

# ENSURING LONG-TERM CONNECTOR SINGLE WIRE SEALS AND CAVITY PLUS INTEGRITY IN HARSH ENVIRONMENTS

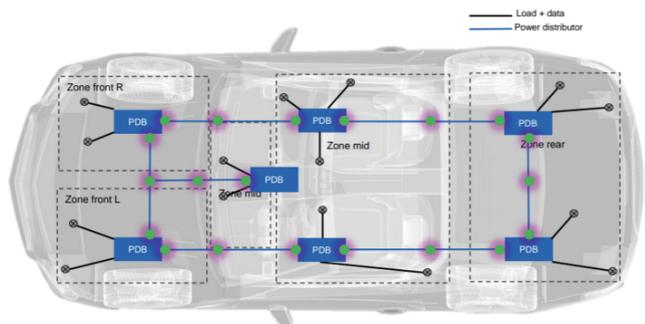
Automotive manufacturers face increasing demands for lightweight, electrified platforms that maintain structural integrity and NVH performance. At the same time, global production networks require components that are easy to install, cost-effective, and standardized across multiple vehicle architectures. TE Connectivity's sealing systems and cavity plugs play a vital role in achieving these objectives by preventing water ingress, reducing noise and vibration, and protecting against corrosion. This paper explores how TE's portfolio combines design for manufacturability with durability optimization, ensuring efficiency without compromising reliability.

## APPLICATIONS

Ideal for harsh environment automotive applications that are required to support:

- Wire-to-wire, wire-to-board and wire-to-device
- Powertrain systems
- Safety systems
- Door-to-body
- ADAS
- Infotainment
- Chassis systems

Tomorrow's electrical architecture



Pro-active portfolio shaping for zonal & EV architecture

## WHY IT MATTERS

Single wire seals (SWS) and cavity plugs are critical subcomponents designed to maintain environmental sealing at the individual thermal and unused cavity level within multiway connector housing. SWS elements typically encircle the conductor insulation, maintaining compression against both the wire and the connector cavity.

## MAIN FUNCTIONS

FLUID RESISTANCE	ABRASION RESISTANCE	TEAR RESISTANCE	WIRE PROTECTION	HEAT RESISTANCE	VIBRATION MITIGATION
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## BENEFITS

- Increased performance, safety, and longevity of your electrical connection field.
- IP67 waterproof protection.
- Cavity compatible with some competitor terminal systems.
- Global manufacturing footprint and integrated supply chain.
- Harness automation ready.
- 48V architecture enabled.

## TE CONNECTIVITY SEALS PORTFOLIO

SINGLE WIRE SEALS			CAVITY PLUGS
SEALS TO WIRE	SEALS TO CONTACT	SEAL TO CAVITY	
<p><b>Multi-lip configurations creating three layers of redundant sealing.</b></p> <ul style="list-style-type: none"> <li>• Silicon rubber offers a high mechanical resistance in numerous operating temperatures.</li> <li>• Material hardness specified at 50-60 Shore A (ShA) durometer providing optimal compression, tear resistance and durability required.</li> <li>• Lubrication for wire passage through the seal to reduce damage when inserted into the cavity.</li> </ul>			<ul style="list-style-type: none"> <li>• Used to seal a single connector cavity where no contact is used</li> <li>• Compatible for either female or male housings</li> <li>• Silicon rubber material selection with a ShA hardness ranging between 50-60.</li> <li>• High level seal</li> </ul>

Learn more about our seals portfolio at <https://www.te.com/seals>