



# The Revolutionary **Epson® Synthi** **T-Series All-in-One SCARA Robots**



Looking to automate your factory without wasting time or money on complex, expensive, slide-based solutions? Now you can — with **groundbreaking Synthi T-Series All-in-One SCARA robots from Epson**, the #1 SCARA robot manufacturer in the world. These innovative robots offer fast, easy integration and take less time to install than most slide-based solutions available. With 110 V and 220 V power and a wide variety of options, including integrated vision guidance, Synthi T-Series All-in-Ones truly have it all.

# SYNTHIS T-SERIES



## Simplicity Redefined in a Compact All-in-One Solution

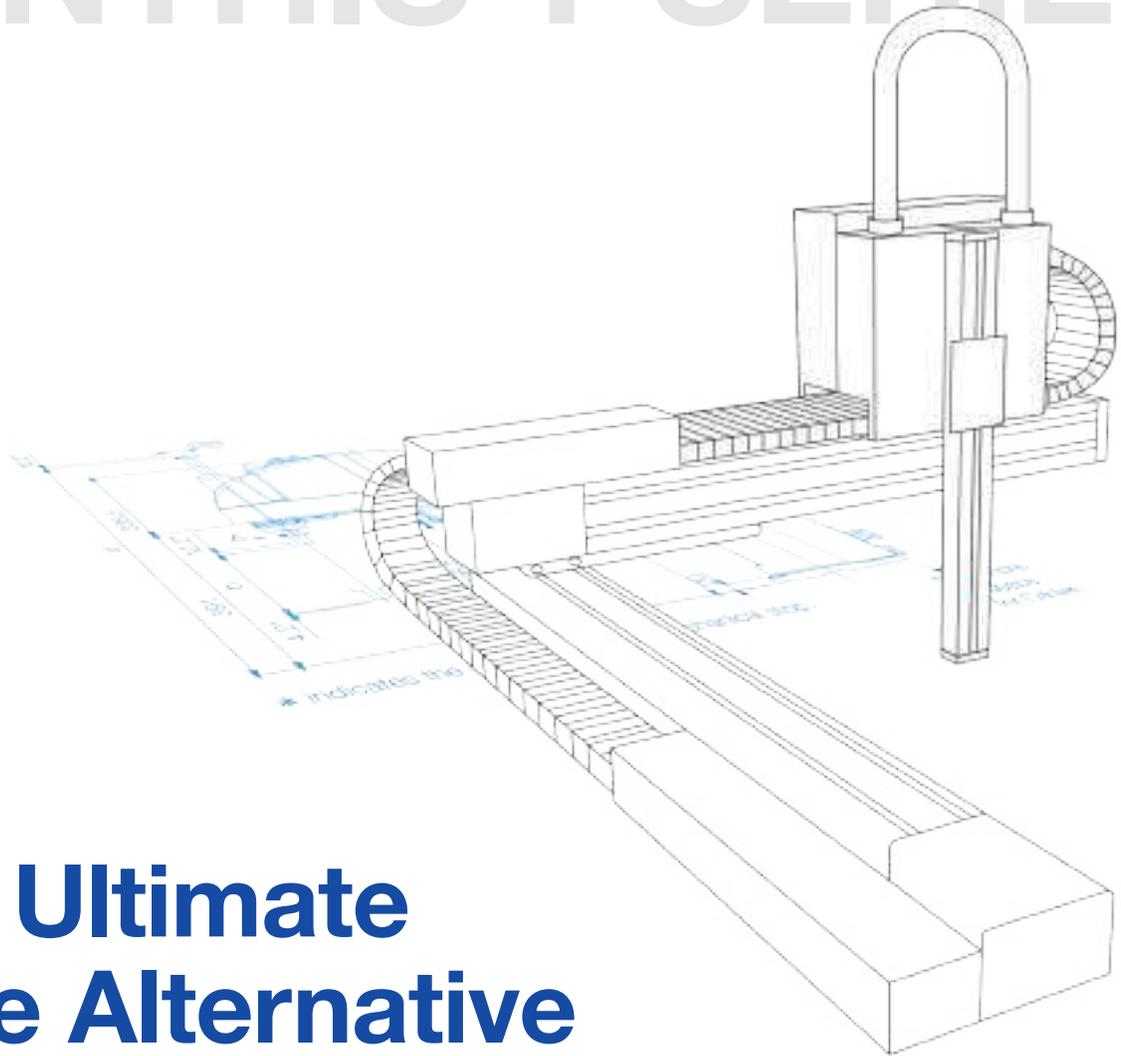
**What about space constraints?** The Synthis T-Series virtually eliminates that issue. With a built-in controller, plus built-in power for end-of-arm tooling, these space-saving all-in-ones have everything you need — and are designed to install in minutes<sup>1</sup>. Plus, they include the same intuitive Epson RC+<sup>®</sup> software and powerful features found in Epson's high-end robots.

The Synthis T3 All-in-One SCARA robot with built-in controller provides fast integration at an ultra low cost

## Feature-packed at an Amazing Price

- **Easy to install, fast integration** — unlike complex, expensive, linear-slide systems, Synthis T-Series robots are designed to install in minutes<sup>1</sup> and require less time and money for system integration
- **All-in-One solution** — built-in controller with power for end-of-arm tooling; takes up less space than linear-slide solutions
- **Full featured, ultra low cost** — includes same powerful feature set as Epson's high-end robot lineup at an incredibly affordable price
- **Built-in controller** — saves critical workspace with the controller conveniently housed in the robot's base
- **Easy to use** — intuitive and feature-packed Epson RC+ development software makes it easy to create powerful solutions
- **Comes standard with 110 V and 220 V power** — low wattage and power consumption (no special panel or plug required)

# SYNTHIS T-SERIES

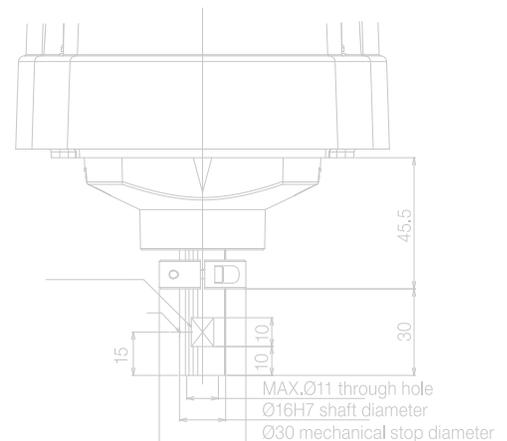


## The Ultimate Slide Alternative

**Synthis T-Series All-in-One SCARA robots** take up less space than linear-slide solutions, while providing a large work envelope. The perfect alternative for your automation needs, they offer a number of significant advantages, including:

- Fast integration/installation
- All-in-One design with built-in controller and power for end-of-arm tooling
- Fast cycle times
- Reduced footprint
- Low total cost of ownership
- Powerful options including Epson's integrated Vision Guide
- 4 built-in axes in one compact design

Slide installations can be extremely complex and many slides require constant adjustments



# Advantage Epson

#1 SCARA robot manufacturer in the world

- **Commitment to excellence** — continual improvements in performance, ease of use and integrated options
- **Advanced Servo Technology** — no overshoot or ringing
- **Ease of use** — intuitive and feature-packed Epson RC+ development software makes it easy to create powerful solutions



## Synthis T-Series Innovations

Providing a unique all-in-one solution, Synthis T-Series robots offer the perfect alternative to slide-based solutions, with all the features you need, right at your fingertips.

- **All-in-One design**
  - **Integrated controller** — saves critical workspace with the controller conveniently housed in the robot's base
  - **Built-in power for end-of-arm tooling** — eliminates the need for an external power source
- **No battery required for encoder** — helps minimize downtime and reduces the overall cost of ownership
- **High-performance, low cost<sup>2</sup>** — motors, amplifiers and other internal components are made by Epson



Built-in Controller

# SYNTHIS T-SERIES

## Award-winning Synthis T-Series Robots

With reach capability of 400 to 600 mm and a payload from 3 to 6 kg, all in a space-saving design, Synthis T-Series robots offer a truly groundbreaking solution. Add to that the ultra low cost, and you've got the perfect choice for fast, easy, affordable factory automation.



### T3

- 3 kg max. payload
- 400 mm reach
- 0.54 sec cycle time
- 0.01 kg\*m<sup>2</sup> J4 allowable moment of inertia
- Single-headed tooling



### T6

- 6 kg max. payload
- 600 mm reach
- 0.49 sec cycle time
- 0.08 kg\*m<sup>2</sup> J4 allowable moment of inertia
- Supports single- or dual-headed tooling





## Automation Applications

Synthis T-Series All-in-One SCARA robots are extremely versatile, providing a wide range of automation possibilities:

- Assembly
- Pick and place
- Material handling
- Packaging
- Kitting/Tray loading
- Machine tending
- Screw driving
- Dispensing
- Palletizing
- Lab analysis and testing
- Inspection and testing
- Finishing
- Grinding/Polishing

## Options and Accessories

### Integrated Vision Guidance

- **Highly regarded in the industry** as simple to use with a wide variety of powerful tools, Epson Vision Systems have provided integrated robot guidance for over 20 years. Our Vision Guide software features high performance tools in an intuitive point-and-click environment.



Synthis T-Series shown with mobile mounted camera as part of the Epson Vision Guide option

- **SPECIALLY PRICED** Synthis T-Series All-in-One + vision guidance bundle available with PV1 Vision Guide.

See your local reseller for more information.

### Fieldbus Interface Options

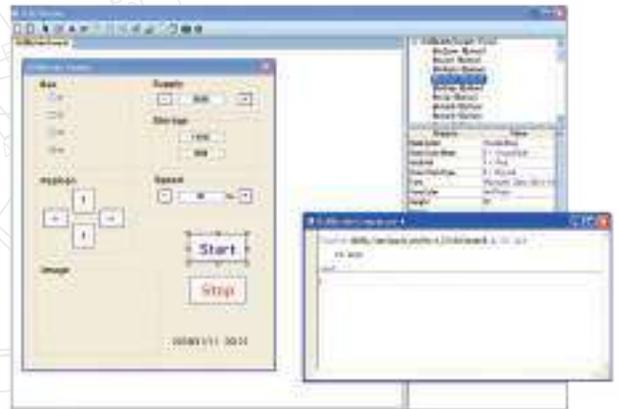
- **Fieldbus I/O interfaces** are used in factories worldwide to reduce cabling costs and setup time, and promote standard device usage. However, there is not one accepted Fieldbus I/O standard. That's why we offer a wide variety of options including:

- Ethernet/IP
- DeviceNet
- EtherCAT
- PROFINET
- PROFIBUS
- CC-Link

### GUI Builder

- **Epson's GUI Builder provides** the tools necessary to create graphical user interfaces from within the Epson RC+ Development Environment. With the GUI Builder toolset built in, users can work from one development environment, which helps reduce overall development time.

- Create GUIs without Visual Studio or other third-party software tools
- Create and debug GUI forms from your Epson RC+ Project
- Form and control events are executed as SPEL+ tasks



# T3

## SPECIFICATIONS

**Mounting Type** Tabletop  
**Arm Length (Joints #1 and #2)** 400 mm

**Payload**  
 Rated: 1 kg  
 Max.: 3 kg

**Repeatability**  
 Joint #1 and 2:  $\pm 0.02$  mm  
 Joint #3:  $\pm 0.02$  mm  
 Joint #4:  $\pm 0.02$  deg

**Standard Cycle Time**<sup>3</sup> 0.54 sec

### Max. Motion Range

Joint #1:  $\pm 132$  deg  
 Joint #2:  $\pm 141$  deg  
 Joint #3: 150 mm  
 Joint #4:  $\pm 360$  deg

**Weight (cables not included)** 16 kg (35.3 lb)

### Joint #4 Allowable Moment of Inertia

Rated: 0.003 kg-m<sup>2</sup>  
 Max.: 0.01 kg-m<sup>2</sup>

**Joint #3 Downward Force** 83 N

### User Electric Lines

Hand I/O: IN6/OUT4 (D-sub 15-pin)  
 User I/O: IN18/OUT12

### User Pneumatic Lines

$\phi 6$  mm x 2,  $\phi 4$  mm x 1

## OTHER

**Power** AC 100 – 240 V  
**Power Consumption** 660 kVA  
**Power Cable Length** 5 m  
**Controller** Inside of manipulator

### Safety Standard

CE Mark: EMC directive, machinery directive,  
 RoHS directive  
 ANSI/RIA R15.06-2012  
 NFPA 79 (2007 Edition)

## WHAT'S IN THE BOX

Synthis T3 robot  
 Robot power cable  
 Epson RC+ software  
 USB cable  
 E-Stop unit with cable  
 Synthis T3 Robot System Safety & Installation Manual  
 Connector set (I/O, hand I/O and safety circuit connectors)

## SUPPORT

**Customer Service** (562) 290-5920,  
 service@robots.epson.com

**Applications Support** (562) 290-5930,  
 applications@robots.epson.com

**Sales Inquiries** (562) 290-5997,  
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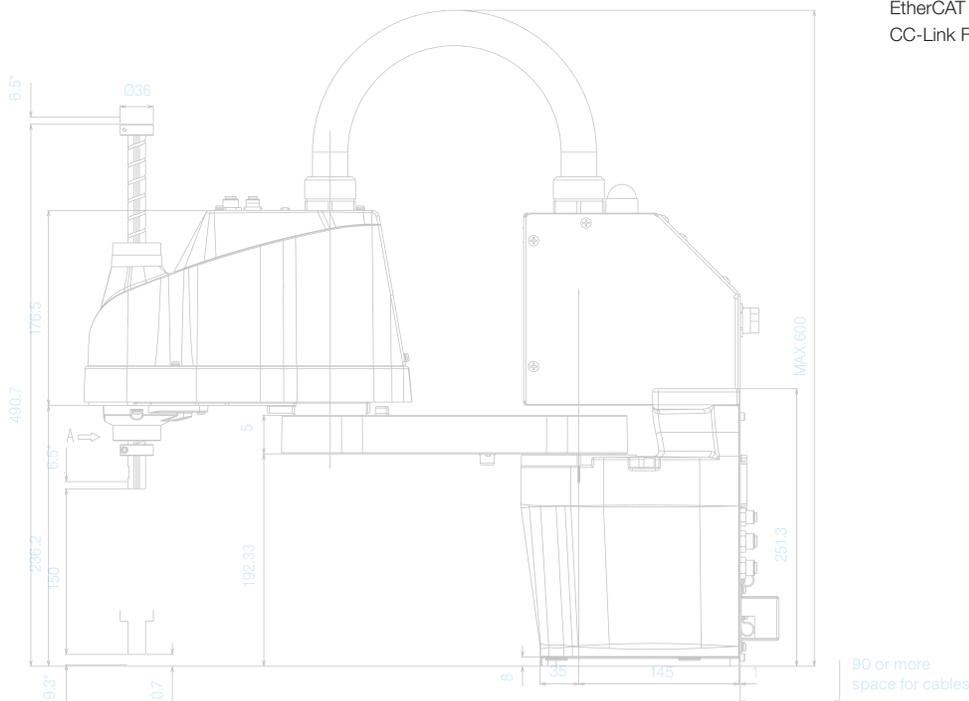


## ORDERING INFORMATION

Product Name	Product Code
Synthis T3 All-in-One SCARA Robot	RT3-401SS

### Options

Integrated Vision Guidance	Contact Epson
OCR (for use with Vision Guide)	R12NZ920H3
Epson RC+ 7.0 API	R12NZ900AE
GUI Builder 7.0	R12NZ900AH
External Control Point (ECP) Option	R12NZ900AF
TP3 – Teach Pendant	R12NZ900N3
TP2 – Teach Pendant	R12NZ900L9
Ethernet/IP Fieldbus I/O (Slave)	R12NZ900TH
Ethernet/IP Fieldbus I/O (Master)	R12NZ900NZ
DeviceNet Fieldbus I/O (Slave)	R12NZ900TE
DeviceNet Fieldbus I/O (Master)	R12NZ900NX
PROFINET Fieldbus I/O (Slave)	R12NZ900TG
PROFIBUS Fieldbus I/O (Slave)	R12NZ900TF
PROFIBUS Fieldbus I/O (Master)	R12NZ900NY
EtherCAT Fieldbus I/O (Slave)	R12NZ900TX
CC-Link Fieldbus I/O (Slave)	R12NZ900TD



1 Actual installation time may vary depending on experience, environment and set up.

2 Compared to current Epson Robots using third party components.

3 Cycle time based on round-trip arch motion (300 mm horizontal, 25 mm vertical).

# T6

## SPECIFICATIONS

**Mounting Type** Tabletop  
**Arm Length (Joints #1 and #2)** 600 mm

**Payload**  
 Rated: 2 kg  
 Max.: 6 kg

**Repeatability**  
 Joint #1 and 2:  $\pm 0.04$  mm  
 Joint #3:  $\pm 0.02$  mm  
 Joint #4:  $\pm 0.02$  deg

**Standard Cycle Time**<sup>3</sup> 0.49 sec

### Max. Motion Range

Joint #1:  $\pm 132$  deg  
 Joint #2:  $\pm 150$  deg  
 Joint #3: 200 mm  
 Joint #4:  $\pm 360$  deg

**Weight (cables not included)** 22 kg (48.5 lb)

### Joint #4 Allowable Moment of Inertia

Rated: 0.01 kg·m<sup>2</sup>  
 Max.: 0.08 kg·m<sup>2</sup>

**Joint #3 Downward Force** 83 N

### User Electric Lines

Hand I/O: IN6/OUT4 (D-sub 15-pin)  
 User I/O: IN18/OUT12

### User Pneumatic Lines

$\phi 6$  mm x 2,  $\phi 4$  mm x 1

## OTHER

**Power** AC 100 – 240 V  
**Power Consumption** 1.2 kVA  
**Power Cable Length** 5 m  
**Controller** Inside of manipulator  
**Safety Standard**  
 CE Mark: EMC directive, machinery directive,  
 RoHS directive  
 ANSI/RIA R15.06-2012  
 NFPA 79 (2007 Edition)



## WHAT'S IN THE BOX

Synthis T6 robot  
 Robot power cable  
 Epson RC+ software  
 USB cable  
 E-Stop unit with cable  
 Synthis T6 Robot System Safety & Installation Manual  
 Connector set (I/O, hand I/O and safety circuit connectors)

## SUPPORT

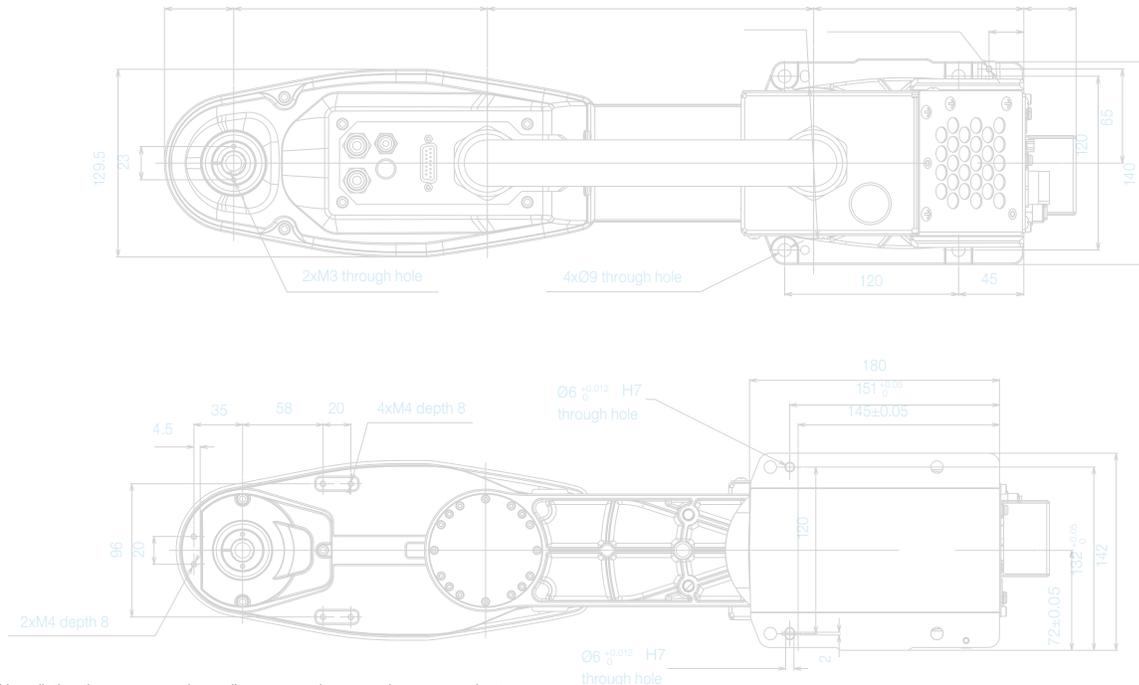
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## ORDERING INFORMATION

Product Name	Product Code
Synthis T6 All-in-One SCARA Robot	RT6-602SS
<b>Options</b>	
Integrated Vision Guidance	Contact Epson
OCR (for use with Vision Guide)	R12NZ920H3
Epson RC+ 7.0 API	R12NZ900AE
GUI Builder 7.0	R12NZ900AH
External Control Point (ECP) Option	R12NZ900AF
TP3 – Teach Pendant	R12NZ900N3
TP2 – Teach Pendant	R12NZ900L9
Ethernet/IP Fieldbus I/O (Slave)	R12NZ900TH
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- A commitment to the environment

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