



Hirose solutions
Industrial Internet of Things

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Hirose Industrial IoT

Hirose connectors provide functionality and performance to satisfy the growing demand for smaller, highly innovative connectors that provide superior connectivity. Such innovations include connectors for the high frequency and high transmission rates needed to optimise the latest 'connective technology' protocols used for IIoT driven Industrial and Smart Home applications.

U.FL SERIES



[MORE INFORMATION](#)

Hirose's U.FL series is an ultra-miniature coaxial connector range featuring superior performance characteristics for wireless communication modules. Though compact and lightweight, the U.FL can handle high transmission speeds of up to 6GHz.

FEATURES

- Characteristic impedance: 50Ω
- Voltage standing wave ratio frequency range: 1.3 or less (DC to 6GHz)
- Mated height: 1.9, 2.3, 2.4
- Temperature: -40°C to +90°C
- Mating cycles: 30

APPLICATIONS

- Medical
- CNC/PLC
- EV (Electric Vehicle) charger
- Smart meter
- Security camera
- IoT module

DF51K WIRE-TO-BOARD CONNECTORS FOR STRENGTH AND DURABILITY



[MORE INFORMATION](#)

The DF51K series of robust wire-to-board connectors has been designed for applications requiring more strength and durability such as industrial machinery, medical devices, smart meters, industrial robots, and many others.

DF51K connectors feature a centre lock design that allows the connectors to be placed side-by-side to save space on the board. The mating operation is user-friendly and a clear tactile click confirms secure engagement and a reliable connection.

The DF51K series is part of the SignalBee product family which consists of compact and high performance connectors.

FEATURES

- Number of contacts: 1 row: 2 to 6/2 rows: 4 to 30
- Contact pitch: 2mm
- Current rating: 2A (max.)
- Voltage rating: AC-DC 250V
- Temperature: -55°C to +105°C
- Cable size: AWG 22-30
- Accepts resin sealing
- UL/C-UL Certified

APPLICATIONS

- Office equipment
- Industrial machinery
- Industrial robots
- Amusements equipment
- Medical equipment

FH72 SERIES



MORE INFORMATION 

The innovative and compact FH72 has been designed with a small pitch of 0.3mm and is ideal for smaller applications. Including a unique one action lock and high FPC retention force, the FPC can be inserted into the connector without opening the actuator. This can be done with one hand or by automated machinery to save valuable assembly time and reduce mating failure.

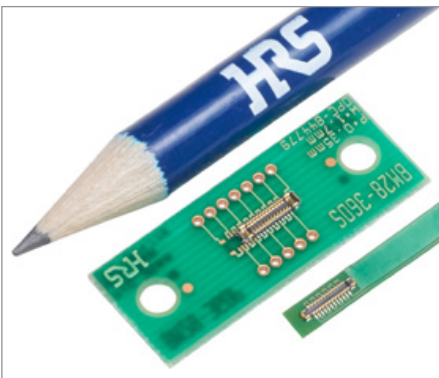
FEATURES

- Number of contacts: 11
- Contact pitch: 0.3mm
- Height: 0.9mm
- Contact position: top
- Rated current: 0.2A
- Rated voltage: AC-DC 30V
- Temperature: -55°C to +85°C
- Mating cycles: 10

APPLICATIONS

- Medical
- FA camera
- Drone
- IoT module

BM28 SERIES



MORE INFORMATION 

Hirose introduced the BM28 series of connectors to provide a robust, high power and space-saving connectivity solution for miniaturised applications requiring USB 3.1 connectivity.

The BM28 range of connectors consists of headers and receptacles which provide a connection between a Flat Printed Circuit (FPC) and a board. The connector features a hybrid design which includes signal contacts rated at 0.3A (for 40 positions and under)/0.2A (over 40 positions) and power contacts rated at 5A.

When mated, the BM28's parallel stack height is only 0.6mm with a narrow depth of 1.7mm, making this one of the smallest hybrid FPC-to-board connectors in the world. Although the connector's dimensions are compact, performance is not compromised, and the connectors are able to offer highly reliable mechanical connection. This is due to the provision of unique 2-point contacts and a long effective mating length of 0.13mm (signal) or 0.10mm (power).

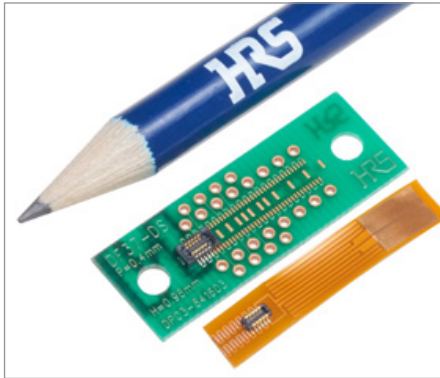
FEATURES

- Number of contacts: 6, 10, 16, 18, 20, 24, 30, 34, 36, 40, 44, 46, 50, 58, 60 signal/2 power
- Contact pitch: 0.35mm
- Current rating: 5A power/0.3A signal (for 40 positions and under), 0.2A signal (over 40 positions)
- Stack height: 0.6mm
- Voltage rating: 30V
- Mating cycles: 10
- Halogen-free

APPLICATIONS

- Point-of-sale equipment
- Medical devices
- Wearable devices
- Drones
- Small sensors
- IoT modules
- Other small portable devices

DF37 SERIES BOARD-TO-BOARD/BOARD-TO-FPC CONNECTOR



[MORE INFORMATION](#) 

With a mated height of 0.98mm and 1.5mm, width of 2.98mm and length of 8.22mm (30 positions) Hirose's DF37 series is one of the smallest in its class. Whilst providing a space saving and a shock resistant design, the unique 2-point contact configuration and effective mating length of 0.25mm provides a highly reliable connection with a tactile mating confirmation.

FEATURES

- Number of contacts: 10, 16, 20, 24, 30, 34, 40, 44, 50, 60, 70, 74
- Contact pitch: 0.4mm
- Mated height: 0.98mm, 1.5mm
- Solder technology: SMT
- Rated current: 0.3A
- Rated voltage: AC-DC 30V
- Temperature: -35°C to +85°C
- Mating cycles: 10

APPLICATIONS

- Medical
- IoT module

CX SERIES USB TYPE-C CONNECTORS



[MORE INFORMATION](#) 

Hirose developed USB Type-C receptacles and plugs as a standard high-speed transmission interface solution for consumer, industrial machinery and automotive applications.

The CX series is a USB 3.1 Gen2 connector. 10Gbps high-speed transmission can be achieved that transfers data twice as fast compared to a conventional 5Gbps USB 3.0 connector.

The receptacle feature a hybrid design and utilises both surface-mount and through-hole soldering to improve mounting accuracy and minimise the board mounting space needed. The design also facilitates automated optical inspection and eases reworking of the solder terminal joints with a visible lead design.

The slim plug is reversible and can be simply inserted in any direction as the user-friendly receptacle features a symmetrical mating face to prevent incorrect insertion.

A tactile click can be felt when mating the connectors to ensure correct engagement and prevent incomplete mating.

FEATURES

- Number of contacts: 16, 24
- Pitch: 0.5mm
- Current rating: 1.25A (Pin no. A1, A4, A9, A12, B1, B4, B9, B12) 0.25A (others)
- Voltage rating: AC 20V
- Transmission speed: 10Gbps
- Mating cycles: 10,000

APPLICATIONS

- FA camera
- FA robot
- Security camera
- Drone
- IoT module

DF57H SERIES 1.2MM PITCH LOW PROFILE WIRE-TO-BOARD CONNECTORS



[MORE INFORMATION](#)

The DF57H series has been designed with space saving in mind; the two position version, for example, only occupies 18mm² approximate board space. The lowest height profile connector in the range is 1.4mm. Power performance is not compromised by the small size - an impressive 3A (amps) maximum current rating per contact can be achieved using the 2-position connector with AWG 26 wire.

Furthermore, the DF57H series is part of the SnapBee product family. The SnapBee family features a wide range of wire-to-board connectors to provide power for small equipment.

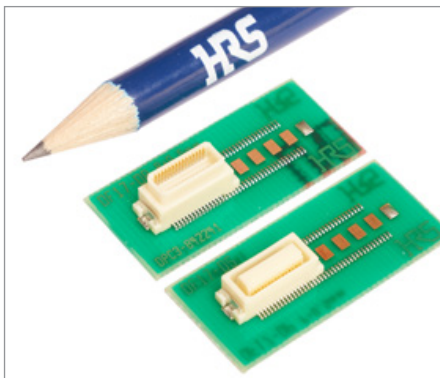
FEATURES

- Number of contacts: 2 to 6
- Contact pitch: 1.2mm (2 position, 2.4mm pitch option available)
- Rated current: 3A (2 pos. with 26AWG cable)
- Rated voltage: AC-DC 50V
- Cable size: AWG 26 to 34
- Mated height: 1.4mm or 1.6mm
- Mating cycles: 30
- UL/CSA certified

APPLICATIONS

- Display and sensor connections
 - > IoT modules
- Servo motors
- Smart meters
- LED lightings
- IoT modules

DF17 SERIES 4-8MM STACK HEIGHT BOARD-TO-BOARD CONNECTORS



[MORE INFORMATION](#)

The Hirose DF17 series of board-to-board connectors features a robust contact structure with enhanced shock-proof performance. Differences between stack heights and contact positions, and the option of metal fittings, give design flexibility for various applications.

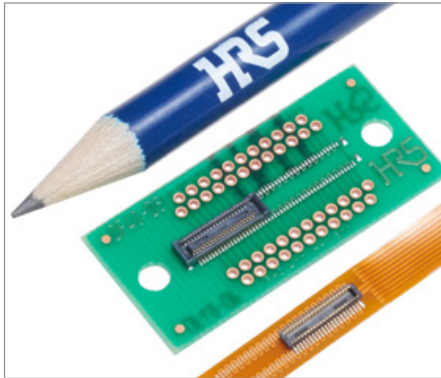
FEATURES

- Contact pitch: 0.5mm
- Stack height: 4mm to 8mm
- Rated current: 0.3A
- Rated voltage: AC 50V
- Temperature range: -35°C to + 85°C
- Number of contacts: 20, 26, 30, 40, 50, 60, 70, 80
- Mating cycles: 50

APPLICATIONS

- Display and sensor connections
 - > IoT modules
- FA sensors
- Security cameras
- Drones
- IoT modules

DF40 SERIES 0.4MM PITCH FPC-TO-BOARD CONNECTORS



[MORE INFORMATION](#) 

The Hirose DF40 is a series of board-to-board/board-to-FPC connectors. The product ranges in this series are all designed for 5Gbps high-speed transmission having differences between shielding, locking mechanisms and heat resistance giving design flexibility for various USB 2.0, USB 3.0, MIPI, SATA, PCIe applications.

FEATURES

- Ideal for wearable, medical and small portable devices
- Can handle 10Gbps high-speed transmission and supports USB3.2 Gen.2 standards
- The housing incorporates robust shock absorbing ribs to prevent damage
- Suitable for applications requiring drop impact resistance
- A clear tactile click can be felt when mating to confirm correct engagement and secure connections
- A minimised depth of only 3.38mm reduces the required mounting area,
- Wide stacking heights are available from 1.5mm to 4mm allowing design flexibility
- Number of contacts: 10, 12, 20, 24, 30, 34, 40, 44, 50, 60, 70, 80, 90, 100

APPLICATIONS

- FA sensors
- FA cameras
- Security cameras
- Drones
- IoT modules
- Medical

DF52 SERIES 0.8MM PITCH ROBUST WIRE-TO-BOARD CONNECTORS



[MORE INFORMATION](#) 

The DF52 series of robust wire-to-board connectors is designed for applications requiring more strength and durability. The mated height profile is minimised to 1.75mm and the depth to 4.1mm to reduce the space needed on the board.

Highly reliable box shape crimp contacts are utilised to prevent deformation and provide strong resistance against breakage, snaring and rough operation.

The DF52 series is part of the SignalBee product family. SignalBee consists of compact and high performance wire-to-board and wire-to-wire connectors that are designed for the requirements of industrial applications.

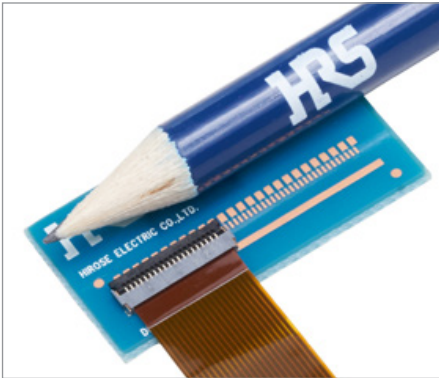
FEATURES

- Number of contacts: 2, 3, 4, 5, 6, 8, 10, 12, 14, 15, 16, 17, 20
- Contact pitch: 0.8mm
- Rated current: 2.5A (max.)
- Rated voltage: AC-DC 100V
- Cable size: AWG 28 to 32
- Halogen-free (IEC61249-2-21)

APPLICATIONS

- Sensor connections
 - > IoT modules
- Servo motors
- Security cameras

FH34S SERIES FLEXIBLE PRINTED CIRCUIT/FLEXIBLE FLAT CABLE CONNECTORS



[MORE INFORMATION](#) 

The FH34 is a series of FFC/FPC that feature an innovative back-flip actuator which is situated at the back of the housing instead of the front allowing it to be in the open position when delivered to reduce cable assembly time. Furthermore it increases the retention force of the FFC/FPC.

Space is saved on the board due to the compact design. The short mounting depth of 3.8mm is one of the shortest in the world for a back-flip connector. The height profile is low, only 1mm above the board. In addition, the fully enclosed moulded housing ensures contacts are not exposed on the connector underside, which frees even more space for board designers to run conductive traces underneath the connector.

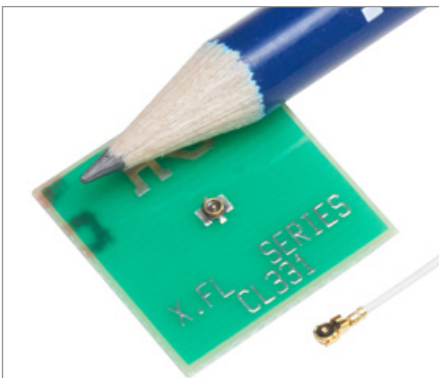
FEATURES

- Number of contacts: 4, 5, 6, 7, 8, 9, 10, 11, 12, 14, 16, 18, 20, 22, 24, 26, 30, 32, 34, 40, 45, 50
- Contact pitch: 0.5mm
- Rated current: 0.5A max.
- Rated voltage: AC-DC 50V
- Temperature: -55°C to +105°C
- Mating cycles: 20
- Back flip lock
- Top and bottom contact

APPLICATIONS

- Drones
- IoT modules

X.FL ULTRA-MINIATURE LIGHTWEIGHT PLUG CABLE ASSEMBLIES AND RECEPTACLES



[MORE INFORMATION](#) 

The X.FL series is an ultra-miniature, space saving coaxial connector range featuring superior performance characteristics for wireless communication modules.

Although compact and lightweight, the X.FL series can handle high transmission speeds of up to 12GHz, which is suitable for antenna connections in LAN, GPS and Bluetooth, and wireless communication IoT module applications.

FEATURES

- Number of contacts: 1
- V.S.W.R frequency range: DC to 12GHz
- Cable diameter: 0.5mm, 0.64mm, 0.81mm, 1.13mm
- Mated height: 0.94mm, 1.2mm
- Mating cycles: 20

APPLICATIONS

- Antenna connections
 - > LAN, GPS and Bluetooth
- Wireless communication IoT modules
- Drones

Have a question?

Get in touch with our team in your local language at avnet-abacus.eu/ask-an-expert

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