SCARA ROBOT THL SERIES

Achieving Reliable Quality and Superior Performance

SCARA ROBOT

THL Series

Low cost

Impressive performance at affordable prices.

Light-weight

Maximum weight reduction of about 60% has been achieved in comparison with our current models. Models capable of reducing environmental impact.

Energy-efficient

Maximum power consumption reduction of about 70% has been achieved in comparison with our current models. Low-power consumption robots ideal for energy conservation era.

Examples of Application and Adoption

Food Manufacturing

Used for food manufacturing lines to prepare and transport food.

Food

Used for food boxing lines to automatically box ready-packed food being transported on the belt conveyor into boxes.

Pharmaceutical and Medical

Used for boxing lines of pharmaceutical and medical products to automatically box finished products being transported on the belt conveyor into boxes.

Medical Examination

Used to automate the processing of a large quantity of specimen samples at medical institutions. Test tubes picked up by the SCARA robot are read by a barcode reader, allowing uniform work and secure repeatability.

Assembling and Inspection

Used to assemble and inspect electronic devices. The SCARA robot has been adopted for manufacturing of precision machines.

Cutting

Used as a cutting device. Cardboard boxes being transported by the conveyor are cut by the cutter attached to the SCARA robot.
## THL Series Detailed Specifications

### Introduction to the THL Series

The THL Series is a lineup of robot controllers designed to meet various application needs. With a diverse range of models, each is crafted to offer superior performance, reliability, and ease of use.

### Options and Others

- **Controller Teach Pendant**
- **THL Series Model Configuration**
- **Introduction to the THL Series**
- **Controller Teach Pendant**
- **THL Series Detailed Specifications**
- **Options and Others**

### Technical Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>THL300</th>
<th>THL400</th>
<th>THL500</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>Horizontal multi-joint</td>
<td>Horizontal multi-joint</td>
<td>Horizontal multi-joint</td>
</tr>
<tr>
<td><strong>No. of controlled axes</strong></td>
<td>4</td>
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<tr>
<td><strong>Arm length</strong></td>
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</tr>
<tr>
<td><strong>Working envelope</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Axis 1</td>
<td>217.5°/s</td>
<td>217.5°/s</td>
<td>217.5°/s</td>
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<td>Axis 2</td>
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<td>217.5°/s</td>
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</tr>
<tr>
<td>Axis 3 (Z axis)</td>
<td>217.5°/s</td>
<td>217.5°/s</td>
<td>217.5°/s</td>
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<tr>
<td>Axis 4 (Z-axis rotation)</td>
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<td>217.5°/s</td>
<td>217.5°/s</td>
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<tr>
<td><strong>Maximum speed</strong></td>
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<td></td>
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</tr>
<tr>
<td>Axis 1</td>
<td>0.2kg</td>
<td>0.2kg</td>
<td>0.2kg</td>
</tr>
<tr>
<td>Axis 2</td>
<td>0.2kg</td>
<td>0.2kg</td>
<td>0.2kg</td>
</tr>
<tr>
<td>Axis 3 (Z axis)</td>
<td>0.2kg</td>
<td>0.2kg</td>
<td>0.2kg</td>
</tr>
<tr>
<td>Axis 4 (Z-axis rotation)</td>
<td>0.2kg</td>
<td>0.2kg</td>
<td>0.2kg</td>
</tr>
<tr>
<td><strong>Positioning repeatability</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Axis 1</td>
<td>±0.015mm</td>
<td>±0.015mm</td>
<td>±0.015mm</td>
</tr>
<tr>
<td>Axis 2</td>
<td>±0.015mm</td>
<td>±0.015mm</td>
<td>±0.015mm</td>
</tr>
<tr>
<td>Axis 3 (Z axis)</td>
<td>±0.015mm</td>
<td>±0.015mm</td>
<td>±0.015mm</td>
</tr>
<tr>
<td>Axis 4 (Z-axis rotation)</td>
<td>±0.015mm</td>
<td>±0.015mm</td>
<td>±0.015mm</td>
</tr>
<tr>
<td><strong>Hand wiring</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hand pneumatic joints**</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Hand pneumatic joints**</td>
<td>8 inputs / 8 outputs</td>
<td>8 inputs / 8 outputs</td>
<td>8 inputs / 8 outputs</td>
</tr>
<tr>
<td>Hand positioning repeatability**</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Hand positioning repeatability**</td>
<td>8 inputs / 8 outputs</td>
<td>8 inputs / 8 outputs</td>
<td>8 inputs / 8 outputs</td>
</tr>
<tr>
<td>Position detection</td>
<td>Absolute</td>
<td>Absolute</td>
<td>Absolute</td>
</tr>
<tr>
<td>Robot controller cable</td>
<td>3.5m</td>
<td>3.5m</td>
<td>3.5m</td>
</tr>
<tr>
<td>Power capacity</td>
<td>1.4kVA</td>
<td>1.4kVA</td>
<td>1.4kVA</td>
</tr>
<tr>
<td>Mass</td>
<td>2.3kg</td>
<td>2.3kg</td>
<td>2.3kg</td>
</tr>
</tbody>
</table>

### Model Code

**THL400-Z-C-E-S**

- **Arm length**
- **Z-axis stroke**
- **CE Specifications**
- **With cap**
- **With protective bellows:** B
- **Dust-proof:** CS
- **IP66X**
- **Ceiling-mount type:** T
- **Low height:** TL
- **Simple Cleanroom:** SC
- **Low height:** FH

### Notes

1. Acceleration/deceleration rates may be limited according to the motion pattern, load mass, and amount of offset.
2. The stroke varies due to the installation environment. Continuous operation is not possible beyond the effective load ratio.

### Options

- **Special design**
- **Controller Teach Pendant**
- **THL Series Model Configuration**
- **Introduction to the THL Series**
- **Controller Teach Pendant**
- **THL Series Detailed Specifications**
- **Options and Others**

---

**Order model code**

**THL400-Z-C-E-S**

- **Arm length**
- **Z-axis stroke**
- **CE Specifications**
- **With cap**
- **With protective bellows:** B
- **Dust-proof:** CS
- **IP66X**
- **Ceiling-mount type:** T
- **Low height:** LH
High-performance Teach Pendant TP3000 (Optional)

Compared to our conventional teaching pendant TP1000, the TP3000 has significantly improved expression capability with the adoption of an LCD color screen.

Adoption of an easy-to-view vivid color screen

The keyboard display changes dynamically according to the operation. Required keys can be displayed whenever they are necessary.

Equipped with language association function

Language input candidates are displayed according to character input.

Outline function

The main program, subprograms and labels in the SCOL program can be displayed hierarchically so that the program structure can be viewed quickly.

Equipped with graphic operation keys

New sensation! Equipped with graphic operation keys!
The teach pendant TP3000 is easy to see and operate!

Support for IP65

IP (International Protection) rating classifies and rates the degree of protection provided against the ingress of solid foreign objects (including particles and dust) and water in mechanical casings and with electrical enclosures.

What is IP65?

IP (second characteristic numeral) (first characteristic numeral)

IP65: Protection is Such that “water directly projected by a nozzle against the enclosure from any direction shall have no harmful effects”.

Controller Specifications

Model: TSL3000

- No. of Controlled Axes: 4
- Motion Mode: לפר תочек (point-to-point),_CP (continuous path: Linear, Circular),_Start-Up After Move
- Storage capacity: Total: Approx. 8,000 points + 12,800 steps 1 program: Approx. 2,000 points + 3,000 steps
- Teaching unit (Optional): Teach Pendant TP1000, TP3000

Communication port:

- RS232C 1 port (HID, TCP/IP)
- RS422 1 port (for TP3000)

Other functions:

- Torque control, interruptive functions, self-diagnosis, I/O control and communications during motion, Coordinate calculations, Built-in PLC, etc.

Power supply:

- Single-phase: 190 to 240 V AC, 50/60 Hz

PC software (Optional):

- TSAssist: Robot Programming assistant tool
- High-performance 3D simulation, program editor, Teaching function, etc., TSIPC
- TCPRGOS: PLC programming
- Programmable I/O control, Field network (PROFIBUS, DeviceNet, CC-Link, EtherCAT, PROFINET)

Optional specifications:

- I/O signal polarity (“N-type” or “P-type”), I/O extension, Field network (PROFIBUS, DeviceNet, CC-Link, EtherCAT, PROFINET)

Optional controller specifications:

Model: TSL3000E

- No. of Controlled Axes: Total: Approx. 12,800 points + 25,600 steps 1 program: Approx. 2,000 points + 3,000 steps

User dimension and mass:

- 150(W)×266(H)×304(D) cm, 7(kg)

External specifications for TSL3000E:

- High-speed input signal, constant synchronization, CE compliance

Controller

TSL3000E

Teach Pendant

TP3000

TP1000

External view

Controller TSL3000

Teach Pendant TSL3000E

TP3000

Top View

Right Side View

Front View

Unit: X mm

Controller TSL3000E

TP3000

Top View

Right Side View

Front View

Re: "The images shown are illustration only. Note: The controller’s main body and the parts around the connector do not support the IP.

Note: Be sure to turn off the main power before attaching or detaching the cable."

Language input candidates are displayed according to character input.
SCARA ROBOT THL300

Model:
THL300

Type:
Horizontal multi-joint

No. of controlled axes:
4

Arm length:
300mm (125mm + 175mm)

Working envelope:

<table>
<thead>
<tr>
<th>Axis 1</th>
<th>Axis 2</th>
<th>Axis 3 (Z axis)</th>
<th>Axis 4 (Z-axis rotation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>±125°</td>
<td>±160°</td>
<td>±160mm/s</td>
<td>660°/s</td>
</tr>
<tr>
<td>±125°</td>
<td>±160°</td>
<td>±160mm/s</td>
<td>660°/s</td>
</tr>
<tr>
<td>±125°</td>
<td>±160°</td>
<td>±160mm/s</td>
<td>660°/s</td>
</tr>
<tr>
<td>±125°</td>
<td>±160°</td>
<td>±160mm/s</td>
<td>660°/s</td>
</tr>
</tbody>
</table>

Maximum speed:
0.48s

Maximum payload mass:
5kg (rated: 2kg)

Positioning repeatability:
±0.01mm

Position detection:
Absolute

Robot controller cable:
4 x 3 pcs.

Power capacity:
0.7kVA

Hand wiring:
8 inputs / 8 outputs

Hand pneumatic joints:
Φ4 x 3 pcs.

Allowable moment of inertia:
0.05kg*㎡

Mass:
12kg

External view

Operation Range

Hand Installation Area Detail

Hand I/O Connectors

Motor Power Connector

Encode I/O Connectors

M4 Tap Hole for Grounding

Z view

THL Series Detailed Specifications

Introduction to the THL Series

THL Series Model Configuration

Controller Teach Pendant

Options and Others

TOSHIBA MACHINE THL CATALOG

SCARA ROBOT THL400

Model:
THL400

Type:
Horizontal multi-joint

No. of controlled axes:
4

Arm length:
400mm (225mm + 175mm)

Working envelope:

<table>
<thead>
<tr>
<th>Axis 1</th>
<th>Axis 2</th>
<th>Axis 3 (Z axis)</th>
<th>Axis 4 (Z-axis rotation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>±125°</td>
<td>±160°</td>
<td>±160mm/s</td>
<td>660°/s</td>
</tr>
<tr>
<td>±125°</td>
<td>±160°</td>
<td>±160mm/s</td>
<td>660°/s</td>
</tr>
<tr>
<td>±125°</td>
<td>±160°</td>
<td>±160mm/s</td>
<td>660°/s</td>
</tr>
<tr>
<td>±125°</td>
<td>±160°</td>
<td>±160mm/s</td>
<td>660°/s</td>
</tr>
</tbody>
</table>

Maximum speed:
0.47s

Maximum payload mass:
5kg (rated: 2kg)

Positioning repeatability:
±0.01mm

Position detection:
Absolute

Robot controller cable:
4 x 3 pcs.

Power capacity:
0.7kVA

Hand wiring:
8 inputs / 8 outputs

Hand pneumatic joints:
Φ4 x 3 pcs.

Allowable moment of inertia:
0.05kg*㎡

Mass:
13kg

External view

Operation Range

Hand Installation Area Detail

Hand I/O Connectors

Motor Power Connector

Encode I/O Connectors

M4 Tap Hole for Grounding

Z view

THL Series Detailed Specifications

Introduction to the THL Series

THL Series Model Configuration

Controller Teach Pendant

Options and Others

TOSHIBA MACHINE THL CATALOG
Introduction to the THL Series

**Option and Others**

**THL Series Detailed Specifications**

**Controller Teach Pendant**

### THL500

- **Model**: THL500
- **Type**: Horizontal multi-point
- **No. of controlled axes**: 4
- **Arm length**: 500mm (200mm+300mm)
- **Working envelope**
  - Axis 1: ±125°
  - Axis 2: ±100°
  - Axis 3 (Z axis): 0°~150mm
  - Axis 4 (Z-axis rotation): ±100°
- **Maximum speed**
  - Axis 1: 450/7
  - Axis 2: 450/7
  - Axis 3 (Z axis): 2000/7
  - Axis 4 (Z-axis rotation): 1700/7
- **Composite**: 6.3 kg
- **Hand wiring**: 8 inputs / 8 outputs
- **Hand pneumatic joints**: φ 6 x 3 pcs.
- **Position detection**: Absolute
- **Robot controller cable**: 3.5 m
- **Power capacity**: 1.4 kVA
- **Mass**: 23 kg

*For 1 to 4, please see page 5.*

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### THL600

- **Model**: THL600
- **Type**: Horizontal multi-point
- **No. of controlled axes**: 4
- **Arm length**: 600mm (300mm+300mm)
- **Working envelope**
  - Axis 1: ±125°
  - Axis 2: ±100°
  - Axis 3 (Z axis): 0°~150mm
  - Axis 4 (Z-axis rotation): ±100°
- **Maximum speed**
  - Axis 1: 450/7
  - Axis 2: 450/7
  - Axis 3 (Z axis): 2000/7
  - Axis 4 (Z-axis rotation): 1700/7
- **Composite**: 7.1 kg
- **Hand wiring**: 8 inputs / 8 outputs
- **Hand pneumatic joints**: φ 6 x 3 pcs.
- **Position detection**: Absolute
- **Robot controller cable**: 3.5 m
- **Power capacity**: 1.4 kVA
- **Mass**: 23 kg

*For 1 to 4, please see page 5.*

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**External view**

**SCARA ROBOT THL500**

**Operation Range**

**Battery Box**

**Hand Installation Area Detail**

*The air tubes are packed, which need to be installed by the user.*

**SCARA ROBOT THL600**

**Operation Range**

**Battery Box**

**Hand Installation Area Detail**

*The air tubes are packed, which need to be installed by the user.*
**SCARA ROBOT THL900**

**THL900**

<table>
<thead>
<tr>
<th>Model</th>
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<tbody>
<tr>
<td>Type</td>
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<td>4</td>
</tr>
<tr>
<td>Arm length</td>
<td>930mm (450mm+450mm)</td>
</tr>
<tr>
<td>Working envelope</td>
<td>An. 1: ±125°</td>
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<tr>
<td></td>
<td>An. 2: ±145°</td>
</tr>
<tr>
<td></td>
<td>An. 3 (Z axis): 0° to 300mm</td>
</tr>
<tr>
<td>Maximum speed*1</td>
<td>An. 1: 180.75°/s</td>
</tr>
<tr>
<td></td>
<td>An. 2: 217.5°/s</td>
</tr>
<tr>
<td></td>
<td>An. 3 (Z axis): 2000mm/s</td>
</tr>
<tr>
<td></td>
<td>An. 4 (Z-axis rotation): 1700°/s</td>
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<tr>
<td>Standard cycle time (with 2 kg load)*2</td>
<td>0.48s</td>
</tr>
<tr>
<td>Maximum payload mass</td>
<td>10kg (rated: 2kg)</td>
</tr>
<tr>
<td>Allowable moment of inertia</td>
<td>0.2kg·m²</td>
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<tr>
<td>Positioning repeatability**</td>
<td>X-Y: ±0.012mm</td>
</tr>
<tr>
<td></td>
<td>Z (Axis 3): ±0.015mm</td>
</tr>
<tr>
<td></td>
<td>An. 4 (Axis rotation): ±0.007°</td>
</tr>
<tr>
<td>Hand wiring</td>
<td>8 inputs / 8 outputs</td>
</tr>
<tr>
<td>Hand pneumatic joints*4</td>
<td>φ6 x 3 pcs.</td>
</tr>
<tr>
<td>Position detection</td>
<td>Absolute</td>
</tr>
<tr>
<td>Robot controller cable</td>
<td>3.5m</td>
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<td>Power capacity</td>
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<tr>
<td>Mass</td>
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**External view**

<table>
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<tr>
<th>Operation Range</th>
<th>Z view</th>
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</table>

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**THL1000**

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<tr>
<td>Arm length</td>
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<td>Working envelope</td>
<td>An. 1: ±125°</td>
</tr>
<tr>
<td></td>
<td>An. 2: ±145°</td>
</tr>
<tr>
<td></td>
<td>An. 3 (Z axis): 0° to 300mm</td>
</tr>
<tr>
<td>Maximum speed*1</td>
<td>An. 1: 180.75°/s</td>
</tr>
<tr>
<td></td>
<td>An. 2: 217.5°/s</td>
</tr>
<tr>
<td></td>
<td>An. 3 (Z axis): 2000mm/s</td>
</tr>
<tr>
<td></td>
<td>An. 4 (Z-axis rotation): 1700°/s</td>
</tr>
<tr>
<td>Standard cycle time (with 2 kg load)*2</td>
<td>0.48s</td>
</tr>
<tr>
<td>Maximum payload mass</td>
<td>10kg (rated: 2kg)</td>
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<td>Allowable moment of inertia</td>
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<tr>
<td>Positioning repeatability**</td>
<td>X-Y: ±0.012mm</td>
</tr>
<tr>
<td></td>
<td>Z (Axis 3): ±0.015mm</td>
</tr>
<tr>
<td></td>
<td>An. 4 (Axis rotation): ±0.007°</td>
</tr>
<tr>
<td>Hand wiring</td>
<td>8 inputs / 8 outputs</td>
</tr>
<tr>
<td>Hand pneumatic joints*4</td>
<td>φ6 x 3 pcs.</td>
</tr>
<tr>
<td>Position detection</td>
<td>Absolute</td>
</tr>
<tr>
<td>Robot controller cable</td>
<td>3.5m</td>
</tr>
<tr>
<td>Power capacity</td>
<td>1.4kVA</td>
</tr>
<tr>
<td>Mass</td>
<td>37kg</td>
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</table>

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**External view**

<table>
<thead>
<tr>
<th>Operation Range</th>
<th>Z view</th>
</tr>
</thead>
</table>

---

*For *1 to *4, please see page 5.

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*The air tubes are packed, which need to be installed by the user.
These functional optional specifications are designed with consideration for applications, environment, and system-layout requirements.

**Z-Axis Long Stroke (-Z)**
Applicable Models: THL500, THL600, THL700

The Z-axis stroke range is extended.
Useful in an application with large up-down movements and handling of long workpieces.
(Note: If a stroke length other than 300mm is required, please contact us.)

**Protective Bellows for Z-Axis (-B)**
Applicable Models: all models of the THL Series

Protection of the Z-axis shaft lower side in an environment where liquid or chips may scatter.
(Note: The cycle time and Z-axis stroke differ from the standard specifications. Please contact us for details.)

**Z-Axis Cap (-C)**
Applicable Models: all models of the THL Series

Protection of the Z-axis shaft upper side in an environment where liquid or chips may scatter. It also prevents intrusion and jamming by cables and other peripheral items.

**Ceiling-mount type (-T)**
Applicable Models: THL400, THL500, THL600, THL700, THL800, THL900, THL1000

To enable more freedom in system layout and effective use of space, the robot is suspended from the upper side of the working area.
(Note: The working envelopes differ from the standard-type robots. Please contact us for details.)

**Optional Cables Length**
In all models of the THL Series SCARA robots, the length of the cable between a SCARA robot and its controller can be extended to a maximum of 15m.

**Dust-proof (-IP6X)**
Applicable models: THL500, THL600, THL700

Dust-proof structure with protection rating IP6X.
(Note: The number of hand signals and pneumatic pipes differ from the standard design. Please contact us for details.)

**Options Overview Table**

<table>
<thead>
<tr>
<th>Option</th>
<th>Z-Axis Stroke (-Z)</th>
<th>Protective Bellows (-B)</th>
<th>Z-Axis Cap (-C)</th>
<th>Ceiling-mount type (-T)</th>
<th>Cable Extension (Max.)</th>
<th>Safety Category</th>
<th>Dust-proof (-IP6X)</th>
<th>Dust and Splash-proof (-IP)</th>
<th>Fit for Interflection Mounting</th>
<th>Additional Axis</th>
<th>Simple Cleanroom (-SC)</th>
<th>Low Height (-LH)</th>
</tr>
</thead>
<tbody>
<tr>
<td>THL500</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>15m</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
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<td>○</td>
</tr>
<tr>
<td>THL600</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>15m</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
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<tr>
<td>THL700 (-200mm)</td>
<td>○</td>
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<td>○</td>
<td>○</td>
<td>15m</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>THL700 (-300mm)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>15m</td>
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○: Applicable  ●: Please contact us  ×: Not applicable  TH-A Series is recommended for dust and splash proof (IP) design.

**Support of Safety Category 3**
Applicable Models: all models of the THL Series

By adding necessary safety design, conformance to the safety category 3, which is required in the ANSI and CE marking, is achieved.
(Note: this is possible with TSL3000E controller.)

**Tool Flange for End Effectors Mounting**
Applicable Models: all models of the THL Series

Tool flange for securing the robot's hand is available.
*The photo right shows the tool flange for the THL500 - THL1000 SCARA robots.
The shape of the tool flange for the THL300 and THL4000 SCARA robots is different from the photo right.

**Additional Axis**
Applicable Models: all models of the THL Series

Additional axis can be added and controlled, for such purpose as mounting a robot on a traverse axis.

**Simple Cleanroom specification (-SC)**
Applicable Models: all models of the THL Series

Cleanroom design equivalent of ISO clean Class 5.
Effective for dust-averse applications such as semiconductor and electronics manufacturing.

**Low Height Design (-LH)**
Applicable Models: THL1000

Total height is lower than standard design by alternative wire harness design. It allows for installation in tight space.
Support for Connection Device Samples

The TSL3000 controller has a built-in PLC (TCmini). Input and output signals can be handled by ladder-style programming logic, independent from robot motion.

[Features and advantages]

- TCmini controls input/output signals of standard I/O, extension I/O and touch-sensitive panel by ladder-style and output signals can be handled by ladder-style logic programming with powerful programming support software TCRPGOS-W (optional).
- The scan time is 5ms per 1 K-Word. Connection is possible with various programmable controllers and display units etc.

Field Network

Various field network protocols are supported.

Field Network

TCRPGOS: For programming the built-in PLC

1. Ladder-style logic programming for the built-in PLC.
2. In addition to program creation, on-line monitoring of ladder program and I/O status help reduce development and debugging time.
3. Extensive functions such as address map display, comment display and search functions are provided.

PC Software for Programming Support

The following PC software tools are provided to shorten the time and increase the efficiency of system designing and installation work.

1. High Performance 3D Simulation

Accurate simulation with interference check, locus display, timer (cycle time measurement), placing simple workpieces and model shapes, loading 3D CAD data, saving 3D simulation to a video file, and multi-angle view.

These functions enable highly-accurate and a high-quality estimation of robot-automation processes. From simple outline simulation to "get the picture" to accurate simulation closer to actual machine implementation, TSAssist powerfully assists all phases of robot-automation system life cycle, from initial "sketch," planning, proposal, designing and installation, to improvement and re-purposing of existing facilities.

2. Highly Functional Program Editor

Robot language input support (keyword suggestions), Outline display, Split display.

Point data (taught position information) editor with, sort, search, filter functions. And in 3D Editor Mode, robot can be guided by mouse dragging and by clicking on object model surface. No complex position calculation is necessary.

With these functions, programming can be done efficiently and with minimum mistakes.

3. Easy Operation

Easy-to-understand, intuitive screen design, ribbon interface, window-dock function for customize-able operator panels.

Beginners will find it easy to understand and can quickly learn robot programming skills. For experienced robot users, TSAssist helps making robot programs efficiently by customization.

Connection Device Samples is a collaborative system between Toshiba Machine Co., Ltd. and Digital Electronics Corporation. It enables users to check the status of the robot on the touch panel display device.

[Features and advantages]

- When an error occurs in the robot, the error information or details can be checked on the Alarm Monitor Screen (see the left figure).
- Additionally, various other screens for functions including Robot I/O Monitor, Current Position Monitor, I/O Time Chart and Connected Device Data Transfer are provided.
- The above robot screens can be downloaded from the website of Digital Electronics Corporation free of charge. There is no need to create these screens and they can be used immediately after product purchase.
- The status of the robot can be checked even by people who cannot operate the teach pendant.
- Because the information about both the robot and the system is displayed on the same display device, troubleshooting is much easier.

*For product information about the touch panel that is compatible with this system, please contact Digital Electronics Corporation. http://www.pro-face.co.jp/atlas/use/sample/download/common/connection_robot_con_ts_j.html

*1Event Input and 512 Dual Inputs can be handled simultaneously."