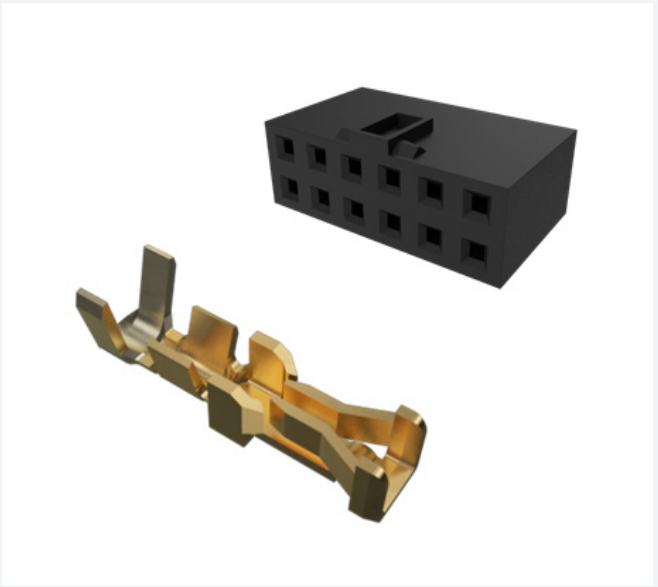
Minitek® Crimp–to–Wire

HOUSINGS AND CONTACTS

Minitek® is Amphenol FCI's brand for board–to–board and cable/wire–to–board connectors in 2.00mm (0.079in.) pitch. It is a fully modular system enabling all types of connections between PCBs, wires and flat cables. Its 2mm spacing allows up to 38% space saving compared to traditional modular systems.

Amphenol FCI is the leading supplier of this type of modular system and continues to grow and expand it.



TARGET MARKETS

FEATURES

- Dual–beam contact design for highly reliable electrical performance

BENEFITS

- Latching key assures proper alignment and friction retention

TECHNICAL INFORMATION

HOUSING AND CONTACTS

MATERIAL

- Housing: Black thermoplastic
- Flammability Rating: UL94V-0
- Contact: Phosphor-bronze
- Plating: Gold or tin over 1.27µm (50µin.) nickel

MECHANICAL PERFORMANCE

- Mating Cycles (Durability): 100
- Contact Retention to Housing: 7.83N (800gf) min.
- Mating Force per Contact: 1.77N (180gf) max.
- Unmating Force per Contact: 0.20N (20gf) min.

ELECTRICAL PERFORMANCE

- Current Rating: 2A continuous
- Insulation Resistance: 1 x 105MΩ min.
- Contact Resistance: 20mΩ max.
- Dielectric Withstanding Voltage: 650V
- Voltage Rating: 200V

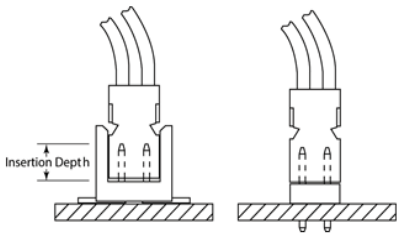
ENVIRONMENTAL

- Operating Temperature Range: -40°C to +125°C

APPROVALS & CERTIFICATION

- This product is RoHS compatible according to the European Union Directive 2002/95/IEC

TYPICAL APPLICATIONS



Description	Part Numbers
CTW Contact AWG 22-24	10044403
CTW Contact AWG 26-30	77138
CTW Housing with keying, Single Row	90312
CTW Housing with keying, Double Row	90311

SPECIFICATIONS

- File no. E66906
- File no. LR46923
- Product drawing:
  - 77138 or 77139 – Contact
  - 69307, 90311 – Housing
- Product specification: 110-036
- Application specification: 100-006, TA-959

PACKAGING

- Reels – Contacts
- Bags – Housings

PROCESSING INFORMATION

- Compatible with wave, vapor-phase, and IR re-flow soldering processes

INSERTION DEPTH

- 2.40mm min. to 3.30mm max. [provides .381mm wipe]
- 3.63mm min. to 4.00mm max. [provides .381mm wipe in housing]

TARGET MARKETS/APPLICATIONS

Electronic Control Systems

Communications

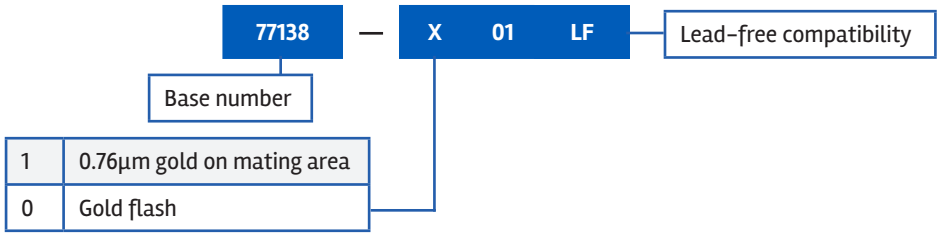
Servers
Communication Equipment

Industrial Automation
Instrumentation

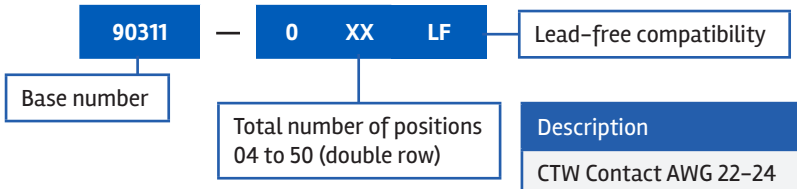
Vending Machines

PART NUMBER SELECTOR CTW HOUSING AND CONTACTS

CONTACT



HOUSING



Description	Part Numbers
CTW Contact AWG 22–24	10044403
CTW Contact AWG 26–30	77138
CTW Housing with keying, Single Row	90312
CTW Housing with keying, Double Row	90311

Minitek® Active Latch Housing

Minitek® is Amphenol FCI's brand for board-to-board and cable/wire-to-board connectors in 2.00mm (0.079in.) pitch. It is a fully modular system enabling all types of connections between PCBs, wires and flat cables. Its 2mm spacing allows up to 38% space saving compared to traditional modular systems.

Amphenol FCI is the leading supplier of this type of modular system and continues to grow anf expand it. We are now adding a new active latch housing and POKA YOKE feature to active latch for housing for wire-to-board applications The latch ensures a secure mechanical connection in applications with high extraction forces or vibration. Unlike other systems on the market, tthe active latch housing mates with the standard headers from the Minitek® system. This ensures full modularity and interchangeability throughout the system.

The active latch housing is made with high temperature black plastic material which is able to withstand temperature up to 125°C. It is available in 15 versions from 2 x 3 to 2 x 17 positions.

TARGET MARKETS

FEATURES

- The POKA YOKE feature offered by new shape of header ensures right mating

BENEFITS

- No pre-opening needed for mating

TECHNICAL INFORMATION

MATERIALS

- Housing: Polyamide
- Color: Black
- Flammability Rating: UL94V-0

MECHANICAL PERFORMANCE

- Latching Retention Force: 15N min. (for 2x3 & 2x4)
- Latching Retention Force 25N min. (for 2x5 & 2x25)

ELECTRICAL PERFORMANCE

- Insulation Resistance: 1000MΩ min.
- Dielectric Withstanding Voltage: 500V

ENVIRONMENTAL

- Operating Temperature Range: -55°C to +125°C

APPROVALS & CERTIFICATION

- This product is RoHS compatible according to the European Union Directive 2002/95/IEC

Descrption	Part Numbers
CTW Active Latch Housing, Double Row	10118940

SPECIFICATIONS

- File no. E66906
- File no. LR46923
- Product Drawing: By 8-digit base part number
- Product Specification: GS-12-415

PROCESSING INFORMATION

- Compatible with wave, vapor-phase, and IR re-flow soldering processes

INSERTION DEPTH

- 2.40mm min. to 3.30mm max. [provides .381mm wipe]
- 3.63mm min. to 4.00mm max. [provides .381mm wipe in housing]

TARGET MARKETS/APPLICATIONS


Electronic Control Systems

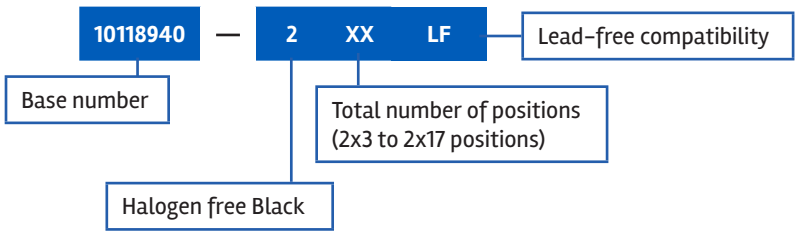

Communications


Servers
Communication Equipment


Industrial Automation
Instrumentation


Vending Machines

PART NUMBER SELECTOR ACTIVE LATCH HOUSING



Minitek® Eject Latch Header

CABLE-TO-BOARD CONNECTIONS

Minitek® is Amphenol FCI's brand for board-to-board and cable/wire-to-board connectors in 2.00mm (0.079µin.) pitch. Amphenol FCI is the leading supplier of this type of modular system and continues to grow and expand it. A new eject latch header is now being added to this series. This header securely latches the receptacle in place and also enables simple ejection. Four walled shielding protects pins in unmated condition.

To prevent mismating, the eject latch header is equipped with polarization keys. Recessed pins ensure proper alignment, eliminate damage during mating, and maintain high pin retention to the housing during repeated mating cycles.

The eject latch header has a very compact product design. It is made from thermoplastic compatible with reflow applications. The latches are specifically designed to minimize space requirements on the printed circuit board. The part mates with the Minitek® IDC receptacle.

TARGET MARKETS

FEATURES

- Secure latching of cable connector
- Works with IDC connectors with or without strain relief

BENEFITS

- Easy ejection when required
- Low profile

TECHNICAL INFORMATION

MATERIALS

- Housing: Body, cream-colored LCP, Latch black PA
- Flammability Rating: UL94V-0
- Pin: Phosphor-bronze
- Plating: Gold/GXT over 1.27µm (50µin.) nickel

MECHANICAL PERFORMANCE

- Latching retention force: 30 N min.

ELECTRICAL PERFORMANCE

- Current Rating: 2A continuous
- Insulation Resistance: 1 x 105MΩ min.
- Contact Resistance: 25mΩ max.
- Dielectric Withstanding Voltage: 650V
- Voltage Rating: 200V

ENVIRONMENTAL

- Latching Retention Force: 30 N min.

APPROVALS & CERTIFICATION

- This product is RoHS compatible according to the European Union Directive 2002/95/IEC

SPECIFICATIONS

- File no. E66906
- File no. LR46923
- Product Drawing: By 8-digit part number
- Product Specification: GS-12-469

PACKAGING

- Standard: Tubes

PROCESSING INFORMATION

- Compatible with wave, vapor-phase, and IR ref-low soldering processes

TARGET MARKETS/APPLICATIONS


Electronic Control Systems


Communications


Servers
Communication Equipment

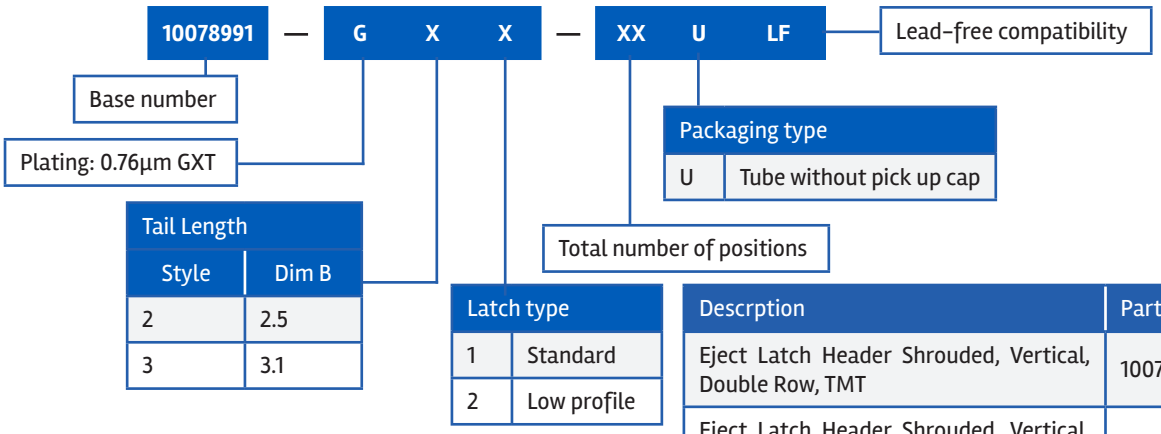

Industrial Automation
Instrumentation


Vending Machines

PART NUMBERS

Descrption	Part Numbers
Eject Latch Header Shrouded, Vertical, Double Row, TMT	10078991
Eject Latch Header Shrouded, Vertical, Double Row, PIP	10078993
Eject Latch Header Shrouded, Vertical, Double Row, SMT	10078995

PART NUMBER SELECTOR EJECT LATCH HEADER



Descrption	Part Numbers
Eject Latch Header Shrouded, Vertical, Double Row, TMT	10078991
Eject Latch Header Shrouded, Vertical, Double Row, PIP	10078993
Eject Latch Header Shrouded, Vertical, Double Row, SMT	10078995

Minitek® Headers

2.00mm pitch

PRODUCTS FOR SOLDER–TO–BOARD APPLICATIONS

Minitek® is Amphenol FCI's brand for board–to–board and wire/cable–to–board connectors in 2.00mm pitch. The Minitek® product range includes PCB Card Connectors, Shrouded and Unshrouded headers and IDC/CTW receptacles.

Amphenol FCI is adding five new series of Minitek® Headers to its product range, dedicated to Pin–in–Paste soldering processes. This brochure gives additional information for the correct use of Minitek® PIP connectors in the application process.

- Easy to operate and strong FFC/FPC retention makes it vibration–proof
- Ensures high solderability and high durability
- Operating temperature range of –55°C to +85°C

TARGET MARKETS

FEATURES	BENEFITS
Modular System	Ensures interchangeable solution for flexible design
2mm pitch available	38% less board space compared with 2.54mm
Lowest co–planarity at 0.1mm	Facilitates automatic placement
0.5mm square drawn wire pin	Provides four smooth mating surfaces
High raw material temperature range	Withstands re–flow soldering process

TECHNICAL INFORMATION

UNSHROUDED/STACKING

MATERIAL

- Housing: High temperature thermoplastic
- Color: Black
- Flammability Rating: UL94V-0
- Pin: Phosphor bronze
- Plating: Gold and tin over 1.27µm nickel

MECHANICAL PERFORMANCE

- Pin Retention: 7N min.

ELECTRICAL PERFORMANCE

- Current Rating: 1A continuous
- Insulation Resistance: 1000WM min.
- Dielectric Withstanding Voltage: 650V

ENVIRONMENTAL

- Operating Temperature Range: -55°C to +125°C

APPROVALS & CERTIFICATION

- RoHS compatible according to the European Union Directive 2002/95/IEC

SPECIFICATIONS

- File Number: E66906
- File Number: LR46923
- Product Drawing: By 8-digit base part number
- Product Specification: DPS-12-011 and GS-12-163
- Application Specification: TA-895
- Re-flow Profile: TA-842

PROCESSING INFORMATION

- Compatible with IR re-flow soldering processes

TARGET MARKETS/APPLICATIONS


Automotive


Communications


Data


Industrial & Instrumentation


Medical

TECHNICAL INFORMATION

SHROUDED

MATERIAL

- Housing: High temperature thermoplastic
- Color: Black
- Flammability Rating: UL94V-0
- Pin: Phosphor bronze
- Plating: Gold and tin over 1.27µm nickel

MECHANICAL PERFORMANCE

- Pin Retention: 7N min.

ELECTRICAL PERFORMANCE

- Current Rating: 2A continuous
- Insulation Resistance: 1000WM min.
- Dielectric Withstanding Voltage: 650V

ENVIRONMENTAL

- Operating Temperature Range: -40°C to +125°C

APPROVALS & CERTIFICATION

- RoHS compatible according to the European Union Directive 2002/95/IEC

SPECIFICATIONS

- File Number: E66906
- File Number: LR46923
- Product Drawing: By 8-digit base part number
- Product Specification: DPS-12-011 and GS-12-163
- Application Specification: TA-896
- Re-flow Profile: TA-842

PROCESSING INFORMATION

- Compatible with IR re-flow soldering processes

TARGET MARKETS/APPLICATIONS


Electronic Control Systems


Communications


Servers
Communication Equipment


Industrial Automation
Instrumentation


Vending Machines

PART NUMBERS

Description	Part Numbers
Unshrouded Header, Vertical, Single Row, TMT / PiP	10138654
Unshrouded Header, Vertical, Double Row, TMT / PiP	57102
Unshrouded Header, Vertical, Double Row, SMT	57202
Unshrouded Stacking Header, Vertical, Double Row, TMT	59112
Unshrouded Stacking Header, Vertical, Double Row, SMT	59202
Unshrouded Header, Right-Angle, Single Row, SMT	10112684
Unshrouded Header, Right-Angle, Double Row, TMT	98423
Unshrouded Header, Right-Angle, Double Row, SMT	10112690
Unshrouded Header, Right-Angle, Double Row, PiP	10072353
Shrouded Header, Right-Angle, Single Row, SMT	95000
Shrouded Header, Right-Angle, Double Row, TMT	98464
Shrouded Header, Vertical, Double Row, TMT	98414
Shrouded Header, Vertical, Double Row, SMT	98424

Minitek® Headers

PIN-IN-PASTE

Pin-in-Paste (PiP) technology allows the use of TMT products in SMT manufacturing processes. The connectors are automatically or manually placed on the board, then soldered in the same operations the SMT components. Despite this, the mechanical strength of the TMT soldering is maintained – still an important requirement for connectors nowadays in many industrial or automotive applications.

CONNECTOR DESIGN

In order to achieve optimum soldering results, Amphenol FCI launches dedicated Pin-in-Paste connectors in the basics+ product range. These connectors are fully adapted to Pin-in-Paste processing in all aspects, including plastic material, housing design, pin length, and packaging.

PLASTIC MATERIAL

Minitek® PIP headers are molded in high temperature thermoplastic and are able to withstand exposure to 260°C peak temperature for 30 seconds maximum in a convection, infra-red or vapour phase re-flow oven.

PIN LENGTH

The connector lead length beyond the bottom of the PCB is shorter than for traditional TMT products. Thus, the risk of pushing out the solder paste when inserting the pin into the PCB hole is very much limited. The solder paste will not stick on the pin tip or even fall off completely, but stays around the pin for free flow during soldering. Amphenol FCI uses a solder tail length of 2 ± 0.2mm for Minitek® Headers for a standard PCB of 1.6mm thickness.

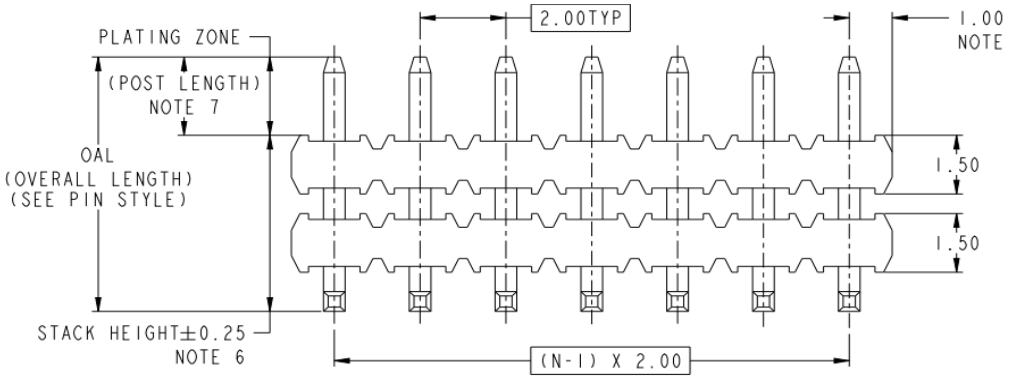
HOUSING DESIGN

Standoffs raise the housing body slightly above the PCB surface and thus allow the molten solder paste to flow freely from its printed position into the board hole and around the pin. The standoffs are correctly positioned for a good solder paste deposit around the pin. Please respect the stencil design guidelines below in order to avoid paste deposit around the standoffs.

PACKAGING

For combining SMT and TMT components not only in the soldering process, but also in the assembly process, Amphenol FCI proposes a choice of pick-and-place packaging for PIP connectors. The most common part numbers are available in tape-on-reel packaging, all others in tube.

SHROUDED



PART NUMBER SELECTOR HEADER

Plating option	
G	0.76µm GXT on contact area
T	2µm tin on contact area
Other plating options available upon request	

Number of positions per row

Color option	
–	Cream
B	Black

Packaging option	
Blank	Standard packaging in polybags
U	Tube available from 06 to 50 pos
A	Tape & Reel with pick up cap

Pin Style	Post Length	Tail Length
04	4.00	2.00
06	4.00	2.50
08	4.00	3.10
10	4.00	3.70

Description	Part Numbers
Unshrouded Header, Vertical, Single Row, TMT / PiP	10138654
Unshrouded Header, Vertical, Double Row, TMT / PiP	57102
Unshrouded Header, Vertical, Double Row, SMT	57202
Unshrouded Stacking Header, Vertical, Double Row, TMT	59112
Unshrouded Stacking Header, Vertical, Double Row, SMT	59202
Unshrouded Header, Right–Angle, Single Row, SMT	10112684
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Shrouded Header, Right–Angle, Single Row, SMT	95000
Shrouded Header, Right–Angle, Double Row, TMT	98464
Shrouded Header, Vertical, Double Row, TMT	98414
Shrouded Header, Vertical, Double Row, SMT	98424

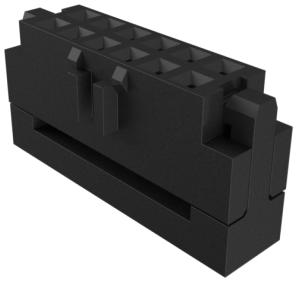
Minitek® IDC Receptacle

BOARD/ WIRE-TO-BOARD CONNECTORS

Minitek® is Amphenol FCI's brand for board-to-board and cable/wire-to-board connectors in 2.00mm (0.079µin.) pitch. Amphenol FCI is the leading supplier of this type of modular system and continues to grow and expand it. A new eject latch header is now being added to this series. This header securely latches the receptacle in place and also enables simple ejection. Four walled shielding protects pins in unmated condition.

To prevent mismating, the eject latch header is equipped with polarization keys. Recessed pins ensure proper alignment, eliminate damage during mating, and maintain high pin retention to the housing during repeated mating cycles.

The eject latch header has a very compact product design. It is made from thermoplastic compatible with re-flow applications. The latches are specifically designed to minimize space requirements on the printed circuit board. The part mates with the Minitek® IDC receptacle.



TARGET MARKETS

FEATURES

- Early entry, single-beam contacts provide long wiping action for reliable electrical contact

BENEFITS

- Center key polarization and friction latch options

TECHNICAL INFORMATION

MATERIALS

- Housing: Black thermoplastic
- Flammability Rating: UL94V-0
- Contact: Phosphor-bronze
- Plating: Gold over 1.27µm (50µin.) nickel

MECHANICAL PERFORMANCE

- Mating Cycles (Durability): 100

ELECTRICAL PERFORMANCE

- Current Rating: 1A continuous
- Insulation Resistance: 1 x 105MΩ min.
- Contact Resistance: 15mΩ max.
- Dielectric Withstanding Voltage: 650V

ENVIRONMENTAL

- Operating Temperature Range: -40°C to +105°C

APPROVALS & CERTIFICATION

- This product is RoHS compatible according to the European Union Directive 2002/95/IEC

SPECIFICATIONS

- File no. E66906
- File no. LR46923
- Product Drawing: 89947 or 89361
- Product Specification: BUS-12-115

PACKAGING

- Tubes

INSERTION DEPTH

- 2.55mm min. to 4.57mm max. [provides .381mm wipe]

TARGET MARKETS/APPLICATIONS

Electronic Control Systems

Communications

Servers
Communication Equipment

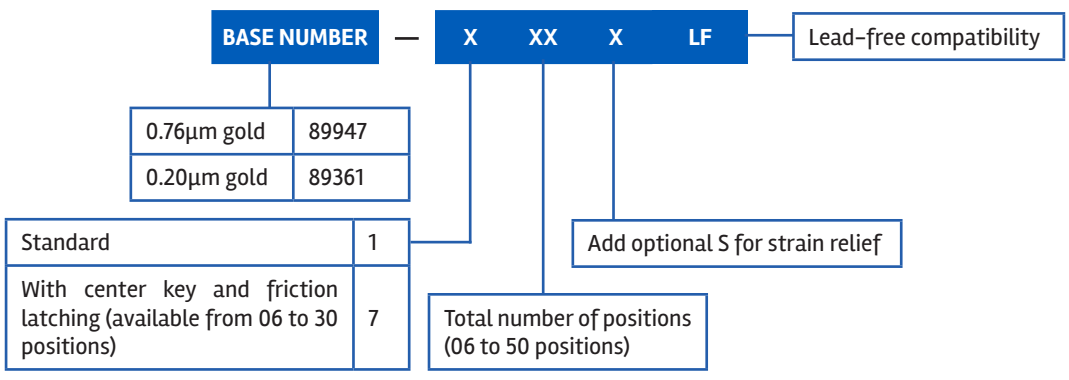
Industrial Automation
Instrumentation

Vending Machines

PART NUMBERS

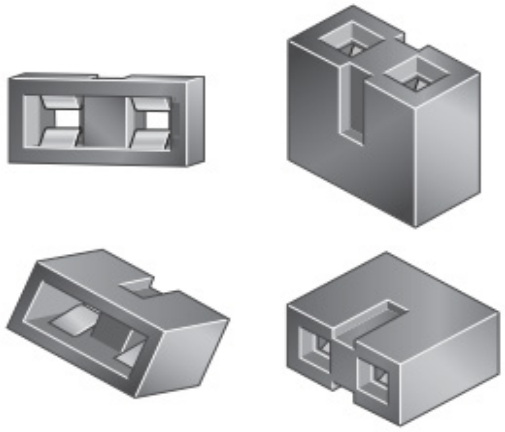
Description	Part Numbers
IDC receptacle, Double Row	89947
IDC receptacle, Double Row	89361

PART NUMBER SELECTOR IDC RECEPTACLE



Minitek® Jumper Shunts

BOARD/WIRE-TO-BOARD CONNECTORS



TARGET MARKETS

FEATURES

- Dual beam contact design
- Early entry
- Mates with very short pins (5mm) stackable end-to-end and side-by-side
- Closed front and beveled lead in ramps
- Housing height 3.5mm
- Can be stacked end to end and side by side
- High Temperature Performing Raw materials

BENEFITS

- High reliable electrical performances
- Long wiping action for electrical reliability
- Meets your specific needs and is useful for Mezzanine Application
- Protect contact damage during insertion
- Allow small size of application
- Flexibility for assembly with male header
- Compatible with infra-red and vapor phase re-flow oven

TECHNICAL INFORMATION

MATERIAL

- Housing: High temperature, Black thermoplastic
- Flammability Rating: UL94V-0
- Pin: Phosphor-Bronze
- Plating: Gold or Tin over 1.27µm (50µin) Nickel

MECHANICAL PERFORMANCE

- Mating Cycles (durability): 50 max.
- Insertion Force: 650gf max.
- Withdrawal Force: 50gf min.

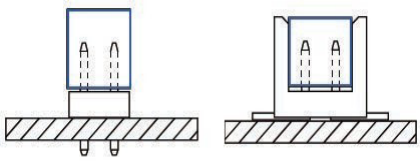
ELECTRICAL PERFORMANCE

- Current Rating: 1A max. per contact
- Insulation Resistance: 1000MΩ min.
- Contact Resistance: 15MΩ max. initial, 20MΩ max. after environmental tests
- Dielectric Withstanding Voltage: 650V

PACKAGING

- Plastic bags

TYPICAL APPLICATIONS



APPROVALS & CERTIFICATION

- This product is RoHS compatible according to the European Union Directive 2002/95/IEC

SPECIFICATIONS

- File no. E66906
- File no. LR46923
- Product Drawing: 86730
- Product Specification: DPS-12-012

ENVIRONMENTAL

- Operating Temperature Range: -40°C to +105°C

TOOLING INFORMATION

- Hand-tool: HT 270

TARGET MARKETS/APPLICATIONS

Personal Care Devices (Air Dryer)
Home Care Devices (Cleaning Robot)
Home Automation (Alarm System)

Sever
Storage

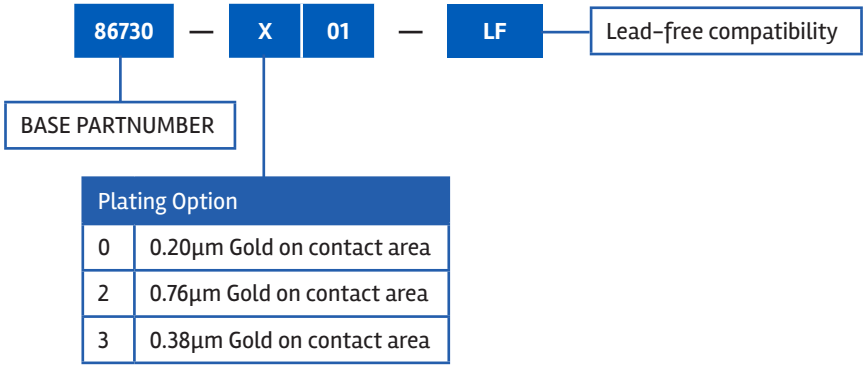
Robotics
PLC
Power Tool

PART NUMBER SELECTOR SHUNTS

CORE RANGE

86730 — **202LF**

STANDARD



Plating Option	
0	0.20µm Gold on contact area
2	0.76µm Gold on contact area
3	0.38µm Gold on contact area

BASICSMTKWCTB1124EA4