

CUSTOMER SUCCESS STORY:

THE POWER OF COLLABORATION TO MINIATURIZE POSITION, SAFETY AND VISION SENSORS

Right angle connectors allow manufacturer to upgrade and miniaturize the sensors in a new line of industrial safety laser scanners.

In the race for excellence in industrial safety, it is essential to be innovative and consistently meet and exceed customer demands. A market-leading producer of industrial safety laser scanners developed a new generation of high-performance scanners that were smaller and lighter by partnering with TE Connectivity (TE), a renowned connector solution provider.

How? Through a combination of streamlined engineering processes and smart, cost-efficient, off-the-shelf connector solutions. Learn how this innovative partnership delivered exceptional solutions in the industrial safety sector and how your company could benefit from TE's expertise.

REQUIREMENTS FOR NEW GENERATION OF POSITION, SAFETY AND VISION SENSORS:



REDUCED SIZE



IMPROVED WEIGHT



UPGRADED PERFORMANCE

SITUATION: Pushing to expand a product portfolio while shrinking the product envelope

To strengthen their position in the market, our customer planned to develop a new line of industrial safety laser scanners. The new scanners needed to be smaller and lighter than the previous generation yet maintain a high level of performance. To accomplish this, the customer needed a reliable, cost-efficient connector solution that optimized the sensor size and could be engineered more efficiently.

CHALLENGE: Finding the balance between custom and efficient

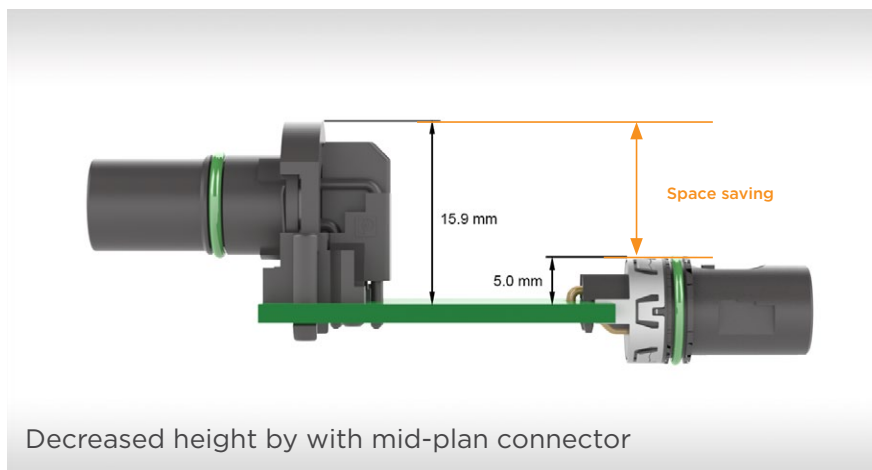
The market standard for a sealed interface for power and industrial Ethernet communication is the M12 connector. However M12 connectors are typically soldered after the surface-mounted device (SMD) components, which requires an extra step in the process and results in higher costs and more production time. Additionally, space requirements are very tight. In the past, our customer dealt with this by designing its own connectors to fit. This resulted in increased engineering resources and costs. Offering an off-the-shelf solution that was compact yet reliable and cost-effective would help the customer in this project.

SOLUTION: Finding a better off-the-shelf solution

As a trusted partner for connector solutions, TE offered a range of connectors that were just right for our customer's unique needs. At the top of the list was TE's M12 insert, which provided the necessary size, flexibility, and total applied cost range the customer required. Plus the M12 connector was available in standard 180° and right angle (mid-plane) versions, so the customer could select the best fit for their scanner's mechanical requirements.

TE's M12 insert offered several advantages, including:

- Enhancing printed circuit board (PCB) real estate within the scanner, resulting in smaller and more efficient sensors
- Reducing assembly costs by using a reflow soldering process, virtually eliminating the need for an additional soldering step



FEATURES OF M12 RIGHT ANGLE CONNECTORS

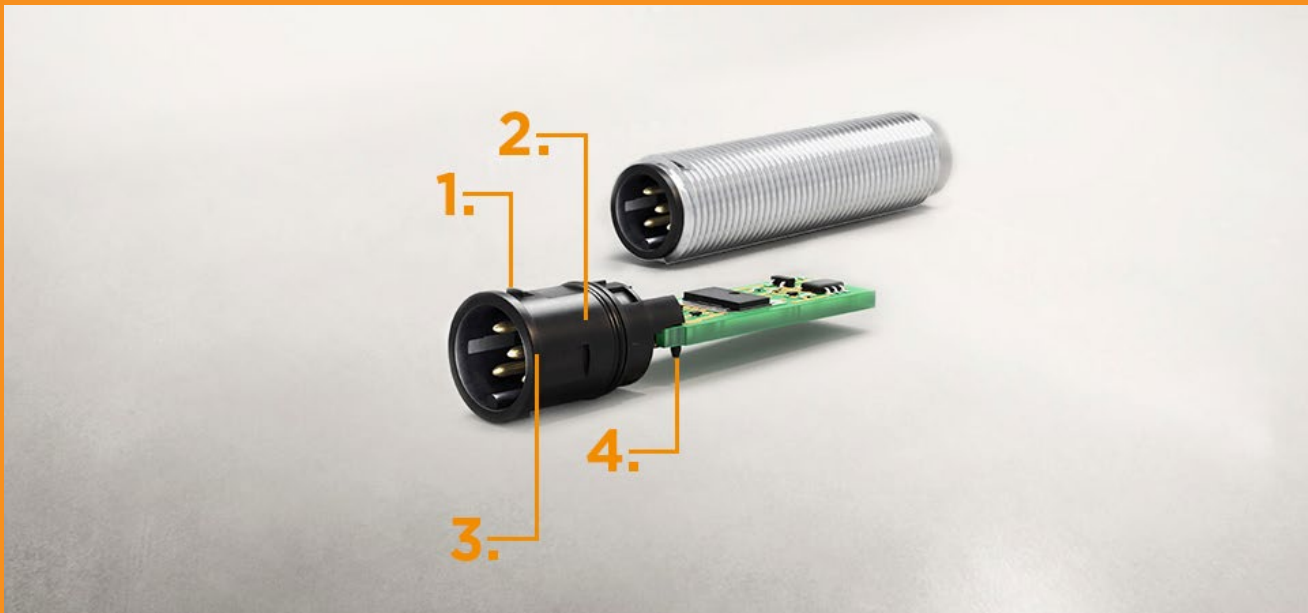
- Mid-plane design reduces the necessary height by 10 mm
- Lead-free reflow compatible
- Integrated pick and place area
- Specially designed for M12 sensor pipes
- Snap-in function and anti-twist protection versions available
- Shielded and unshielded versions available
- 4, 5, and 8-pin available
- Pegs and integrated PCB support areas help ensure a secure position while soldering



CONCLUSION: Compact connector streamlines engineering process and reduces cost

By integrating the M12 insert into the design of the scanner, our customer was able to successfully develop their new generation of industrial safety laser scanners and get to market more efficiently. The collaboration with TE not only saved significant costs and production time, it also freed up the customer's internal design team to take on engineering tasks that better suited their core competencies, so they could provide greater value to the market.

Learn more about extremely compact angled M12 PCB connector:



1. Snap-in function & anti-twist protection

Support secure positioning of the connector in the sensor tube.

2. Extremely compact design

The 90-degree M12 connectors are specially designed for M12 sensor tubes, and have an extremely short design with 14 mm length.

3. Stop on housing

The stop is provided by the collar on the connector, which is typical of these applications

4. Space saving due to placing on PCB central axis

Central position of the connector to the printed circuit board and through hole reflow (THR) connection for automatic assembly.

WE ARE HERE TO HELP



Read more insights from TE's experts:

Connect With Us

No matter your answers to the questions above, the engineering team at TE is here to help. Our team brings deep expertise in sensor applications and can work with you to co-create a customized solution to fit your needs. At TE, we provide highly engineered connectivity solutions that support virtually uninterrupted operations for power, signal, and data, including high-speed connectivity of 1 Gbps and beyond for data-intensive applications like machine vision. We also build integrated components and solutions to help simplify your most complex manufacturing processes.

We are ready to help you take your industrial automation capabilities to the next level.

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