EPSON EZ Modules

Modular axes for a wide variety of applications!

The Power of Choice
EPSON EZ Modules: Industry Leading Ease of Use

**EPSON EZ Modules General Features**

- Rigid arm construction
- High torque AC servo motors
- Absolute encoders
- Precision ground ball screws
- Dustproof seals for dirty environments
- High precision linear guides
- Maintenance free linear guide and ball screw
- High speed and high payload capable
- Easy to assemble
- High performance PC based controls
- Superior servo control for smooth quick motion
- Easy to use Microsoft Windows™ based software
- Integrated Vision, Conveyor Tracking, .NET Controls, Audit Log/Security and more options
- All cables, cable guides and brackets included

**High Performance and Reliable – Definitely an EPSON!**

EPSON EZ Modules are a series of linear modules that are easy to assemble and even easier to use. They are ideal for simple pick and place applications and can also be used for many different jobs like sealant or glue laying applications, parts handling and even precision assembly tasks. With hundreds of EZ Modules available in 1, 2, 3 and 4 axis configurations, chances are that EPSON has the right model and configuration you need for your next application.

**Powerful Controls and Development Environment**

EPSON EZ Modules are available with our RC620+ PC Based controller. It is the controller of choice for those applications that require a high performance open architecture solution and advanced motion and I/O control. The EPSON RC+ 6.0 development environment features powerful tools and provides the ultimate experience in industry leading ease of use. With the ability to control up to 20 axes of motion from one single controller, the RC620+ controller provides our customers with a high performance solution at a value price and more Power of Choice than ever before.

**Additional Axis with Coordinated Motion**

EPSON EZ Modules, SCARA and 6-Axis robots all run on the EPSON RC620+ controllers and can be easily integrated together. With the ability to control up to 8 axes of coordinated motion, the RC620+ can easily control a SCARA or 6-Axis robot mounted on top of a single EZ Module to expand the work envelope.

**1, 2, 3, and 4 Axis Configurations Available**
1 Axis Models

With speeds of 1500 mm/sec, payloads up to 80 Kg, and repeatabilities of +/-10 microns, our single axis EPSON EZ Modules are hard to beat. For maximum flexibility, single axis EPSON EZ Modules can be mounted in table top, side mount, or even ceiling mount configurations. One common practice is to use the RH (heavy) EZ Modules as a linear module for our EPSON SCARA and 6 Axis robots. Whatever the use, the single axis EPSON EZ Modules are sure to fit your application needs.

Single Axis Lengths

<table>
<thead>
<tr>
<th>Medium</th>
<th>RM (350, 550, 750 mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heavy</td>
<td>RH (400, 600, 800, 1000, 2000 mm)</td>
</tr>
</tbody>
</table>

### 2 Axis Models

2 Axis EPSON EZ Modules are available in 2 core configurations. RG type (which is the conventional XY cartesian type module), and YZ type (which has the Z Axis attached to the carriage of the Y Axis).

RG (Heavy) and YZ (Medium) Modules are high in both speed and payload performance and are made for fast pick and place applications. They incorporate high torque AC servo motors for reduced maintenance and our high performance servo system available only with the RC620+ PC based controller. This combination of rigid mechanical arms along with our high performance servo system yields the best solution available for linear modules today.

**RG (A/B/C/D)** type:
- RG-HM (Heavy/Medium models where the first axis is an RH module and the second axis is an RM module)
- Available Axis Lengths: Axis 1: RH (400, 600, 800, 1000 mm)  
  Axis 2: RM (350, 550, 750 mm)

**YZ (A/B)** type:
- YZ-MSz (Medium/Small models where the first axis is an RM module and the second axis is an RSz module)
- Available Axis Lengths: Axis 1: RM (350, 550, 750 mm)  
  Axis 2: RSz (200, 300, 400 mm)

### 2 Axis Models Specifications

<table>
<thead>
<tr>
<th></th>
<th>RG-HM (Heavy/Medium)</th>
<th>YZ-MSz (Medium/Small)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Payload (Max/Rated)</td>
<td>25/15 Kg</td>
<td>15/10 Kg</td>
</tr>
<tr>
<td>Axis 1 Max Speed</td>
<td>1500 mm/sec**</td>
<td>1500 mm/sec</td>
</tr>
<tr>
<td>Axis 2 Max Speed</td>
<td>1500 mm/sec</td>
<td>750 mm/sec</td>
</tr>
<tr>
<td>Repeatability</td>
<td>+/- 0.01 mm (0.0004 in)**</td>
<td></td>
</tr>
<tr>
<td>Axis 1 Motor Size</td>
<td>400 Watt</td>
<td></td>
</tr>
<tr>
<td>Axis 2 Motor Size</td>
<td>400 Watt</td>
<td>150 Watt</td>
</tr>
<tr>
<td>Downward Force</td>
<td>N/A</td>
<td>200N</td>
</tr>
</tbody>
</table>

* 1000 mm RH Module max speed is 1200 mm/sec
* 2000 mm RH Module max speed is 560 mm/sec
* Single axis repeatability
* See Pages 6 & 7 Mirror and Flip Configurations
3 Axis Models

3 Axis EPSON EZ Modules (RP Type) are both fast and precise. They are the ideal choice for applications ranging from simple pick and place to dispensing, and are used in a wide variety of industries including medical, automotive, and semiconductor to name a few. With payloads up to 15 Kg and speeds of up to 1500 mm/sec along with +/-10 micron single axis repeatabilities, EPSON EZ Modules have the performance specs to meet your application needs.

RP-HMSz (Heavy/Medium)

4 Axis Models

4 Axis EPSON EZ Modules (RU Type) are available in a Heavy/Medium configuration. With a max speed of 1500 mm/sec, the 4 Axis EPSON EZ Modules are some of the fastest modules available in the market. The 4th axis rotational speed is 1428 deg/sec which provides more than enough orientation speed for even the most demanding of module based applications. These Heavy/Medium 4 axis modules also have a maximum payload of 10Kg which means they are an excellent choice for medium payload jobs.

The available axis lengths are as follows:

Axis 1: RH (400, 600, 800, 1000 mm)
Axis 2: RM (350, 550, 750 mm)
Axis 3: RSz (200, 300 mm)
Axis 4: RU +/- 360 degrees

3 & 4 Axis Mirror and Flip Configurations

3 & 4 axis EPSON EZ Modules can be purchased with 1 of 4 configuration types as shown in the figure. The Y axis (2nd axis) can be "flipped" on the left or right side of the X axis (1st axis) and the Z axis (3rd axis) can be "mirrored" on the Y axis (2nd axis). This flexibility allows the right EPSON EZ Module to be selected for your specific workcell layout requirements.
# EPSON EZ Modules Specifications

<table>
<thead>
<tr>
<th>EZ Modules</th>
<th>One Axis</th>
<th>Two Axis</th>
<th>Three Axis</th>
<th>Four Axis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model Types</strong></td>
<td>RH (Heavy)</td>
<td>RM (Medium)</td>
<td>RG-HM (Heavy/Med)</td>
<td>YZ-MSz (Med/Small)</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>1, 2, 3, and 4 Axis Linear Modules</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Max Speed</strong></td>
<td>1500 mm/sec&lt;sup&gt;2&lt;/sup&gt;</td>
<td>1500 mm/sec&lt;sup&gt;2&lt;/sup&gt;</td>
<td>1500 mm/sec&lt;sup&gt;2&lt;/sup&gt;</td>
<td>1500 mm/sec&lt;sup&gt;2&lt;/sup&gt;</td>
</tr>
<tr>
<td><strong>Payload (Max/Rated)</strong></td>
<td>80/40 Kg</td>
<td>40/20 Kg</td>
<td>25/15 Kg</td>
<td>15/10 Kg</td>
</tr>
<tr>
<td><strong>Motor Ratings</strong></td>
<td>400 watt</td>
<td>400 watt</td>
<td>400 watt</td>
<td>400 watt</td>
</tr>
<tr>
<td><strong>Cycle Time</strong></td>
<td>0.594 secs&lt;sup&gt;3&lt;/sup&gt;</td>
<td>0.594 secs&lt;sup&gt;3&lt;/sup&gt;</td>
<td>0.594 secs&lt;sup&gt;3&lt;/sup&gt;</td>
<td>0.594 secs&lt;sup&gt;3&lt;/sup&gt;</td>
</tr>
<tr>
<td><strong>Downward Force Z Axis</strong></td>
<td>N/A</td>
<td>200N</td>
<td>200N</td>
<td></td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>21-34 Kg</td>
<td>12-17 Kg</td>
<td>21-34 Kg</td>
<td>12-17 Kg</td>
</tr>
<tr>
<td><strong>Environmental Conditions</strong></td>
<td>5-40 deg C</td>
<td>10-80% (no condensation)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Available Controller</strong></td>
<td>PC Based Controller RC620+</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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*1 1000 mm RH Module max speed is 1200 mm/sec
*2 2000 mm RH Module max speed is 560 mm/sec
*3 Single Axis Repeatability
*4 Cycle time is for 3 Axis RH800, RM550 (or RM350), RSz (200, 300, or 400 mm) sized module with a 5 Kg payload
*5 Cycle time is for 4 Axis RH800, RM550 (or RM350), RSz (200, 300 mm) size module with 0Kg payload

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