

Delphi Waferized Connection System

► Description

Delphi's Waferized Connection System is a bussed system comprised of small wafer elements which are an integral part of Delphi's miniaturization and optimization activities, enabled by enhanced automation capabilities. The goals of these activities are reduced mass and size, and cost efficient Electrical/Electronic Architecture (E/EA) design.

Waferized joint connectors are built from a number of smaller connectors, known as wafers. Delphi's waferized joint connection system design uses smaller wafers (three or four terminal cavities) compared to traditional methods (10 or more cavities). All wafers are independent of each other, with Integrated Secondary Locks (ISL) and features for assembly to the mating connector or housing. This waferization allows harness manufacturers to build more efficiently by eliminating splices and minimizing terminal plugs on the assembly conveyor.



Delphi 064 Waferized Connection System

► Benefits of the Overall System

- Flexibility results because various wafer assembly arrays are available, from a single wafer to a fully populated housing (joint, in-line or device connectors) utilizing a common housing
- Uses smaller, low terminal-count wafers, so sub-harnesses can be broken down to the size necessary to facilitate an efficient build
- ISL allows secondary terminal locking to be accomplished at the sub-harness build area
 - Each terminal is secondary locked independently, before removal from the sub-harness build fixture
 - Specific ISLs can remain unclosed to allow plugging of terminals later at the final harness build area, if required
 - No covers required to provide functional support of the wafer stack

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▶ Benefits of the Wafers

- Allow the main harness to be partitioned into smaller groups of similar or dissimilar circuits, depending on requirements
- Common circuits can be bussed many ways and wafers combined to form two-rowed device connectors for enhanced flexibility
- Designed to be independent of each other to accommodate several product options
- Can be plugged directly to mating connector or housing, since each wafer is self contained, with orientation and locking features are integral to the wafer design (wafers do not need to be stacked to create a bussed joint connection system)
- Do not need to be assembled in a specific sequence to function properly, allowing any wafer to be assembled to the housing at any time, improving efficiency of the final harness build
- Efficient removal
 - Single wafers can be removed from the array without disturbing others
 - Single terminals can be removed from a wafer without disturbing ISL features of other terminals within the wafers

▶ Typical Applications

The Delphi Waferized Connection System is well suited for vehicle interior wiring harnesses where mass and bundle size are a primary concern, such as instrument panel applications.

▶ Availability

Please contact Delphi for product samples.

▶ Performance Advantages

Using waferized joint connectors allows for final harness assembly flexibility, build efficiency, quality, and cost-effectiveness. Additionally, Delphi's Waferized Connection System is an enabler for miniaturization of vehicle wiring assemblies.