

# Application Case

Industrial Automation BG, Delta Electronics, Inc.

Case	Delta SCARA Robot for Automatic Screw Driving Machine				
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Applicable to	Delta SCARA Robot				
Key words	Robotic Arm, SCARA Robot, Screw Driving				

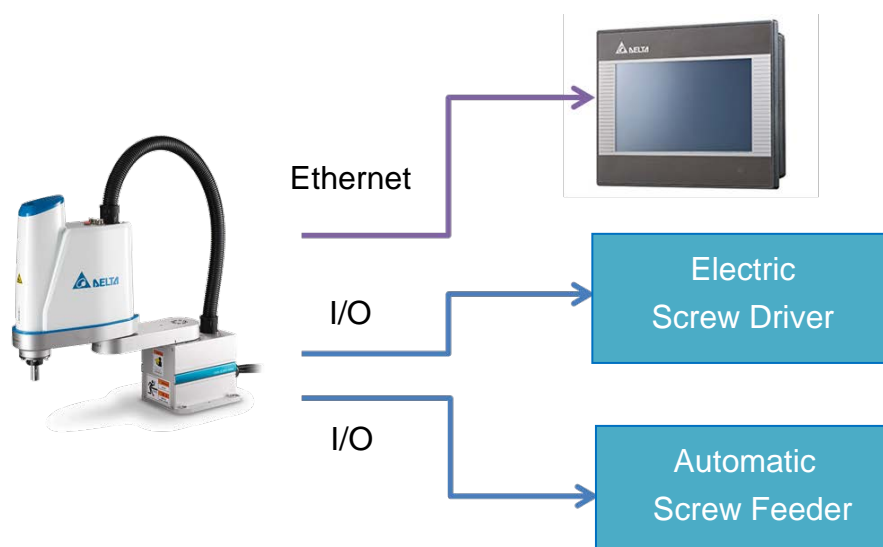
## [Application Introduction]

The Delta SCARA Robot features high speed and high repeatability. When applied in automatic screw driving machines, it not only reduces the size of the device, but also operates at faster speeds. It offers a new technology choice for automatic screw driving machines.

Fastening screws is often necessary during the assembly process of computer, communication and consumer electronics products. In some cases, more than 20 screws are fastened on one device. Traditionally, operators fasten the screws with handheld electric screwdrivers. More work time is needed when there are many screws to be fastened. Sometimes omissions happen resulting to unstable product quality. Currently there are XYZ-axis desktop automatic screw driving machines on the market to solve the omission problem of human operators. However, this type of equipment is often quite large and takes much space on production lines.

## [Delta Products in a Screw Driving Machine System Structure]

The SCARA automatic screw driving machine must work with an electric screwdriver for screw fastening. To precisely control the torque it uses a servo electric screwdriver. An automatic screw feeder is also necessary in the system. It is responsible for discharging the screws in arrays. A human machine interface (HMI) is set up for a user to easily operate and control the machine. SCARA and HMI communicate with Ethernet and the electric screwdriver and automatic screw feeder are controlled by I/O points. See the following chart.



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## [Application Solutions]

SCARA can quickly and stably move to the set points and complete screw fastening operations. When designing the installation mechanism for an electric screwdriver, one must pay attention to reducing weight and install it as close as possible to the SCARA robot. This helps to avoid shock when it moves quickly to maintain the stability of the system.



## [What Delta Provides for Automatic Screw Driving Machine Applications]

The application of the SCARA robot in automatic screw driving machines can reduce the size of the machine, increase the speed of screw driving and ensure the quality of screw fastening on the products. It also provides flexible increasing and decreasing the points that need screw fastening and its easy teaching function increases work efficiency.

The Delta SCARA robot supports Ethernet, RS-232 and RS-485 communication and integrates with machine vision systems, PLCs, and HMIs. It meets demand for full automation on the production line, providing customers with a complete solution.

For more information on Delta's industrial automation products, please visit our website at: [www.delta.com.tw/ia](http://www.delta.com.tw/ia)

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