



STAK50H UNSEALED CONNECTION SYSTEM

To meet rapidly expanding vehicle functionality demands and achieve greater design flexibility, designers of body electronics and safety applications for auto manufacturers can now benefit from a stackable and modular unsealed system that allows for easy connection without custom tooling.

BUSINESS CHALLENGE

With the proliferation of infotainment, safety and body electronics features in vehicles, there is a corresponding constraint being placed on the number of terminals available for devices and modules.

Increasing terminal requirements are forcing designers of body electronics and safety applications to invest in costly custom tooling to maintain design flexibility. As different terminal strategies and designs are employed, circuit connectors for various applications are purchased from multiple sources, adding to the complexity of the end design of the connector interface. This leads to mismatching and faulty connections and a rise in the number of quality complaints. Custom multi-bay configurations also require extensive assembly and validation time, slowing production lead times and adding to labor costs.

To achieve greater design flexibility without custom tooling, a need existed in the marketplace for a modular connector system that would meet industry standard automotive footprints based on the widely accepted 0.50mm, 1.20mm and 2.80mm terminal sizes.

SOLUTION

Leveraging industry-approved terminal design, Molex developed the first through-hole, single- to multi-bay hybrid connector system designed to deliver both signal and Ethernet connectivity through one low footprint.

The stAK50h Unsealed Connection System features standard USCAR color-coded housings to support visual polarization and ease assembly of connector systems. A Connector Position Assurance (CPA) latching feature ensures proper connector mating and protects against accidental disengagement of male and female connectors, leading to fewer quality issues and improved assembly production.

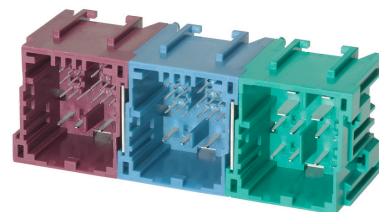
The stackable and modular header design eliminates custom tooling and dramatically reduces the time needed for engineering and validation of multi-bay configurations.

The stAK50h offering ranges from 12- to 32-circuit receptacles, which can be used in applications from low-current signal (5.0A) to high-power (30.0A). By working with a one-stop-solution supplier, customers also stand to benefit in the form of minimized administrative costs, easier ordering and fewer issues with coordination efforts.

KEY BENEFITS

The stAK50h Connection System enables faster design changes, eases assembly and provides for greater design flexibility.

- Stackable design and color coding eliminates polarization issues
- Compliant to USCAR-2 and global automotive OEM standards
- Latching feature ensures fewer quality issues and improved assembly production
- PCB stand-offs molded into header housings provide additional trace-routing



stAK50h Receptacles and Headers





Features and Advantages

Multiple terminals for design flexibility

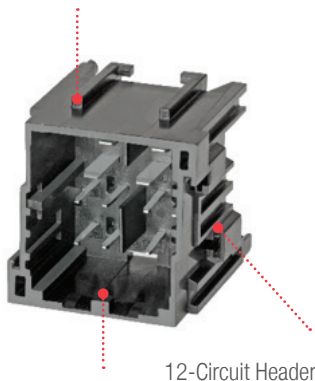
Support a wide range from low-current signal (5.0A) to high-current power (30.0A) applications

Compliant to USCAR-2 and global

Automotive OEM standards. Enables faster time-to-market

PCB stand-offs molded into header housings

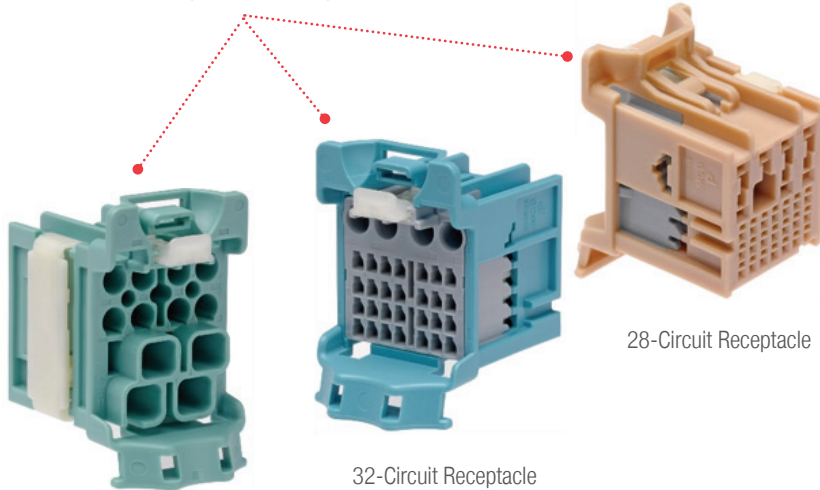
Provide additional trace-routing. PCB space under the headers



12-Circuit Header

Standard USCAR color-coded housings

Support visual polarization. Expedite assembly of connector systems



12-Circuit Receptacle

32-Circuit Receptacle

28-Circuit Receptacle

Stackable and modular header design

Eliminates costly custom tooling, engineering and validation time needed for multi-bay configurations

PCB-alignment posts for mating headers

Ensure proper terminal alignment via-holes of the PCB during assembly. Provide robust PCB retention

Applications

Automotive

Comfort, Infotainment and Driver Assist
Body Electronics
Safety/Chassis
In-Vehicle Networking

Commercial Vehicles

Interior Electronic Modules
Body Electronic Modules



Car Navigation Systems



Power Seat Modules



Car Infotainment System

Specifications

REFERENCE INFORMATION

Configuration: Wire-to-Board
Mates With: TAK50 terminals
Terminal Used: 0.50mm, 1.20mm, 2.80mm
Designed In: Millimeters
RoHS: Yes
Halogen Free: Yes
Glow Wire Compliant: No
USCAR-2 Compliant: Yes
GMW3191 Compliant: Yes

ELECTRICAL

Current (max.): 5.0A for 0.50mm contacts
12.0A for 1.20mm contacts
30.0A for 2.80mm contacts

PHYSICAL

Pitch: 2.00mm min, 3.50mm max
Gauge: 10 to 26 AWG
Housing: USCAR color-coded
Contact: 0.50mm, 1.20mm, 2.80mm
Operating Temperature: -40 to +85°C

Ordering Information

Order No.	Description
205081	stAK50H Assembly Receptacle 12WAY
205082	stAK50H Assembly Receptacle 25WAY
205083	stAK50H Assembly Receptacle 28WAY
205084	stAK50H Assembly Receptacle 32WAY
205161	stAK50H Assembly Receptacle 27 WAY

To learn more www.molex.com/link/stak50h.html

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