



SUCCESS STORY

Modular cubes with modular connection system for Smart Factory

The Korea Smart Factory Association (KOSF) is a federation by the Korean government developing solutions in the field of industrial machinery and process automation. Its main mission is to support small and medium manufacturers that do not have the financial means and know-how to design new smart factory solutions on their own.

KOSF's key project are the Smart Cubes, which are modular blocks that perform a dedicated task in the automation process, e.g. quality inspection, testing cells, robotic assembly, packaging and many more. They are an integrated element for smart factories, where prior simulation and modelling of entire manufacturing processes are analyzed in advance, thus optimizing costs and time accordingly. The mobile Smart Cubes are equipped with wheels and can be individually linked together to form a complete process line.

The business needs

For building the customized production line, the Smart Cubes are remotely navigated to link to each other. Therefore, the technical connection needs to be robust and resist to many matching cycles. The configuration of the connectors has to provide data transfer, signal information for man-to-machine communication (M2M), compressed air and power. As the solution of the Smart Cubes will gradually evolve, the connectors are supposed to allow modular configuration.



Market Segment:
Manufacturing Industry



- Industrial Connectors:** CombiTac
Application: interconnection of smart factory cube modules
- Individually configurable with data (Ethernet), power, M2M communication (Signals), compressed air
 - Resistant to high mating cycles
 - Tolerance compensation
 - Reliable and stable performance



The challenge

KOSF Smart Cubes feature a plate at the left and right side carrying two large guiding devices and two claws grabbing the next cube to pull together and finally interconnect both modules remotely. Hence, the connector needs also to compensate deviation besides being robust, safe and very reliable.

The solution

The modular CombiTac connector system provides tolerance compensation and ensures highest contact reliability when one Smart Cube is interconnected to another. The connection types can be entirely configured as required, whether there is fluid needed or data and signal or any other combination with power. This modular connection solution can be integrated in any construction as panel mount system.

The added-value provided

The solution implemented by Stäubli impressed KOSF by its reliable and stable performance as well as the ruggedness of the air coupling module in the CombiTac. Further it convinced, because the connection is very efficient. The Smart Cubes can be interconnected very quickly and link all medias at one time.

The vicinity of the Stäubli engineers and the cooperative development of the best engineering solution to interconnect the cubes supported KOSF's concept of the modularity of mobile process automation cells. The Smart Cubes benefit from Stäubli's reliable, robust and modular CombiTac system.

Customer benefits

- Saving of conversion costs by tailor made solution
- Optimized operational costs through reliable and durable connection in challenging environment
- Timesaving coupling process of production cells due to modular connector design
- Customer vicinity of Stäubli engineering contact

About Stäubli

Stäubli is a global mechatronics solution provider with three core activities: Connectors, Robotics and Textile. The international Group has a presence in 29 countries.

Stäubli Electrical Connectors is a specialist for advanced contact technology and technically mature solutions with a product portfolio ranging from miniature connectors up to high-power connectors for various industries.

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