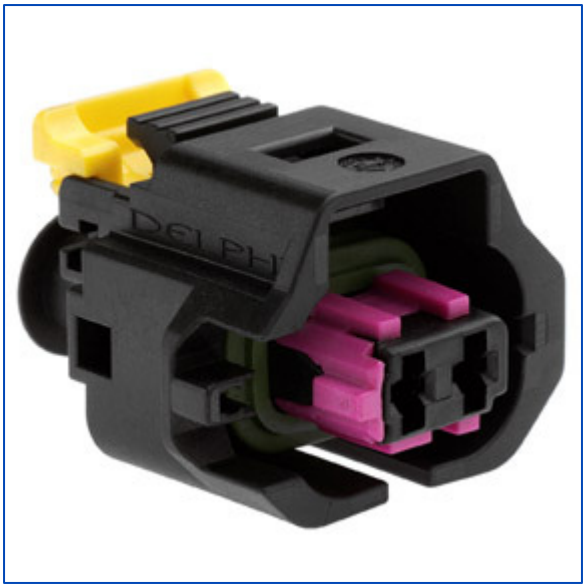
Delphi Active Connection Systems (ACS)

Delphi Active Connection Systems (ACS) are designed to meet high vibration and temperature resistance demands placed on connectors used in modern engines. The active secondary lock, active Connector Position Assurance (CPA), and housing seal enable advanced high-performance in high-temperature and high-vibration environments.

Delphi's first generation Active Connection Systems include high-performance two-, three-, four, and five-way serial systems. A second-generation two-way system with an updated terminal and housing is also now available for enhanced performance.

The Active Connection Systems enable connectors to meet more stringent requirements for vibration and temperature resistance and updated safety-feature demands for engines. No device modifications are required to take advantage of the Delphi Active Connection Systems—the new generation terminal and connector housing fits the same mating parts as previous generations. The advanced ACS design features:



Delphi Active Connection System 2-way Connector

- Combined radial and compression seal to eliminate vibration-related failures by stabilizing the position using radial and vertical forces in the sealing area
- Active Terminal System (ATS) that utilizes a Delphi-unique S-spring element that moves with vibrations to enhance high-vibration performance
- Active secondary lock, based on a modified Delphi ATS 2.8 terminal incorporating a special locking shoulder that prevents the terminal from being pulled out once it is inserted and the secondary lock is closed
  - This secondary lock also serves as the coding system and protects the housing seal
- CPA which remains fixed in its pre-position until the connector is plugged in
  - As the connector is plugged in, the mating part opens the pre-position, which allows the CPA to be closed

Delphi Active Terminal System (ATS) Terminal with Special Locking Feature

Benefits

- Enhanced vibration performance due to new housing seal design and use of ATS terminal
- Active secondary lock
  - Incorporates with the new locking shoulder to prevent the terminal from being pulled out once it is inserted and the secondary lock is closed
    - Can only lock if the terminal is completely in the cavity
  - Provides protection against losing of the housing seal
- Active CPA helps ensure only correct connections are made by preventing closure until the connector is fully plugged in, helping minimize connection errors and to prevent accidental closures during delivery to enhance quality
- Different mechanical color/codings available

Typical Applications

The Delphi Active Connection Systems are ideally suited for use on sensors in the engine compartment area of any size vehicle. The connection systems can be used for in-line or device configurations and can also be used for pigtails when combined with the available male connector side.

In addition to offering the Active Connection Systems, Delphi designs and manufacturers the following sensors:

- Knock sensors
- Cam and crank sensors
- Fluid temperature sensors
- Variable reluctance sensors

Delphi can also supply customer-specific items. Contact Delphi for more information.

Availability

Samples are available. High volume production is scheduled for early 2008.

Performance Data

Vibration performance	25 G (class 2 on engine with acceleration profile)
Connector mating force	<75 N
Connector un-mating force	20 N
Terminal retention force Primary and secondary lock	>120 N
Sealing class	Class 3 (High pressure, pressure vacuum leak, submersion test)
Maximum terminal current carrying capacity	25 A
Mating tabs	2.8 x 0.8
Terminal mating force	0.35 mm^2 - 0.5 mm^2 0.75 mm^2 - 1.0 mm^2 1.5 mm^2- 2.5 mm^2
Terminal crimp range	8-14 N(Sn) 6-12 N(SnAg;Au)
Plating available	Tin, tin-silver alloy, gold
Terminal temperature range	Tin: -40°C to 125°C Tin-silver: -40°C to 150°C Gold: -40°C to 170°C

The performance characteristics above are for reference only and may not account for all the variables that would be present in an actual application.
For detailed product performance information, contact Delphi.

Performance Advantages

The Delphi Active Connection Systems provide advanced high-performance in high-temperature and high-vibration environments. This performance is enabled by an active secondary lock, active CPA, and housing seal.