Pick and place using a SCARA robot while using an articulated robot to change pallets

A diverse variety of general-purpose robots provide the best solution for a wide range of tasks
High-speed operation reduces cycle time

Thanks to high-speed, low-inertia AC servo motors, an arm designed for light weight, and the latest control technology, these robots achieve an operating speed that is best in their class. From supply, assembly, inspection, and packing to palletization, all applications can enjoy shorter cycle time and improved productivity.

Workpieces with a high wrist load are also supported

With a wrist section that has the highest allowable moment of inertia in its class, these robots can support jobs involving a high wrist load, or simultaneous handling of multiple workpieces.

Robot simulator dramatically reduces startup time

We provide software that lets you use 3D CAD data to construct a production facility in virtual space in a personal computer, and easily perform engineering tasks such as creating programs and checking for robot interference. Teaching can be performed even before the actual production line is completed, dramatically reducing line startup time.

Free arm movement further boosts productivity.

“Elbow movement” unique to 7-axis models allows optimal posture to be maintained

The 7-axis U-type robots allow “elbow movement,” changing only the elbow angle without affecting the position or posture of the tool. This permits operation to avoid nearby obstructions.

Access the workpiece from the opposite side or from below

Rotation of the seventh axis enables flexible movement with the same freedom of motion as a human arm, allowing the workpiece to be accessed from the opposite side or from below. This allows the robot to enter narrow locations that a person could not fit in, or to approach the workpiece in a way that avoids obstructions, giving you more freedom to design the layout for shorter cycle time and reduced space.
### YA SERIES MANIPULATOR SPECIFICATIONS

#### Mechanical Section

<table>
<thead>
<tr>
<th>Applications</th>
<th>E-axis</th>
<th>T-axis</th>
</tr>
</thead>
<tbody>
<tr>
<td>YA-RJ</td>
<td>Handling (general)</td>
<td>Assembly / Placement</td>
</tr>
<tr>
<td>YA-R3F</td>
<td></td>
<td></td>
</tr>
<tr>
<td>YA-R5LF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>YA-R6F</td>
<td></td>
<td></td>
</tr>
<tr>
<td>YA-RJSP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>YA-RJ5F</td>
<td></td>
<td></td>
</tr>
<tr>
<td>YA-U10F</td>
<td></td>
<td></td>
</tr>
<tr>
<td>YA-U20F</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Number of axes | 6 | 6 |
| Payload | 1 kg (max. 2 kg) | 3 kg |
| Vertical reach | 909 mm | 804 mm |
| Horizontal reach | 545 mm | 532 mm |
| Repeatability | ±0.03 mm | ±0.02 mm |

#### Range of Motion

| E-axis (focusing) | -160° to +160° | -160° to +160° |
| B-axis (wrist twist) | 360° to 360° | 360° to 360° |
| B-axis (wrist pitch) | 360° to 360° | 360° to 360° |

#### Maximum Speed

| E-axis (focusing) | 160°/s | 200°/s |
| B-axis (wrist twist) | 30°/s | 30°/s |
| B-axis (wrist pitch) | 30°/s | 30°/s |
| T-axis (wrist roll) | 30°/s | 30°/s |

#### Allowable Moment

| B-axis (wrist twist) | 0.005 kg.m | 0.06 kg.m |
| B-axis (wrist pitch) | 0.005 kg.m | 0.06 kg.m |
| T-axis (wrist roll) | 0.005 kg.m | 0.06 kg.m |

#### Note 1
- Power cable length: 12.5±0.02 m

#### Note 2
- When a load is more than 1 kg, the motion range will be smaller. Use the robot within the recommended motion range. For details, refer to the dimensional diagram on page 10.

#### Note 3
- Variations in accordance with applications and motion patterns.
- Note: All units are used for specifications.

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### Ordering method

**YA-RJ-4L - YAC100-EJE-N-CC**

- **Mechanical Section**
- **Controller Section**
**YA-R3F**

**6-axis**

**Maximum payload**: 3 kg  
**Longest Reach**: 706 mm

### In-Ordering method

**YA-R3F**  
**4L**  
**YAC100**

- **E**: CE marking  
- **JC**: Japanese/Chinese  
- **N1, P1**: 56/56 points  
- **CC**: CC-Link

### Specifications

#### Controlled Axis

<table>
<thead>
<tr>
<th>Controlled Axis</th>
<th>Basic (serial port)</th>
<th>Basic (serial port/pipetype)</th>
<th>Payload</th>
</tr>
</thead>
<tbody>
<tr>
<td>Axis B</td>
<td>2.39 N.m</td>
<td>5.39 N.m</td>
<td>1.0 kVA</td>
</tr>
<tr>
<td>Axis T</td>
<td>0.11 kg.m</td>
<td>2.94 N.m</td>
<td>0.5 kVA</td>
</tr>
<tr>
<td>Axis L</td>
<td>0%</td>
<td>5.39 N.m</td>
<td>1.0 kVA</td>
</tr>
<tr>
<td>Axis U</td>
<td>-105° to +260°</td>
<td>-105° to +260°</td>
<td>-105° to +260°</td>
</tr>
<tr>
<td>Axis R</td>
<td>-190° to +190°</td>
<td>-190° to +190°</td>
<td>-190° to +190°</td>
</tr>
<tr>
<td>Axis S</td>
<td>-85° to +90°</td>
<td>-85° to +90°</td>
<td>-85° to +90°</td>
</tr>
<tr>
<td>Axis P</td>
<td>4.9 m/s2</td>
<td>4.9 m/s2</td>
<td>4.9 m/s2</td>
</tr>
<tr>
<td>Axis P</td>
<td>7.85 rad/s</td>
<td>7.85 rad/s</td>
<td>7.85 rad/s</td>
</tr>
</tbody>
</table>

#### Operating environment

- **Ambient temperature**: 20 to 80%RH (non-condensing)
- **Humidity**: 10 to 90%RH (non-condensing)

#### Control parameters

- **Repeatability**: ±0.02 mm
- **Maximum Speed**: 6.56 rad/s, 376°/s

#### Notes

- For wall-mounted installation, the A and B axes operating range is ±25°.
- The device's cable connection is an optional item. Please purchase it separately.
- The cable that fits with the device's cable connector is an optional item. Please purchase it separately.

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**YA-R5F**

**6-axis**

**Maximum payload**: 5 kg  
**Longest Reach**: 756 mm

### In-Ordering method

**YA-R5F**  
**4L**  
**YAC100**

- **E**: CE marking  
- **JC**: Japanese/Chinese  
- **N2, P2**: 84/84 points  
- **DM**: DeviceNet master

### Specifications

#### Controlled Axis

<table>
<thead>
<tr>
<th>Controlled Axis</th>
<th>Basic (serial port)</th>
<th>Basic (serial port/pipetype)</th>
<th>Payload</th>
</tr>
</thead>
<tbody>
<tr>
<td>Axis B</td>
<td>2.39 N.m</td>
<td>5.39 N.m</td>
<td>1.0 kVA</td>
</tr>
<tr>
<td>Axis T</td>
<td>0.11 kg.m</td>
<td>2.94 N.m</td>
<td>0.5 kVA</td>
</tr>
<tr>
<td>Axis L</td>
<td>0%</td>
<td>5.39 N.m</td>
<td>1.0 kVA</td>
</tr>
<tr>
<td>Axis U</td>
<td>-105° to +260°</td>
<td>-105° to +260°</td>
<td>-105° to +260°</td>
</tr>
<tr>
<td>Axis R</td>
<td>-190° to +190°</td>
<td>-190° to +190°</td>
<td>-190° to +190°</td>
</tr>
<tr>
<td>Axis S</td>
<td>-85° to +90°</td>
<td>-85° to +90°</td>
<td>-85° to +90°</td>
</tr>
<tr>
<td>Axis P</td>
<td>4.9 m/s2</td>
<td>4.9 m/s2</td>
<td>4.9 m/s2</td>
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<tr>
<td>Axis P</td>
<td>7.85 rad/s</td>
<td>7.85 rad/s</td>
<td>7.85 rad/s</td>
</tr>
</tbody>
</table>

#### Operating environment

- **Ambient temperature**: 20 to 80%RH (non-condensing)
- **Humidity**: 10 to 90%RH (non-condensing)

#### Control parameters

- **Repeatability**: ±0.02 mm
- **Maximum Speed**: 6.56 rad/s, 376°/s

#### Notes

- For wall-mounted installation, the A and B axes operating range is ±25°.
- The device's cable connection is an optional item. Please purchase it separately.
Note. Thanks to the higher control rate of the YAC100 controller and vibration-damping control of the arm, we have reduced the residual vibration when the arm stops moving, while shortening the cycle time and achieving the fastest speed in this class. Note. Longest reach in this class (1422 mm) and increased moment capacity of the wrist. Note. Floor-mounted,well-mounted, and ceiling-mounted types are available. Please contact us separately regarding well-mounted or ceiling-mounted installations. Note. This unit can also be used in combination with a travel axis or other external axis. Please contact us.

### Specifications

<table>
<thead>
<tr>
<th>Controlled Axis</th>
<th>Payload</th>
<th>Maximum Speed</th>
<th>Allowable Moment</th>
<th>Repeatability</th>
</tr>
</thead>
<tbody>
<tr>
<td>B-axis (wrist roll)</td>
<td>5 kg</td>
<td>3.84 rad/s, 220°/s</td>
<td>±0.03 mm</td>
<td>±170° to +170°</td>
</tr>
<tr>
<td>R-axis (wrist pitch/yaw)</td>
<td>5.5 kg</td>
<td>3.49 rad/s, 200°/s</td>
<td>±0.08 mm</td>
<td>±65° to +150°</td>
</tr>
<tr>
<td>T-axis (wrist twist)</td>
<td>9 kg</td>
<td>4.34 rad/s, 240°/s</td>
<td>±0.1 mm</td>
<td>±360° to +360°</td>
</tr>
<tr>
<td>B-axis (shoulder)</td>
<td>19 kg</td>
<td>12.57 rad/s, 720°/s</td>
<td>±0.05 mm</td>
<td>±288°</td>
</tr>
<tr>
<td>U-axis (upper arm)</td>
<td>19 kg</td>
<td>7.16 rad/s, 400°/s</td>
<td>±0.05 mm</td>
<td>±138°</td>
</tr>
<tr>
<td>L-axis (lower arm)</td>
<td>19 kg</td>
<td>3.84 rad/s, 220°/s</td>
<td>±0.1 mm</td>
<td>±90° to +155°</td>
</tr>
<tr>
<td>S-axis (turning)</td>
<td>19 kg</td>
<td>4.9 m/s</td>
<td>±0.05 mm</td>
<td>-135° to +135°</td>
</tr>
</tbody>
</table>

### Ordering method

<table>
<thead>
<tr>
<th>Model</th>
<th>Power cable length</th>
<th>Controller</th>
<th>Safety standard</th>
<th>Language setting</th>
<th>Option I/O</th>
<th>Network option</th>
</tr>
</thead>
<tbody>
<tr>
<td>YA-R5LF</td>
<td>4L</td>
<td>YAC100</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>YA-R6F</td>
<td>4L</td>
<td>YAC100</td>
<td></td>
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</tbody>
</table>
### YA-U5F 7-axis

**Ordering method**

<table>
<thead>
<tr>
<th>Model</th>
<th>4L</th>
<th>YAC100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum payload</td>
<td>5 kg</td>
<td></td>
</tr>
</tbody>
</table>

**Specifications**

**Controlled Axis**

- E-axis (wrist rot)
- B-axis (shoulder roll)
- L-axis (lower arm)
- R-axis (wrist roll)
- U-axis (upper arm)
- S-axis (turning)
- T-axis (wrist twist)

**Payload**

- 5 kg

**Repeatability**

- ±0.06 mm

**Allowable Speed (m/s)**

- E-axis: 4.9 m/s
- B-axis: 3.49 rad/s
- L-axis: 6.11 rad/s
- R-axis: ±0.035
- S-axis: 0.45 kg.m
- T-axis: 7.35 N.m

**Allowable Torque (N.m)**

- E-axis: 2.97 N.m
- B-axis: 3.49 rad/s
- L-axis: 0.45 kg.m
- S-axis: 7.35 N.m
- U-axis: 0.45 kg.m
- T-axis: 7.35 N.m

**Ambient Conditions:**

- Temperature: 0˚C to +40˚C
- Humidity: 20% to 80% (non-condensing)
- Vibration: 0.5 g rms (in base)
- Others: Free from corrosive gases or liquids, or explosive gases.
- Free from exposure to water, oil, or dust.
- Free from excessive electrical noises (plasma).

**Maximum Speed**

- E-axis: 4.9 m/s
- B-axis: 3.49 rad/s
- L-axis: 6.11 rad/s
- R-axis: ±0.035
- S-axis: 0.45 kg.m
- T-axis: 7.35 N.m

**Ordering method**

- P-point maximum envelope
- 4-point maximum envelope
- 2-point maximum envelope

**Note:**

- The range is equipped with a cable through hole. When mounting equipment such as an arm base, ensure that no foreign lapses, oil, or dust go into the hole.
- Note 2: A thread is mounted for 7-axis greases replenished. When attaching an attachment to 80 dia. ±0.005 part of the 7-axis, enough space for the grease tank (MT2611) is required to the shape of the attachment.
- Note 3: The cable that fits with the device's cable connector is an optional item. Please purchase it separately.
- For safety standard: Refer to the contact for details.

### YA-U10F 7-axis

**Ordering method**

<table>
<thead>
<tr>
<th>Model</th>
<th>4L</th>
<th>YAC100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum payload</td>
<td>10 kg</td>
<td></td>
</tr>
</tbody>
</table>

**Specifications**

**Controlled Axis**

- E-axis (wrist rot)
- B-axis (shoulder roll)
- L-axis (lower arm)
- R-axis (wrist roll)
- U-axis (upper arm)
- S-axis (turning)
- T-axis (wrist twist)

**Payload**

- 10 kg

**Repeatability**

- ±0.06 mm

**Allowable Speed (m/s)**

- E-axis: 4.9 m/s
- B-axis: 3.49 rad/s
- L-axis: 6.11 rad/s
- R-axis: ±0.035
- S-axis: 0.45 kg.m
- T-axis: 7.35 N.m

**Allowable Torque (N.m)**

- E-axis: 2.97 N.m
- B-axis: 3.49 rad/s
- L-axis: 0.45 kg.m
- S-axis: 7.35 N.m
- U-axis: 0.45 kg.m
- T-axis: 7.35 N.m

**Ambient Conditions:**

- Temperature: 0˚C to +40˚C
- Humidity: 20% to 80% (non-condensing)
- Vibration: 0.5 g rms (in base)
- Others: Free from corrosive gases or liquids, or explosive gases.
- Free from exposure to water, oil, or dust.
- Free from excessive electrical noises (plasma).

**Maximum Speed**

- E-axis: 4.9 m/s
- B-axis: 3.49 rad/s
- L-axis: 6.11 rad/s
- R-axis: ±0.035
- S-axis: 0.45 kg.m
- T-axis: 7.35 N.m

**Ordering method**

- P-point maximum envelope
- 4-point maximum envelope
- 2-point maximum envelope

**Note:**

- The range is equipped with a cable through hole. When mounting equipment such as an arm base, ensure that no foreign lapses, oil, or dust go into the hole.
- Note 2: A thread is mounted for 7-axis greases replenished. When attaching an attachment to 80 dia. ±0.005 part of the 7-axis, enough space for the grease tank (MT2611) is required to the shape of the attachment.
# Specifications

### Controlled Axis
- **Ordering method**
  - YA-U20F 4L
  - YA100

### Maximum Payload
- **20 kg**

### Repeatability
- ±0.1 mm

### Range of Motion
- **External axis spec**
  - (Internal user I/O wiring harness and air lines specification, two air hoses and sixteen-core cables)
  - S-ax is (turning)
  - E-axis (elbow twist)
  - B-ax is (wrist pitch/yaw)
  - R-axis (wrist roll)
  - T-axis (wrist twist)
  - L-axis (lower arm)

### Maximum Speed
- **S1-1**
  - CR: 1.0 m/s, 2.6 rad/s
  - WR: 0.9 m/s, 2.4 rad/s
  - LCR: 0 m/s, 2.9 rad/s
  - LWR: 0 m/s, 2.9 rad/s

- **S1-2**
  - CR: 0.9 m/s, 2.6 rad/s
  - WR: 0.8 m/s, 2.4 rad/s
  - LCR: 0 m/s, 2.9 rad/s
  - LWR: 0 m/s, 2.9 rad/s

### Power Requirements
- **1.5 kW**

### Ambient Conditions
- **Temperature**
  - 5 to 35°C (non-condensing)

### Power Supply
- **200/220V YAC** (10% to 105%, 50/60 Hz)

### Gnding
- **Resistance: 100 Ω or less**

### Digital I/Os
- **General signals**: 16 inputs and 16 outputs
- **General I/O (optional)**: 1,024 inputs and 1,024 outputs

### Restrictions:
- *Note 1.* SI units are used for specifications.
- *Note 2.* The YA-U20F is designed for handling and assembly of workpieces in narrow spaces inaccessible to humans.
- *Note 3.* The YAC100 is a compact controller with improved performance and functions optimized for handling and assembly.
- Fits in a 19-inch rack and can be installed under conveyors.
- Commands specifically designed for workpiece handling with synchronized conveyors.

### Hardware Options
- **Standard**
  - I/O module (28 points, NPN or PNP)
  - Paper and interface boards
  - DeviceNet™ (master/slave), CC-Link™ (slave), PROFIBUS (slave), EtherCAT™ (slave, I/O communications), EtherCAT (slave), PROFIBUS (master/slave)

- **Options**
  - Conveyor synchronization
  - Vision function
  - Front reference point control
  - Software pendant

### Regarding the concurrent I/O ladder program

The YAC100 controller is equipped with an NPN (or PNP) for standard I/O. The dedicated input/output is assigned to this standard I/O board. For this reason, if dedicated input/output is to be assigned to various types of field bus, concurrent I/O ladder program settings must be made.

### Sample programs can be downloaded from our website.

A robot simulator that implements the same functionality as the actual controller.

**MotoSim EG-VRC-CadPack for YAMAHA**

Virtual programming before the actual line is completed allows major reductions in line startup time.

**Modeling layout**
- Models of workers and workpieces can be easily laid out.
- Models can be moved intuitively, simply by using the mouse.

**Programming and debugging**
- Automatic generation of robot operating programs, job editing, and job analysis can be performed easily.

**Intuitive robot operation**
- The robot's posture can be operated intuitively, allowing more efficient teaching.
- The robot can be watched as it operates, allowing visual verification.
### Standard accessories

#### YAP programming box (with 8m cable)

<table>
<thead>
<tr>
<th>Name</th>
<th>Model</th>
<th>Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>YAP-J</td>
<td>KEM-M5110-0J</td>
<td>Japanese</td>
</tr>
<tr>
<td>YAP-E</td>
<td>KEM-M5110-0E</td>
<td>English</td>
</tr>
<tr>
<td>YAP-C</td>
<td>KEM-M5110-0C</td>
<td>Chinese</td>
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</tbody>
</table>

#### Parts for the YAC100 controller

<table>
<thead>
<tr>
<th>Name</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power supply connector</td>
<td>KEN-M4971-00</td>
</tr>
<tr>
<td>Power supply cable clamp</td>
<td>KEN-M4836-00</td>
</tr>
<tr>
<td>Dummy connector for shorting safety signal</td>
<td>KEN-M5370-00</td>
</tr>
<tr>
<td>Power supply protection fuse</td>
<td>KEM-M5853-00</td>
</tr>
<tr>
<td>Standard I/O connector (STD.I/O)</td>
<td>KEN-M4420-00</td>
</tr>
</tbody>
</table>

### Options

#### Power cable (robot cable)

<table>
<thead>
<tr>
<th>Manipulator name</th>
<th>Model</th>
<th>Cable length</th>
<th>Cable diameter</th>
<th>Bending radius</th>
</tr>
</thead>
<tbody>
<tr>
<td>YA-RJ</td>
<td>KEM-M4710-40</td>
<td>4 m</td>
<td>Signal wire: 8.5 mm</td>
<td>85.0 mm</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Power wire: 13.5 mm</td>
<td>140.0 mm</td>
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<tr>
<td>YA-R3F</td>
<td>KEM-M4711-40</td>
<td>4 m</td>
<td>Signal wire: 17.5 mm</td>
<td>180.0 mm</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Power wire: 19.5 mm</td>
<td>200.0 mm</td>
</tr>
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<td>YA-RSF/RSFL/RF6F</td>
<td>KEM-M4712-40</td>
<td>4 m</td>
<td>Signal wire: 17.5 mm</td>
<td>180.0 mm</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Power wire: 19.5 mm</td>
<td>180.0 mm</td>
</tr>
<tr>
<td>YA-USF100F</td>
<td>KEM-M4713-40</td>
<td>4 m</td>
<td>Signal wire: 18.1 mm</td>
<td>180.0 mm</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Power wire: 26.0 mm</td>
<td>260.0 mm</td>
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<tr>
<td>YA-U20F</td>
<td>KEM-M4714-40</td>
<td>4 m</td>
<td>Signal wire: 17.5 mm</td>
<td>180.0 mm</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Power wire: 26.0 mm</td>
<td>260.0 mm</td>
</tr>
</tbody>
</table>

#### Device cable connector (connector for user wiring)

<table>
<thead>
<tr>
<th>Manipulator name</th>
<th>Part position</th>
<th>Model</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>YA-RJ</td>
<td>Base side</td>
<td>KEM-M4870-00</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arm side</td>
<td>KEM-M4871-10</td>
<td></td>
</tr>
<tr>
<td>YA-R3F</td>
<td>Base side</td>
<td>KEM-M4873-00</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arm side</td>
<td>KEM-M4874-00</td>
<td></td>
</tr>
<tr>
<td>YA-RSF/RSFL/F6F</td>
<td>Base side</td>
<td>KEM-M4873-10</td>
<td>two connectors</td>
</tr>
<tr>
<td></td>
<td>Arm side</td>
<td>KEM-M4874-10</td>
<td>two connectors</td>
</tr>
<tr>
<td>YA-R6F</td>
<td>Base side</td>
<td>KEM-M4870-20</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arm side</td>
<td>KEM-M4870-30</td>
<td></td>
</tr>
<tr>
<td>YA-USF</td>
<td>Base side</td>
<td>KEM-M4873-30</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arm side</td>
<td>KEM-M4870-40</td>
<td></td>
</tr>
<tr>
<td>YA-U10F</td>
<td>Base side</td>
<td>KEM-M4873-30</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arm side</td>
<td>KEM-M4870-50</td>
<td></td>
</tr>
<tr>
<td>YA-U20F</td>
<td>Base side</td>
<td>KEM-M4870-40</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arm side</td>
<td>KEM-M4870-60</td>
<td>Note: Two connectors are required on the arm side of YA-U20F.</td>
</tr>
</tbody>
</table>

#### Extension cable for YAP (extension cable for programming box)

<table>
<thead>
<tr>
<th>Name</th>
<th>Model</th>
<th>Cable length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extension cable for YAP</td>
<td>KEN-M531F-10</td>
<td>4 m</td>
</tr>
<tr>
<td></td>
<td>KEN-M531F-20</td>
<td>8 m</td>
</tr>
<tr>
<td></td>
<td>KEN-M531F-30</td>
<td>12 m</td>
</tr>
</tbody>
</table>

#### Dummy connector for YAP

<table>
<thead>
<tr>
<th>Name</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>YAP dummy connector</td>
<td>KEN-M5163-00</td>
</tr>
</tbody>
</table>

### Maintenance parts

<table>
<thead>
<tr>
<th>Name</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Battery unit for YA-RJ/R3F</td>
<td>KEM-M53G3-10</td>
</tr>
<tr>
<td>YA-RSF/RSFL/RF6F battery unit</td>
<td>KEM-M53G3-00</td>
</tr>
<tr>
<td>Battery unit for YAC100 controller</td>
<td>KEM-M53G3-00</td>
</tr>
<tr>
<td>AC fan motor</td>
<td>KEM-M6175-00</td>
</tr>
</tbody>
</table>

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### Basic system contents

#### Standard boards

- NPN (PNP*3) expansion DIO board
- 20 I/O each (Up to four boards)
- DeviceNet™ board
- Master/Slave
- CC-Link board
- DeviceNet™ board
- PROFINET board
- EtherCAT board
- Slave

#### Options

- Optional extension cable
- 4m/8m/12m

#### Option board

- Optional PC software
- MotoSim EG-VRC-CadPack for YAMAHA

#### Optional functionality

- Vision function
- External reference point control
- Conveyer synchronization board

#### Memo

1. Differs by model. For details, refer to the page for each model.
2. YAP-E (English) or YAP-C (Chinese) can also be selected.
3. PNP model is an option. Take care not to mix NPN and PNP for DIO.

---

### Notes

- Parts for the YAC100 controller
- Standard accessories
- Options
- Power cable (robot cable)
- Device cable connector (connector for user wiring)
- Extension cable for YAP (extension cable for programming box)
- Dummy connector for YAP
- Maintenance parts
- Basic system contents
- Standard boards
- Option board
- Optional functionality
- Memo

---

### References

- YAP-J (Japanese)*2
- Standard boards
- via EtherNet
- NPN (PNP*3) expansion DIO board
- 20 I/O each (Up to four boards)
- DeviceNet™ board
- Master/Slave
- CC-Link board
- Slave
- DeviceNet™ board
- PROFINET board
- EtherCAT board
- Slave
- Optional extension cable
- 4m/8m/12m
- Optional PC software
- MotoSim EG-VRC-CadPack for YAMAHA
- Vision function
- External reference point control
- Conveyer synchronization board
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- 2. YAP-E (English) or YAP-C (Chinese) can also be selected.
- 3. PNP model is an option. Take care not to mix NPN and PNP for DIO.

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### Diagram

- Diagram of YAC100 with components and connections
- Diagram of optional functionality
- Diagram of optional PC software
- Diagram of basic system contents

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### Tables

- Table of standard accessories
- Table of parts for the YAC100 controller
- Table of options
- Table of power cable (robot cable)
- Table of device cable connector (connector for user wiring)
- Table of extension cable for YAP (extension cable for programming box)
- Table of dummy connector for YAP
- Table of maintenance parts

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### Figures

- Figure of YAC100 with components
- Figure of optional functionality
- Figure of optional PC software
- Figure of basic system contents

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### Textual Content

- Accessories and part options
- Standard accessories
- YAP programming box (with 8m cable)
- Parts for the YAC100 controller
- Options
- Power cable (robot cable)
- Device cable connector (connector for user wiring)
- Extension cable for YAP (extension cable for programming box)
- Dummy connector for YAP
- Maintenance parts
- Basic system contents
- Standard boards
- Option board
- Optional functionality
- Memo

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### Additional Information

- YAC100 overview
- YAP-J (Japanese)*2
- Standard boards
- via EtherNet
- NPN (PNP*3) expansion DIO board
- 20 I/O each (Up to four boards)
- DeviceNet™ board
- Master/Slave
- CC-Link board
- Slave
- DeviceNet™ board
- PROFINET board
- EtherCAT board
- Slave
- Optional extension cable
- 4m/8m/12m
- Optional PC software
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- External reference point control
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### Conclusion

- Comprehensive coverage of accessories and part options
- Detailed breakdown of standard accessories
- Comprehensive options for power cable (robot cable)
- Critical information on device cable connector (connector for user wiring)
- Extensive documentation of extension cable for YAP (extension cable for programming box)
- Critical information on dummy connector for YAP
- Comprehensive maintenance parts
- Detailed examination of basic system contents
- Comprehensive list of standard boards
- Critical information on option board
- Extensive list of optional functionality
- Insightful notes and memo

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### Further Reading

- YAP-J (Japanese)*2
- Standard boards
- via EtherNet
- NPN (PNP*3) expansion DIO board
- 20 I/O each (Up to four boards)
- DeviceNet™ board
- Master/Slave
- CC-Link board
- Slave
- DeviceNet™ board
- PROFINET board
- EtherCAT board
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- Optional extension cable
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- 3. PNP model is an option. Take care not to mix NPN and PNP for DIO.