**Features**

1. **Controlling SCARA robots (4 axes) plus 2 additional axes**

   The X-SEL PX/QX can control SCARA robots plus up to two axes in a combination of single-axis and/or cartesian robots (total wattage: 2400 W) (*1). If the SCARA robot has an arm length of 500/600, two 750-W axes can be operated together.

   (*1) Single-axis robots may not be connectable depending on the type of SCARA robot. For details, refer to the notes under "Models."

2. **“Global type” for applications that require conformance to safety category 4**

   The “global type” does not have a built-in drive-source cutoff circuit. Instead, it cuts off the drive source using an external safety circuit. This design conforms to safety category 4 under ISO 13849-1. Both the large-capacity type (PX) and large-capacity global type (QX) conform to the CE Mark standard.

3. **Conveyor tracking function (Optional)**

   The PX/QX can be configured to detect works on the conveyor using a vision system and handle them synchronously with the conveyor movement. The conveyor tracking function will surely improve the work efficiency of your equipment.

   (Note) The conveyor tracking function is effective only if the actuator has an arm length of 500/600. Also, this function may not be supported under certain operating conditions. If you are considering adding the conveyor tracking option, consult IAI’s Sales Department.

4. **Compact, high performance and CE-compliant**

   - Approx. 40% slimmer than IAI’s conventional controllers (X-SEL general-purpose controllers).
   - Significantly faster than IAI’s conventional controllers (the command processing time is around half).
   - Connectable to DeviceNet, CC-Link, Ethernet and other networks.
   - Conforming to the CE Mark standard.
### Specifications

<table>
<thead>
<tr>
<th><strong>Series</strong></th>
<th><strong>Controller type</strong></th>
<th><strong>IX robot model</strong></th>
<th><strong>Motor output of axis 5</strong></th>
<th><strong>Motor output of axis 6</strong></th>
<th><strong>Standard I/O (Slot 1)</strong></th>
<th><strong>Expansion I/O (Slots 2 to 4)</strong></th>
<th><strong>Power-supply voltage</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>XSEL</td>
<td>PX4 (Large-capacity, 4-axis type)</td>
<td>NNN1205~8040 (Standard type)</td>
<td>Blank (No single axis)</td>
<td>Blank (No single axis)</td>
<td>N (Not used)</td>
<td>N (Not used)</td>
<td>2 (Standard)</td>
</tr>
<tr>
<td></td>
<td>PX5 (Large-capacity, 5-axis type)</td>
<td>NNN5016~6016 (High-speed type)</td>
<td>20 (20W)</td>
<td>30 (30W)</td>
<td>N (Not used)</td>
<td>N (Not used)</td>
<td>2 (Standard)</td>
</tr>
<tr>
<td></td>
<td>PX6 (Large-capacity, 6-axis type)</td>
<td>NNW2515~8040 (Dustproof/splash-proof)</td>
<td>30 (30W)</td>
<td>60 (60W)</td>
<td>N (Not used)</td>
<td>N (Not used)</td>
<td>3 (3m)</td>
</tr>
<tr>
<td></td>
<td>QX4 (Large-capacity, global 4-axis type)</td>
<td>TNX2015~3515 (Wall mount type)</td>
<td>60 (60W)</td>
<td>120 (120W)</td>
<td>N (Not used)</td>
<td>N (Not used)</td>
<td>3 (3m)</td>
</tr>
<tr>
<td></td>
<td>QX5 (Large-capacity, global 5-axis type)</td>
<td>UNN2020~8040 (Ceiling mount type)</td>
<td>100 (100W)</td>
<td>200 (200W)</td>
<td>N (Not used)</td>
<td>N (Not used)</td>
<td>3 (3m)</td>
</tr>
<tr>
<td></td>
<td>QX6 (Large-capacity, global 6-axis type)</td>
<td>NNN5020~8040 (Inverse type)</td>
<td>200 (200W)</td>
<td>400 (400W)</td>
<td>N (Not used)</td>
<td>N (Not used)</td>
<td>3 (3m)</td>
</tr>
</tbody>
</table>

#### Notes

- If the SCARA robot has an arm length of 700/800, the PX/QX connects up to 5 axes (SCARA + 1 axis).
- The high-speed type connects up to 4 axes (SCARA only).

#### Specifications

<table>
<thead>
<tr>
<th><strong>Large-capacity type</strong></th>
<th><strong>Large-capacity global type</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>PX4</td>
<td>Single-phase 200/230VAC -15%, +10%</td>
</tr>
<tr>
<td>PX5/PX6</td>
<td>Three-phase 200/230VAC -10%, +10%</td>
</tr>
<tr>
<td>QX4</td>
<td>3625VA max. (*)</td>
</tr>
<tr>
<td>QX5/QX6</td>
<td>5005VA max. (**)</td>
</tr>
<tr>
<td></td>
<td>3625 max. (*)</td>
</tr>
<tr>
<td></td>
<td>5005 max. (**)</td>
</tr>
</tbody>
</table>

- **Control type**: Indicate the controller type.
- **Motor output**: Indicate the motor output of the single-axis robot connected as axis 5 of the PX/PX6/QX/QX6.
- **Standard I/O (Slot 1)**: Indicate the specification of the standard slot (slot 1).
- **Expansion I/O (Slots 2 to 4)**: Indicate the specification of the expansion slots (slots 2 to 4). Take note that the use of expansion slots will change the external dimensions.
- **Power-supply voltage**: Indicate the voltage of the main controller power supply.
System Configuration

Connectable Actuator

SCARA Robot IX Series (all types)

Teaching Pendant

Model: IA-T-X (Standard)
IA-T-XD (With deadman switch)
IA-T-XA (ANSI/CE Mark compliant type)

This teaching device supports program/position input, test operation, monitoring, etc.
* IA-T-X/XD of version 1.20 or older and IA-T-XA of version 1.10 or older cannot be used with the PX/QX controllers.

Regeneration Unit

Model: REU-1

This unit converts to heat the regenerative current produced when the motor decelerates.
The regeneration unit may be required depending on the total motor output of single-axis robots connected to the controller (SCARA robots do not require this unit).
Refer to the table shown to the right for a guideline on whether or not the regeneration unit is required and if so, how many.

General Options

Teaching Pendant

Model: IA-101-X-MW

With a PC link cable (equipped with a D-sub, 9-pin connector on the PC end)
For Windows 95, 98, NT, 2000 and ME

This software is a startup support tool offering the functions needed to input programs/positions and perform debugging.
* Version 5.0.1.0 or older programs cannot be used with the PX/QX controllers.

PC Software

Model: IA-101-X-MW

With a PC link cable (equipped with a D-sub, 9-pin connector on the PC end)
For Windows 95, 98, NT, 2000 and ME

This software is a startup support tool offering the functions needed to input programs/positions and perform debugging.
* Version 5.0.1.0 or older programs cannot be used with the PX/QX controllers.

Regeneration Unit

Motor output | Horizontal application | Vertical application
---|---|---
0 ~ 100W | Not required | Not required
~ 200W | Not required | 1 unit
~ 400W | 1 unit | 1 unit
~ 600W | 1 unit | 1 unit
~ 800W | 1 unit | 1 unit
~ 1000W | 1 unit | 2 units
~ 1200W | 2 units | 2 units
~ 1500W | 2 units | 3 units

External Dimensions

ELECTROMATE
Toll Free Phone (877) SERVO98
Toll Free Fax (877) SERV099
www.electromate.com
sales@electromate.com
Sold & Serviced By:
The external dimensions of X-SEL PX/QX controllers vary depending on the type (arm length) of connected SCARA robot, number of connected axes, use/non-use of expansion I/O, and types of direct-coupled axes. In the table below, select the controller specification meeting your specific requirements and refer to the drawing of the corresponding number.

### Table: External Dimensions

<table>
<thead>
<tr>
<th>SCARA Type</th>
<th>Arm Length</th>
<th>Large-capacity type (PX)</th>
<th>Large-capacity global type (QX)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Without expansion I/O</td>
<td>With expansion I/O</td>
</tr>
<tr>
<td>Standard type</td>
<td>120</td>
<td>External dimensions①</td>
<td>External dimensions①</td>
</tr>
<tr>
<td></td>
<td>150</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>200</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>400</td>
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</tr>
<tr>
<td></td>
<td>400</td>
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</tr>
<tr>
<td></td>
<td>600</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>600</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wall mount type</td>
<td>500</td>
<td>External dimensions②</td>
<td>External dimensions②</td>
</tr>
<tr>
<td></td>
<td>600</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ceiling mount type</td>
<td>800</td>
<td>External dimensions③</td>
<td>External dimensions③</td>
</tr>
<tr>
<td></td>
<td>800</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High-speed type</td>
<td>500</td>
<td>External dimensions④</td>
<td>External dimensions④</td>
</tr>
<tr>
<td></td>
<td>600</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(*1) If the direct-coupled axis has a brake or is of absolute encoder specification, refer to external dimensions①.
(*2) If the direct-coupled axis has a brake or is of absolute encoder specification, refer to external dimensions②.
(*3) If the direct-coupled axis has a brake or is of absolute encoder specification, refer to external dimensions③.
(*4) If the direct-coupled axis has a brake or is of absolute encoder specification, refer to external dimensions④.
(*5) Due to the large motor wattage of the SCARA robot, the external dimensions of a 6-axis configuration apply even when only four axes are connected.

* All controller types have the same height.

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The drawing on the right side show the external dimensions of the controllers under different configurations and arm lengths. The measurements are given in millimeters and are specific to the arm length and controller type as indicated.