--|
| Controller | CS, CJ, CP, and other series | NJ-series |
| AC Servomotor/ Drivers | G5-series EtherCAT Communications EtherCAT Communications Linear Motor General-purpose input type(PulseTrain or Analog inputs) MECHATROLINK-II Communications | G5-series EtherCAT Communications (Unit version 2.1 or later recommended) EtherCAT Communications Linear Motor |
| Software | FAIntegrated Tool Package CX-One | Automation Software Sysmac Studio |

FAIntegrated Tool Package CX-One

| Product name | Specifications | | | Model | Standards |
|--------------|--|--------------------|--------|----------------|-----------|
| | | Number of licenses | Media | | |
| FAIntegrated | The CX-One is a comprehensive software package that integrates Support Software for OMRON PLCs and components. | 1 license *1 | DVD *2 | CXONE-AL01D-V4 | - |

| | | | | | |
|---|--|--|--|--|--|
| Tool Package CX-One Ver.4.[] | CX-One runs on following OS. OS: Windows XP (Service Pack 3 or higher), Vista or 7 Note: Except for Windows XP 64-bit version. CX-One Version.4.[] includes CX-Drive Ver.2.[]. | | | | |
|---|--|--|--|--|--|

*1. Multi licenses are available for the CX-One (3, 10, 30, or 50 licenses).

*2. The CX-One is also available on CD (CXONE-AL[]C-V4).

Automation Software Sysmac Studio

Please purchase a DVD and required number of licenses the first time you purchase the Sysmac Studio. DVDs and licenses are available individually. Each model of licenses does not include any DVD.

| Product name | Specifications | | | Model | Standards |
|--|---|--------------------|-------|----------------------|-----------|
| | | Number of licenses | Media | | |
| Sysmac Studio Standard Edition Ver.1.[] | The Sysmac Studio provides an integrated development environment to set up, program, debug, and maintain NJ-series Controllers and other Machine Automation Controllers, as well as EtherCAT slaves. Sysmac Studio runs on the following OS. Windows XP (Service Pack 3 or higher, 32-bit version)/Vista (32-bit version)/7 (32-bit/64-bit version) The Sysmac Studio Standard Edition DVD includes Support Software to set up EtherNet/IP Units, DeviceNet slaves, Serial Communications Units, and Support Software for creating screens on HMs (CX-Designer). | - (Media only) | DVD | SYSMAC-SE200D | - |
| | | 1 license * | - | SYSMAC-SE201L | |

* Multi licenses are available for the Sysmac Studio (3, 10, 30, or 50 licenses).

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