

HSAutoLink C Interconnect System >

The HSAutoLink C system is ideal for automotive applications requiring compact, reliable, and high-performance power and data connectivity. HSAutoLink C connectors use the Molex-designed Type C interface released to USCAR, delivering combined-system data rates up to 40Gbps and up to 240W of power in a miniaturized and robust form factor. This system meets USB 3.2 Gen 2x2 and DisplayPort specifications and is designed to support LVDS* and Ethernet* in single- and multi-cable exits. Available sealed versions are ruggedized for harsh environments subject to water or dust ingress.



ADVANTAGES AND FEATURES

Enables use in harsh automotive environments

Connector position assurance uses a positive lock to ensure reliable connectivity in applications subject to shock or vibration forces.

Delivers reliable high-speed data connectivity

Supporting data rates up to a combined 40Gbps, the connector features a fully shielded design to enhance signal integrity and reduce interference.

Reduces package size and space on the PCB

The high-density, 24-pin design supports miniaturization and design flexibility, enabling the consolidation of multiple applications into a compact space on the board.

USCAR Interface	Type C, 999-U-USB-Z02 and 999-S-USB-Z02
Validation Standard	USCAR 2, GMW3191
Data Protocols	USB 2.0 and USB 3.2 Gen 2x2, DisplayPort, LVDS*, FD Link III and IV, GMSL 2 and 3, 1000Base-T1, NGBase-T1, PCIe*
Data Rate	Up to 40Gbps
Voltage	Up to 48V
Circuits	24
Operating Temperatures	-40 to +105°C

Provides hybrid power and data connectivity

Power is available in the same form factor as high-speed data connectivity, supporting a range of advanced applications.

Enhances design flexibility

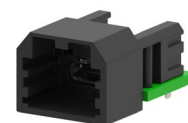
Multiple cable configurations, header configurations and pinout options simplify design work and allow the connector to meet specific PCB design requirements.



Five-circuit USCAR 30 connector compared with 24-circuit HSAutoLink C connector (header design is for reference only)



Unsealed Connector



Unsealed Header



Sealed Connector



Sealed Header

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MARKETS AND APPLICATIONS

Automotive

Consumer charging ports
Diagnostics systems
High-resolution displays
Infotainment systems
Telematics systems
Zone-to-zone communication networks

Agricultural Machinery

Consumer charging ports
Diagnostics systems
High-resolution displays
Telematics systems
Water-resistant modules

Networking

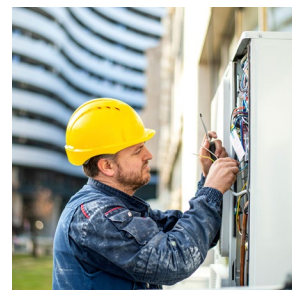
Data storage and transfer devices



Infotainment Systems



High-Resolution Displays



Data Storage and Transfer Devices

PRELIMINARY SPECIFICATIONS

Reference Information

Designed in: Millimeters
RoHS: Yes
Halogen: Low halogen
USCAR Interface: Type C, 999-U-USB-Z02
and 999-S-USB-Z02
Flammability Rating: UL 94 HB
Seal Rating: S3 (GMW3191)
Validation: USCAR 2, GMW3191
Data Protocols: USB 2.0 and USB 3.2 Gen 2x2,
DisplayPort, LVDS,* FD Link III and IV, GMSL 2
and 3, 1000Base-T1, NGBase-T1, PCIe*

Electrical

Data Rate: Up to 40Gbps
Voltage (max.): 48V
Current (max.): 1.25A per terminal
Connector Impedance: 85 to 100 Ohms \pm 5 Ohms
Contact Resistance: 40 milliohms
Dielectric Withstanding Voltage: 100V AC
Insulation Resistance (min.): 100 Megohms

*Pending validation

Mechanical

Circuit Count: 24
Insertion Force to PCB: N/A
Mating Force: 45N (max.)
Unmating Force: 120N (min.)
Durability (min.):
Connector—25 cycles
Terminal system—10,000 cycles

Physical

Housing: PBT-GF20 (unsealed), PBT-I-GF30 (sealed)
Cable Exit Directions: 45, 90 or 180 degrees
Contact: High-performance copper alloy
Terminal Plating:
Contact Area—0.15 μ m gold (min.)
Solder Tail Area—2 μ m tin (min.)
Shield Plating: 1.25 μ m nickel overall (min.)
Operating Temperatures: -40 to +105°C

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