

INTRODUCTION TO BACKSHELLS

Backshells provide mechanical protection to the connectors, especially the point where the wires exit the connector. Making those backshells out of metal also provides EMC/RFI shielding. By adding a metal braid around the outside of the cable assembly and attaching it to the rear ends of the backshells give full 360° EMC shielding across the whole cable assembly, and added wear resistance at any location on the cable harness. Put metal backshells on the mating PCB or panel mounted connectors, and you've got full end-to-end shielding.

THE HARWIN BACKSHELL RANGE

Harwin supplies a comprehensive range of backshells with a rugged aluminium alloy construction and electroless nickel plating. The aluminium gives a strong yet lightweight protective covering, with good shielding properties from its high conductivity, and excellent strength-to-weight ratio. The nickel coating provides corrosion resistance (which can be a weakness of uncoated aluminium).

Cable and board/panel mount backshells are available for all major HRi product ranges. All metal backshells meet the operating temperatures of the applicable product family. Some options can be added later in the design process, even after complete assemblies have been manufactured.

Features & Benefits

- Complete coverage of cable connectors and the cable exit from the rear of the connector
- Adding braid covers the full cable assembly
- Adding backshells on the board or panel mounted connectors gives complete end-to-end shielding
- Great for mechanical robustness – prevents wear and tear on the connectors and cable bundle from any external impacts and fretting/rubbing
- Added strength for maintenance cycles

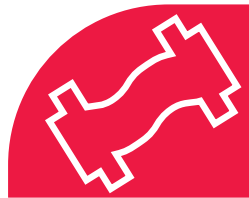


CHARACTERISTICS OF BACKSHELLS



CABLE SHIELDING

Cables wind through many different areas of a piece of equipment. Some areas might be transmitting signals that you don't want to interfere with the signals in the cable bundle. Some areas might be prone to signals that come from within the cable bundle. So you're protecting both the cables and the surrounding areas from errant signals.



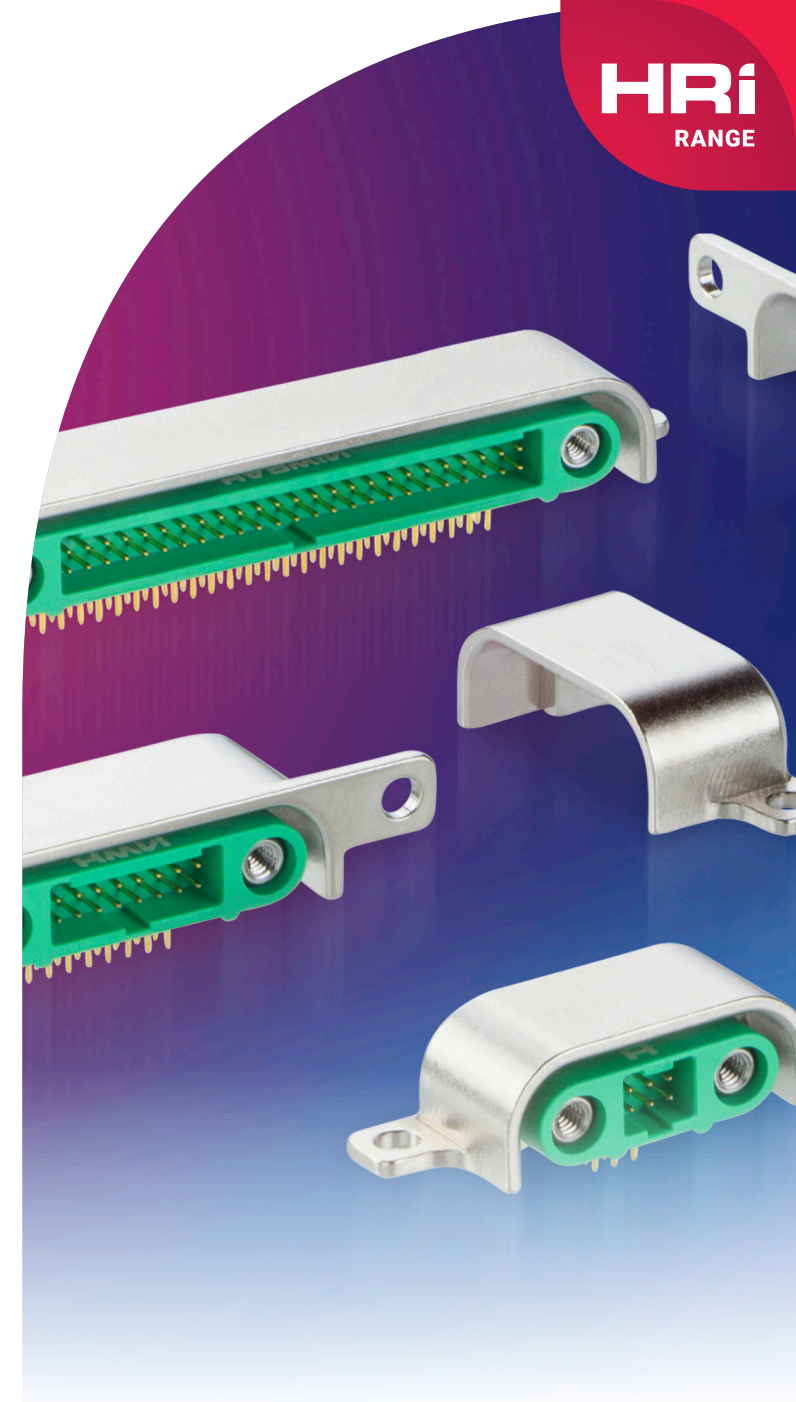
END-TO-END SHIELDING

By adding shielding to the mating connectors at both ends of the cable harness, full end-to-end shielding is achieved. Use with PCB ground planes or grounding attachments to the cable braid for improved shielding effectiveness.

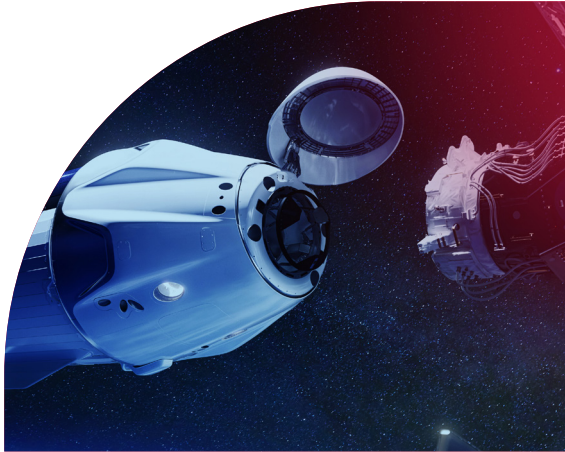


MECHANICAL ROBUSTNESS

Vibration causes cables to rub and fret against areas of chassis/airframes in vibration environments, or even against the cable ties holding the harness in place. Adding a hard-wearing metal braid, correctly anchored either end to the metal backshells, helps reduce or eliminate the risk of wiring short-circuits from exposed conductors.



APPLICATIONS



SPACE

- Battery/Power management
- Antenna/Transceiver connections
- Payload systems
- Thruster and Attitude control



AVIATION AND UAVs

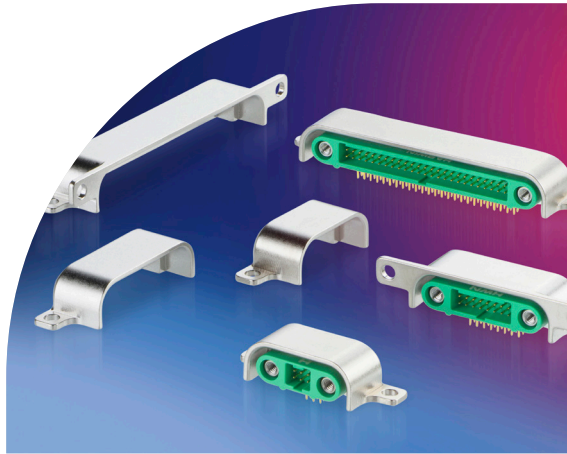
- Flight surface control harnesses
- Battery/Power management
- Vision system controls
- Seat rest controls



ROBOTICS

- Demanding industrial robotics

PRODUCTS WITH METAL BACKSHELLS



- Two-piece cable backshells for male and female connectors
- Mating backshells for PCB male or female throughboard connectors or cable male or female connectors for front panel mounting



- Single-piece cable backshells for female connectors
- Mating backshells for PCB male throughboard connectors, horizontal male SMT connectors or cable male connectors for front panel mounting



- Two-piece cable backshells for male and female connectors
- Mating backshells for PCB male throughboard connectors, or cable male or female connectors for front panel mounting
- Micro-band ties, additional fixing accessories and tooling also available

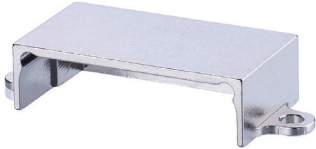




BACKSHELL RANGE - GECKO

				
G125-960##02	G125-964##00	G125-964##F1	G125-970##02	G125-971##02
Use with:	Use with:	Use with:	Use with:	Use with:
G125-224##96F3 female cable panel mount	G125-324##96M1 male cable	G125-224##9600 female cable	G125-MH1##05M4P male horizontal THT	G125-MH1##05M4P male horizontal THT
G125-FV1##05F3P female vertical THT				
G125-324##96M2 male cable panel mount		G125-324##9600 male cable		
G125-MV1##05M2P male vertical THT				

= total number of signal contacts: 06, 10, 12, 16, 20, 26, 34, 50




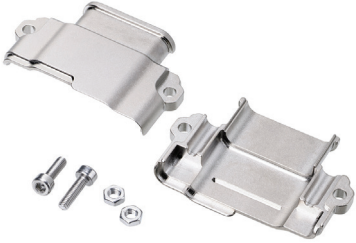
BACKSHELL RANGE - DATAMATE

				
M80-904##02	M80-905##02	M80-906##02	M80-945##02	M80-946##02
Use with:	Use with:	Use with:	Use with:	Use with:
M80-540##42 male horizontal THT	M80-540##42 male horizontal THT	M80-510##42 male vertical THT	M80-470##05 female cable	M80-470##05 female cable
		M80-511##42 male vertical THT		
M82-542##42 male horizontal SMT	M82-542##42 male horizontal SMT	M80-5C1##05M2/3 male cable panel mount	M80-471##05 female cable	M80-471##05 female cable
		M80-5D1##05M2/3 male cable panel mount		

= total number of signal contacts: 04 to 50 (even numbers)

 **Datamate**[®]

BACKSHELL RANGE - KONA

	
KA1-950##02	KA1-970##00
Use with:	Use with:
KA1-201##98F2 female cable panel mount	KA1-201##98F1 female cable
KA1-MV1##05M1 male vertical THT	
KA1-MV2##05M1 male vertical THT	KA1-301##98M5 male cable
KA1-301##98M1 male cable panel mount	

= total number of contacts: 02, 03, 04



PREVIOUS BLOG ARTICLES: FOR ADDITIONAL INFORMATION

■ Metal Backshells with Built-In Shielding Ensure Ongoing Electrical & Mechanical Integrity



■ Compact High-Power Harwin Connector Series Benefits from 360° EMC Backshells



■ Harwin Adds More Shielding Options for Gecko Hi-Rel Connectors

