OMRON

ELECTRONIC COMPONENTS

Smartclick™

Next Generation M12 Style Connectors

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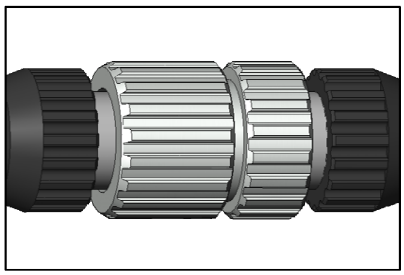
In response to market demands, connector manufacturers have responded with the development of an M12 model utilizing modified screw-lock and bayonet locking mechanisms. The new lock designs add security and reliability even in environments where heavy vibrations can loosen other connection styles. Improving on these locking designs, vendors have progressed by developing connectors that meet the requirements users demand.

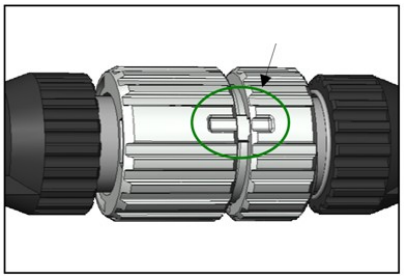
Lower Application Cost:

Design improvements reduce installer fatigue caused by multiple terminations. Another time saver is found in blind-mating applications where the installer must awkwardly reach to make a connection. With the new M12's, the connection is quickly and securely made. Smartclick™ bayonet locking mechanism requires only 1/8th of a turn to connect.

Existing M12 Connector



No Indication of Tight Connection



Visible indicator of Secure Connection

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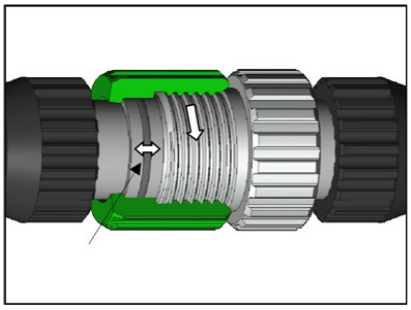
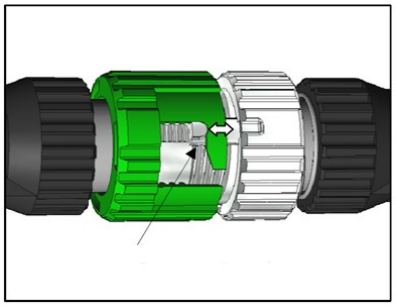
Increased Reliability:

Under-tightened connections can cause intermittent signals in applications where vibration is present. Additionally, under-tightened connections can also lead to poor sealing. Conversely, an over-tightened connection can damage the O-ring, leading to poor sealing. Poor sealing would allow dust, oil, moisture, or other things found in the industrial environment to seep in and lead to an intermittent signal condition.

Existing M12 Connector



O-ring expands naturally, pushing Connection loose



Locking Mechanism stabilizes connection

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Backwards Compatibility:

So the question then arises, *What about all of the existing connectors already in application in the market*? Most new designs will mate with existing thread style M12 connectors that are applied by simply screwing them on. This backwards compatibility eliminates the need to stock multiple styles. Vibration-proof options are available and are compatible with other M12 plug and socket models as well.

Reduced Downtime:

Estimates run in the thousands of dollars per hour of downtime. Not only are employees standing idle, but there is a loss of production from the equipment being manipulated for back-up, not to mention the void from the "down line" equipment. The advantages reviewed above eliminate the connection being the source of trouble.

IP67 Rating:

Features the same degree of protection as existing screw-type M12 models, and suitable for harsh environment use.

Target Applications

- Industrial Automation
- Automobile Manufacturing
- Machine Tools
- Factory Automation Machinery
- Semiconductor Manufacturing
- Manufacturing and Use of Solenoid and Sensor Valves

Product offering:

- A-coding M12 for general sensor connections (Cable assembly, Field assembly, Panel mount, Y-joint and Junction Box)
- D-coding M12 for Industrial Ethernets (Cable assembly with Cat5E for M12-M12/ M12-RJ45, Panel mount, Field assembly)

For years the industrial automation market has been asking for improvements in the M12 style connectors. New locking mechanisms provide a vast improvement over simple threaded connectors. As more industries embrace the IEC61076-2-101 standard, the variety of M12-style connectors will continue to increase. Vendors are already supplying junction boxes, Y-joints and male/female sockets and plugs. As more uses are discovered, vendors will be continually challenged to offer more options to meet the growing demand.

Check out OMRON's M12 Line-up

Download the XS5 (M12 with Smartclick™ Datasheet)