



Molex汽车连接器介绍

molex
one company a world of innovation

HEILIND
Performance. Trust. Innovation.

讲师介绍



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Jason Tong

Molex 上海代理商市场专案经理

Jason Tong 在 Molex 已经工作超过12年。之前在Molex 有十多年的销售经验，现在负责沟通协调代理商的战略设定和推进代理商的绩效提高，同时还配合代理商做市场推广和组织代理商的各种产品培训。



kt.he@heilind.com

KT HE

Heilind Asia 资深 FAE

赫联电子中国区产品应用工程师，从事连接器产品的设计研发生产工作十余年，具有丰富的连接器应用经验，先后在富士康，泰科，安费诺从事过连接器研发工作。加入 HEILIND 3年来，为多家客户提供过全套连接器解决方案，涉及工业设备，汽车，医疗，新能源等多个领域。

AGENDA

- Molex Automotive Products Overview
- Mini 50™ Unsealed Connector System
- CMC/CMX Sealed Hybrid Connection System
- MX150™ Sealed Connector System
- Heilind company information

Molex Automotive Products Overview



Powertrain

- MX150
- MX123
- MX64 sealed
- CMC
- GLOBAL FUEL INJECTION
- O2 SENSOR
- MizuP25
- MXP120

Body Electronics

- MX150
- MX123
- MX64 sealed
- MX120G
- CMC
- STAC 64
- H-DAC 64 single row
- 72 way header
- Mini50
- MX150 Unsealed
- Duraclik
- MizuP25
- MXP120

Safety

- MX150
- MX123
- MX64 sealed
- CMC
- SENSOR
- ABS HOUSING
- Mini50
- MXU150
- Squib
- HS-Autolink 1 & 2
- Duraclik
- MizuP25
- MXP120

Convenience & Infotainment

- H-DAC64 dual row unselaed
- H-Dac64 single row unsealed
- STAC64
- HS-Autolink 1 & 2
- Mini50
- MX150 Unsealed
- Duraclik

Mini 50 Unsealed Connector System

Mini50 Feature and Application

Unsealed Applications:

- Headliners
- Clusters/Navigation
- Radios
- HVAC
- Switches
- Lighting
- Mirrors
- Steering Wheel Column
- Camera/Sensor



FEATURES

- Independent Secondary Lock (ISL)
- Reduced Pitch: 2.00mm
- Reduced wire gages
- High Temperature material

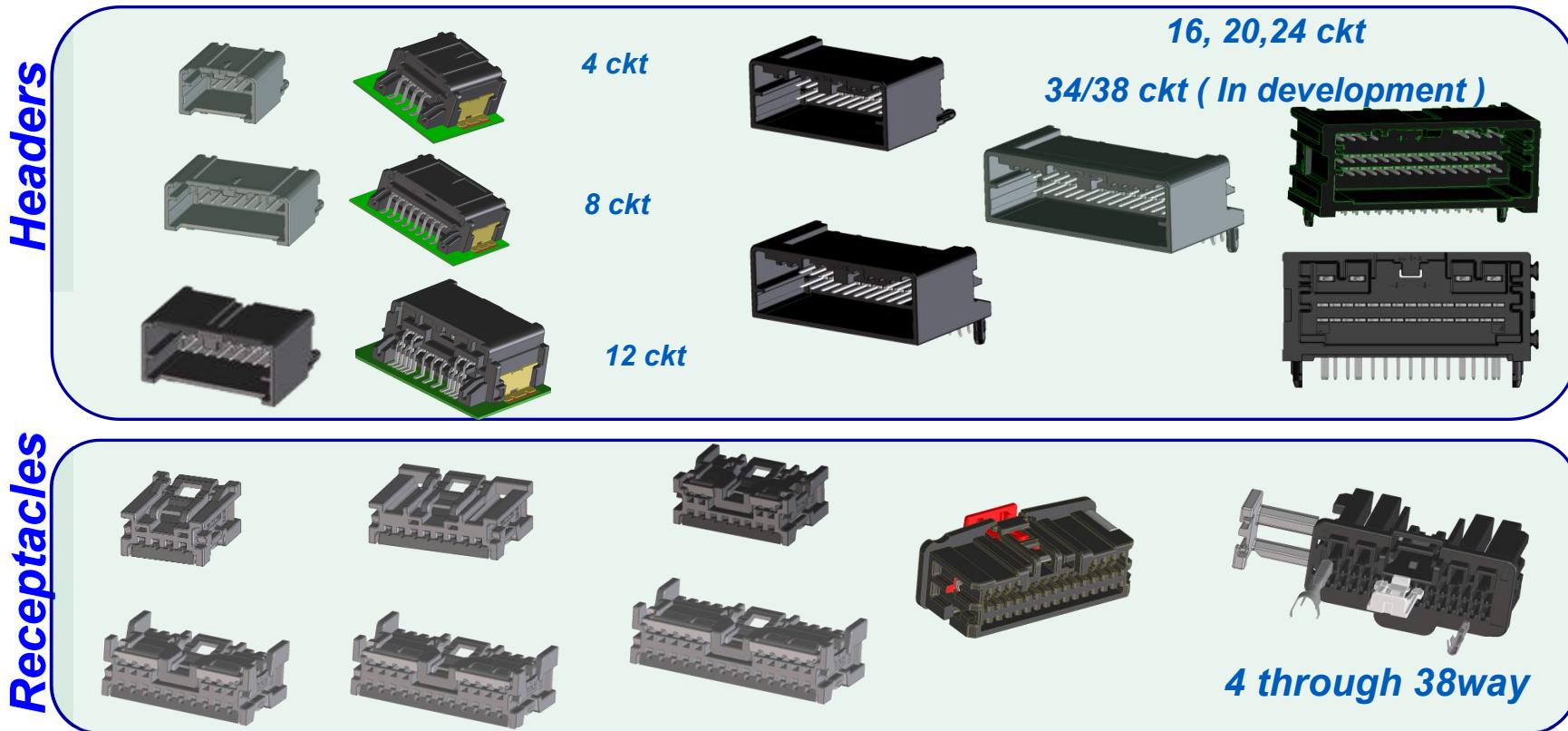
BENEFITS

- Secondary terminal retention
- Board space / packaging space reduction
- Copper weight reduction, overall cost reduction
- Infrared (IR) reflow headers 260°C

Mini 50 Unsealed Connector System

Mini50 Component Overview Unsealed

A full range of Headers: Vertical, R/A, SMT – 4 way to 38 way



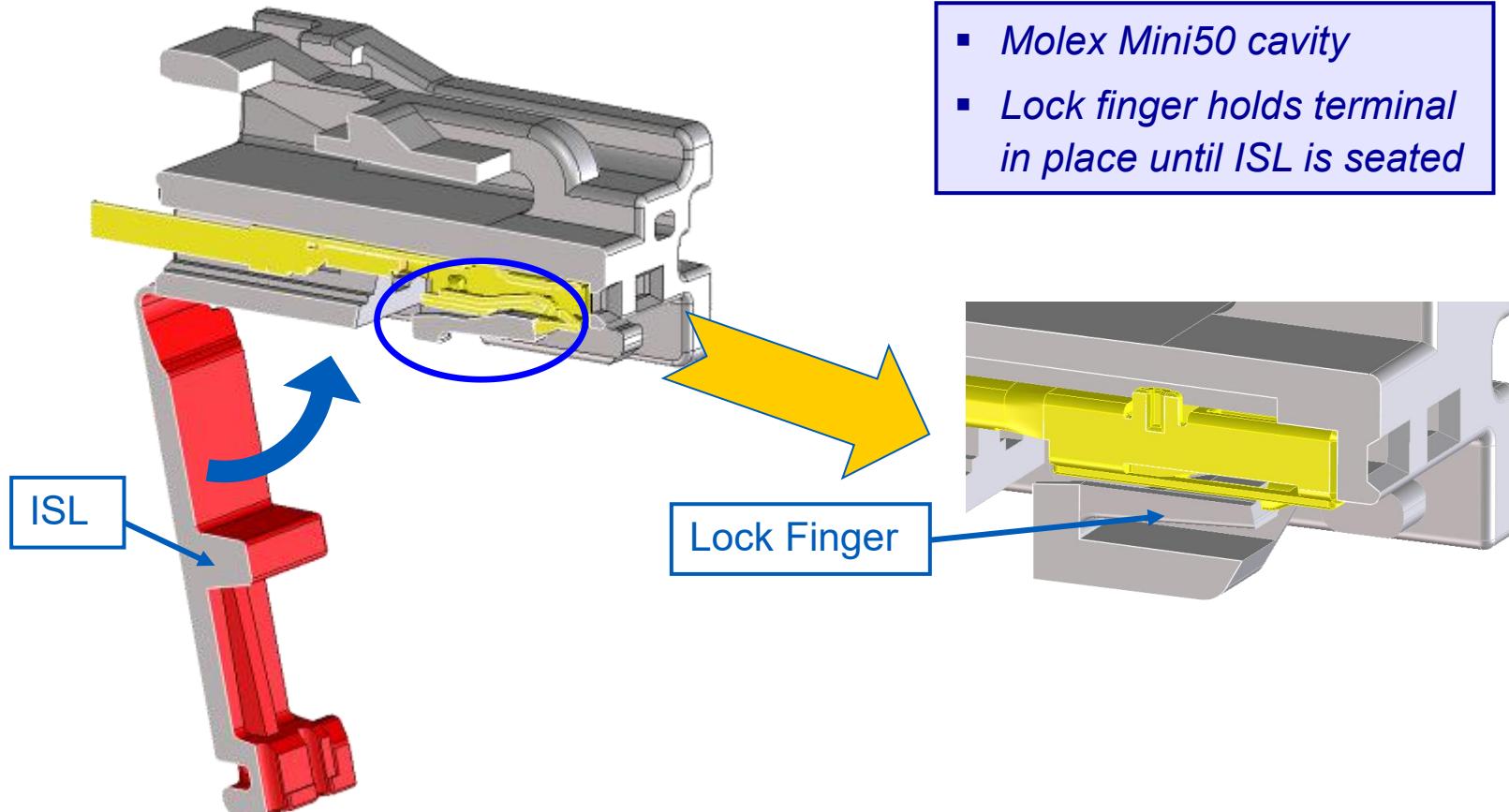
A full range of receptacles:

Single , two, three rows – 4 way to 38 way, 34 way being Hybrid 120-050

Mini 50 Unsealed Connector System

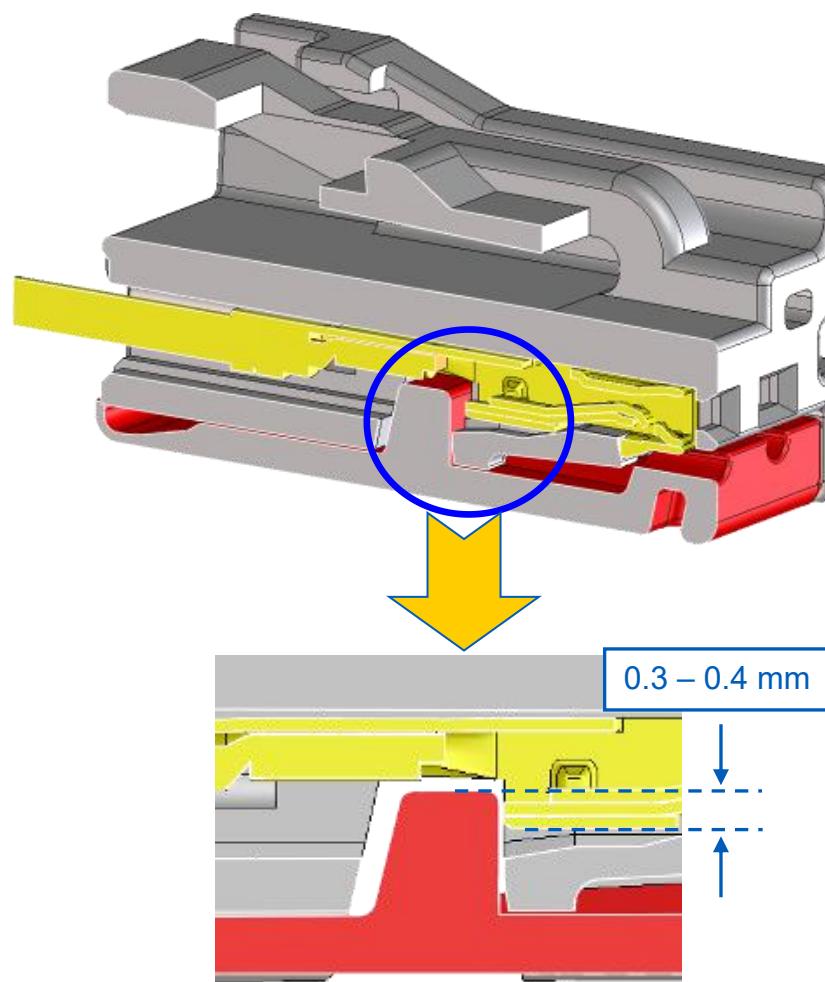
Cavity Design Functions

Terminal Cavity and Lock Finger:



Mini 50 Unsealed Connector System

ISL Functionality:



- Terminal backs up to ISL preventing terminal extraction while ISL is seated

CMC/CMX Sealed Hybrid Connection System



CMC 32ckt connector



CMC-CP Terminals



CMX 65ckt connector



CTX Terminals

Definition

- CMC (C like connector, M like modular, C like controller) is a sealed, hybrid, modular connector family developed 15 years ago for European OEM (PSA, RSA, Ford) for their engine controllers. Today this system is used at many other customers, applications and markets. CMC uses 2 pieces terminal called CP.

- CMX connector is a new generation of CMC, developed to gain competitive advantage on the market, where competition is coming up. CMX uses one piece terminal called CTX

CMC/CMX Sealed Hybrid Connection System

Development Background

European Emission Standard	SOP Vehicles	Controller
Euro 1	<u>January 1993</u>	84 way
Euro 2	<u>July 1996</u>	112 way
Euro 3	<u>January 2001</u>	128 way
Euro 4	<u>January 2006</u>	138 way
Euro 5	<u>January 2011</u>	154 way
Euro 6	<u>September 2015</u>	190 way



CMC/CMX Sealed Hybrid Connection System

Markets and Application

AUTOMOTIVE END CUSTOMERS

- › PEUGEOT CITROEN
- › RENAULT NISSAN SAMSUNG
- DACIA LADA
- › FORD JAGUAR LAND ROVER
- VOLVO
- › FIAT ALFA ROMEO
- › BMW
- › DAIMLER
- › TOYOTA
- › MITSUBISHI
- › SUZUKI
- › KIA
- › HYUNDAI
- › DAEWOO
- › PROTON
- › TATA
- › SAIC
- › DFM
- › BRILLANCE
- › CHERY
- › SSANGYONG
- › VW

CMC/CMX Sealed Hybrid Connection System

Markets and Application

Transportation applications

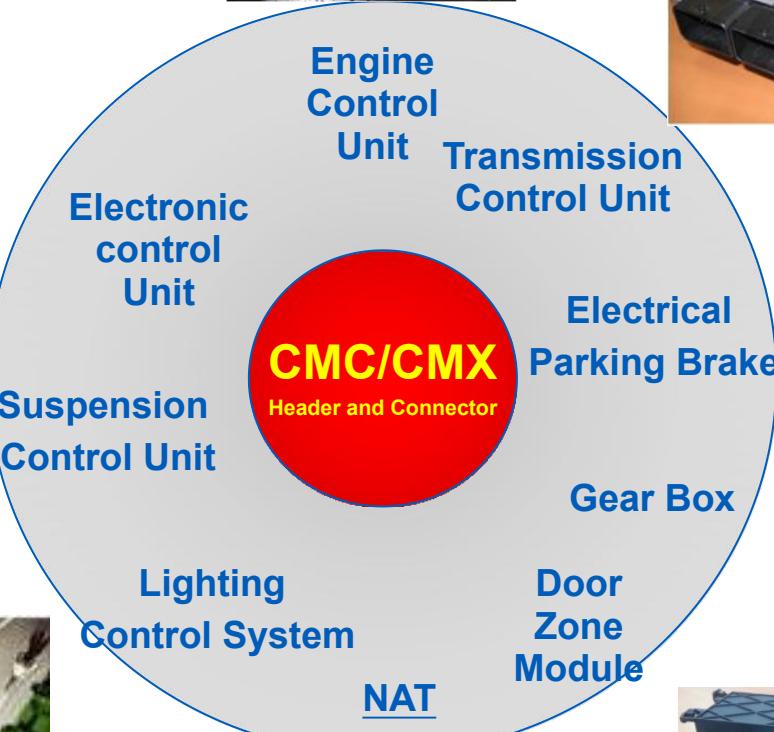
› **Automotive and Commercial Vehicles**

- › Cars
- › Trucks
- › Buses
- › Motorcycle
- › Marine
- › Agricultural equipment
- › Construction equipment



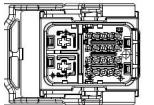
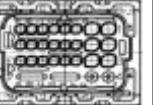
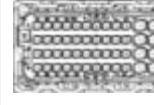
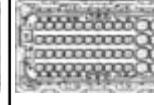
CMC/CMX Sealed Hybrid Connection System

Markets and Application



CMC/CMX Sealed Hybrid Connection System

CMC Product Range in details

CONNECTORS		22ckt	24ckt	28ckt	32ckt	36ckt	48ckt	53ckt
0,6 mm CP [pcs]		20	18	18	24	30	40	40
1,5 mm CP [pcs]		-	6	5	8	6	8	8
2,8 mm CP [pcs]		2	-	5	-	-	-	5
Existing color Codings		Blk, Brn, Blu,	Blk, Gry,	Blk, Gry, Brn	Blk, Gry, Brn, Blu, Grn	Blk, Brn	Blk, Gry Brn, Grn	Blk, Gry Brn, Grn
Product Series Check website for drawings, specs and 3D models		64326	64319	64318	64319	64320	64320	64321
Connector Interface								



22-ckt CMC
#64326



28-ckt CMC
#64318



32-ckt CMC
#64319



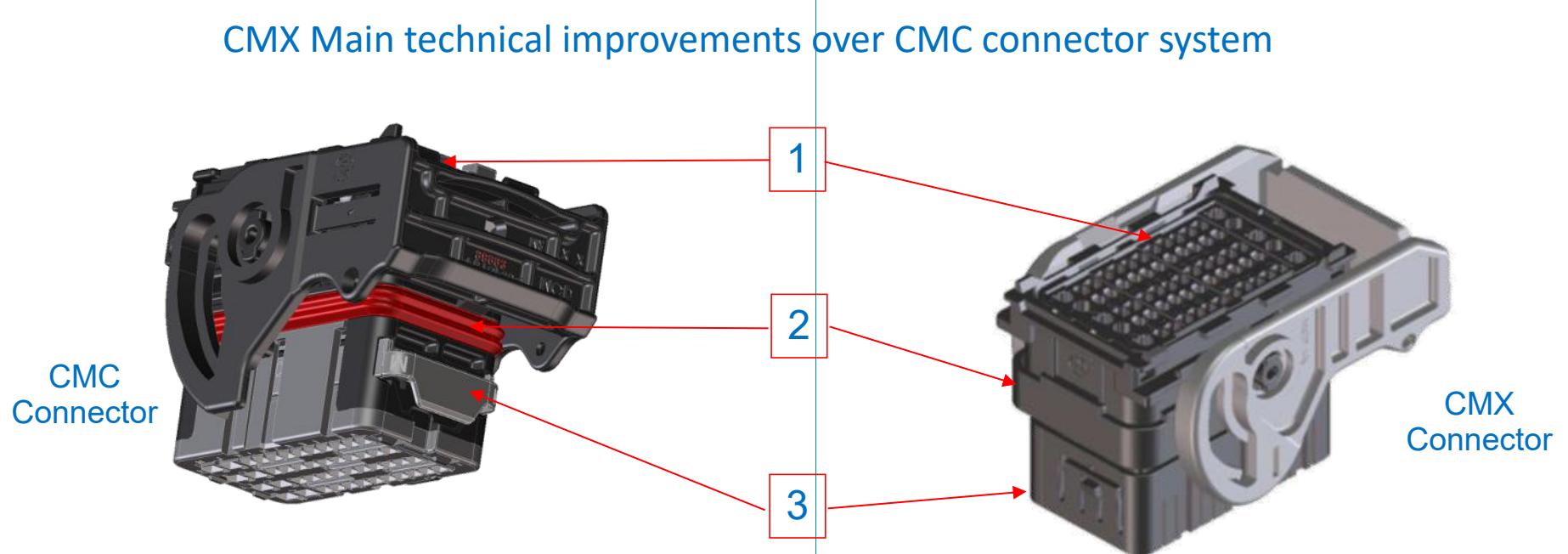
48-ckt CMC
#64320



53-ckt CMC
#64321

CMC/CMX Sealed Hybrid Connection System

CMX Connectors Features



Main Improvements :

- 1.Used with new single piece terminal system called CTX (CTX64, CTX150)
- 2.Full protection of interfacial seal during connector life, secured sealing performances.
- 3.Front TPA instead of side TPA to secure terminal insertion.

CMC/CMX Sealed Hybrid Connection System

CMC/CMX Headers Product Range in details

HEADER	28ckt	32ckt	36ckt	48ckt	80ckt	53ckt	96ckt	112ckt	120Ckt	154ckt
Ckt size/ pocket	28	32	48/36	48	32+48	53	48+48	32+48+3 2	55+65	48+53+53
0,6 mm / 1,5mm / 2,8mm / [pcs]	18 / 5 /5	24 / 8 / -	30 / 6 / -	40 / 8 / -	64 / 16 / -	40 / 8 / 5	80 / 16 / -	88 / 24 / -	90/30/-	120 / 24 / 10
Version	R/A	R/A	R/A	R/A	R/A	R/A	R/A	R/A	R/A	R/A
Product Numbers Check website for drawings, specs and 3D models	47745 -0100/ 47745 -0200/ 47745 -0300	64334- 0100 / 64334- 0300	47732- 0361	36638- xxxx 500762 -0481	502225 -0801	98997- 1002	36638- xxxx	64333- 0100	560045 -1201	34763- 0100
PCB Mounting	Wave Solder	Wave Solder	Wave Solder	Wave Solder	Wave Solder	Wave Solder	Wave Solder	Wave Solder	Wave Solder	Pressfit EON
Header picture										

MX150 Sealed Connection System



MX150™ Sealed Connector Family



MX150™ M3 Grip Terminals
(Series 33000, 33001, 33011, 33012)

MX150™ panel- mountconnectors
available in four polarization colors



MX150™ Back shells



MX150™,
2-by-6
female receptacle



MX150™,
2-by-8
male connector



MX150™ Twist-Lock
Dual-Row Sealed Bulkhead
Connectors
(Series 34840), 2-by-3, 2-by-4

MX150 Sealed Connection System

Markets and Applications



Fuel Injectors



Horns



Hood Switch



Sensors



Horns



Speakers

MX150 Sealed Connection System

Optimized Package Comparison

- ◆ MX150 System was Significantly Smaller than Industry Standard at the time of design.
- ◆ It is now the USCAR Standard footprint



MX150 Sealed Connection System

Core family Product offering

- › **Single row Mat seal, Blade & Receptacle:**
 - 1X2, 1X3, 1X4, 1X5, 1X6
- › **Dual row Mat seal, Blade & Receptacle:**
 - 2X2, 2X3, 2X4, 2X6, 2X8, 2X10
- › **Hybrid, Blade & Receptacle**
 - Twelve 1.5 circuits & Four 2.8 circuits
- › **Cable seal, Blade & receptacle**
 - 2 way GFI
 - 3 way Headlamp
- › **Terminals for all of the above**

MX150 Sealed Connection System

Extensions

MX150™ Sealed Header in Speedometer Module



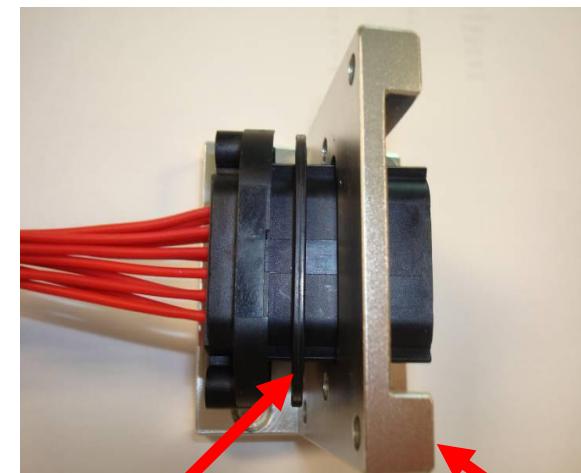
MX150™ Backshells



MX150™ Twistlock Harness



MX150™ Panel Mount



Rubber Gasket

Module Case

MX150 Sealed Connection System

Technology Overview

MX150 Product Family

		Wire-to-Wire			Bulk Head Connectors		Wire-to-Board	Accessories
		Cabled Sealed Connectors	Matte Sealed Connectors	Hybrid Connectors	Panel Mount	Twistlock	Right Angle Headers	Backshells
Circuit Size		2 to 3	2 to 20	16	12	6 to 16	8 to 20	2 to 12
Versions		Single Row	Single Row, Dual Row	Dual Row	Dual Row	Dual Row	Dual Row	Single Row, Dual Row
Current		Up to 15 A	Up to 22 A	Up to 25 A	Up to 22 A	Up to 22 A	Up to 22 A	NA
Terminal Size		1.5 mm	1.5 mm	1.5mm, 2.8 mm*	1.5 mm	1.5 mm	1.5 mm	NA
1.5 Wire Gauge	ISO	0.35 mm ² to 0.5 mm ²	0.35 mm ² to 0.5 mm ²	0.35 mm ² to 0.5 mm ²	0.35 mm ² to 0.5 mm ²	0.35 mm ² to 0.5 mm ²	NA	NA
	AWG	22 to 14	22 to 14	22 to 14	22 to 14	22 to 14	NA	NA
Options		Polarization, CPA, Clip Slot, Cavity Plug	Polarization, CPA, Clip Slot, Cavity Plug	Polarization, CPA, Clip Slot, Cavity Plug	Polarization	Polarization	Solder Tail, Complaint Pin	With Ribs, Without Ribs
Other Features		TPA, Keyed	TPA, Keyed, USCAR Interface	TPA, Keyed	TPA, Integrated Gasket, For Die Cast or Plastic Mounting, Screw Mounting Feature	TPA, Integrated Gasket, For Die Cast or Plastic Mounting, Twist-Locking Feature	Alignment and Rention Feature, Adhesive Groove, For I/R Soldering or Press Fit Technology	Single Hinge Design for easy handling
Polarization Options		A, B, C, D						
Color Options		Black, Gray, Dark Gray, Stone Gray, Yellow, Brown, Green						

Heilind Asia Overview



关于赫联电子 (*Heilind Electronics*) :

Heilind Electronics (赫联电子) 创立于1974年，全球总部位于美国波士顿，已在中国内地、香港、新加坡、美国、德国、巴西、加拿大和墨西哥设立了超过40处分部。其主要分销产品包括互连器件、继电器、风扇、开关和传感器、电路保护与热管理、套管和线束产品、晶体与振荡器。

2012年12月，赫联电子正式启动其亚太业务。赫联亚太的总部位于香港，除设有销售部外，还设置了区域配送中心和增值服务中心；迄今，赫联亚太已在中国香港、上海、深圳、北京、苏州、常州、西安、东莞、重庆、厦门、台北、新加坡、马来西亚、印度、泰国、菲律宾、越南、印度尼西亚等地开设19处分部和3处仓库（香港，新加坡和苏州）。更多信息，请访问 www.heilind.com; www.heilindasia.com; 微信、微博、脸书及推特。



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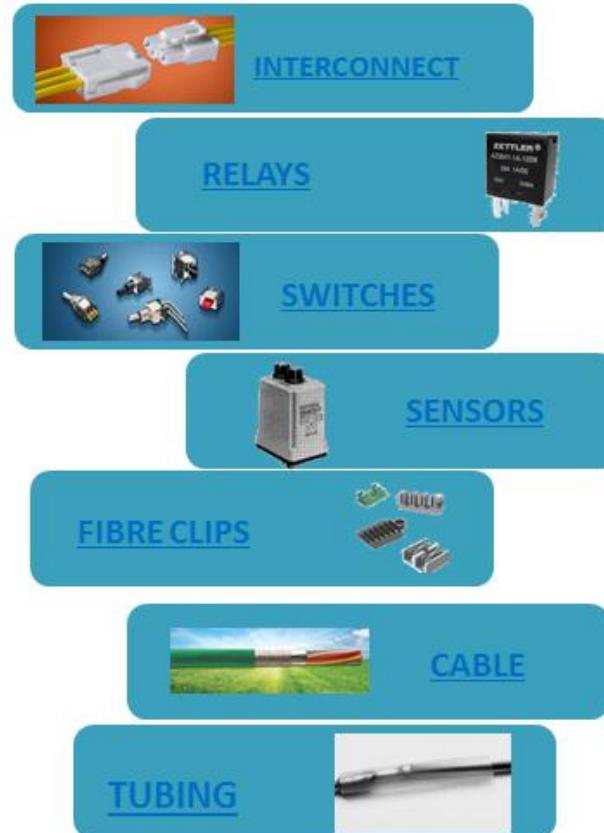
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赫联电子的优势

- 1> 丰富的产品线代理**
- 2> 丰富的增值加工服务内容**
- 3> 专业的在线业务管理服务**
- 4> 专业的技术支持团队**
- 5> 完备的区域配送中心和增值服务中心**
- 6> 优秀的口碑、业界的肯定**

Heilind Asia Supply Chain

Heilind Asia supports both original equipment and contract manufacturers in all market segments of the electronics industry, stocking products from the industry's leading manufacturers in 25 component categories, with a particular focus on interconnect and electromechanical products.



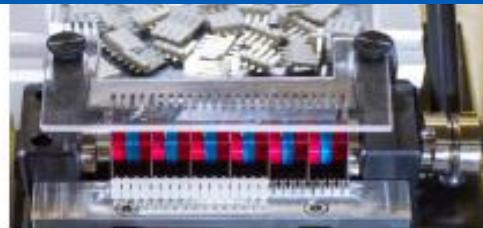
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赫联电子增值服务 (I)

接头切割

赫联拥有齐全的装备，可以在几乎任何制造商的任何中心销上切割单排和双排的包覆式和棒状接头。购买切割成特定尺寸的接头，减少成本、交付时间和最低订购数量。



我们提供切割排装插头成合适尺寸的插座头

销钉拔除

与其花费高昂成本、接受过高的数量底限、忍受冗长的交货时间从制造商购买空心插销，不如让赫联从标准的市售插头上拔除销钉，这样不仅成本更低、交货时间更短，同时还无需考虑最低订购数量。



我们为您拔除排插座上指定位置的针脚

连接器修改

赫联可以对许多连接器进行简单快速的改造，如切断装配吊耳、切割凹槽、增加极性键等。避免了交付时间和最小订购数量的问题，还能针对特殊应用轻松打造经济的定制解决方案。



我们为您改装接头，继电器，开关制等

赫联电子增值服务 (II)

卷绕或展开产品

赫联可以按需要卷绕和展开产品。哪种产品、数量多少、采用哪种包装方式均由您定。无需考虑MOQ，提供给您实际所需数量。



- 我们提供拆分卷装产品服务，出售您实际所需数量的卷装产品
- 我们为您将卷装产品切割为需要的粒装产品。



我们能切合您所需，配套及包装产品

赫联电子的优势

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Heilind Online

The screenshot shows the Heilind eStore homepage. At the top, there's a search bar with placeholder text "Search for a Part:" and a dropdown menu for "Manufacturer: ALL". Below the search bar are buttons for "Search", "Lost password", and "Change password". To the right of the search bar is a login form with fields for "User ID or Email Address" and "Password", and a "Log in" button. At the bottom of the page, there's a "Norton SECURED" logo, payment method icons (Visa, MasterCard, American Express), and customer support phone numbers for Guangdong Province, China; Suzhou, China; Singapore; and Hong Kong.

Heilind eStore

The screenshot shows the Chinese version of the Heilind website. At the top, there's a navigation bar with links for "eStore", "heilind.com", "供货商", "产品新闻", and "办公". Below the navigation is a search bar labeled "搜索零件:". The main content area features a news article titled "新闻中心 赫连德亚太首展在沪开幕" (News Center: Heilind Asia Pacific's first exhibition in Shanghai). The article includes a photograph of a TE Connectivity product and a small logo for "TE connectivity Authorized Distributor".

Chinese Website



Social Medias

Our eStore

Stock status & pricing

Order entry, status & tracking

Engineering data links to manufacturers

BOM upload quoting tool (Quick-Quote)

Reserve inventory activity report

HEILIND

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[Home](#) | [Search](#) | [View Cart](#) | [Order Status](#) | [Contact Us](#)

You are not logged in. [Please Log in.](#)

Welcome to the Heilind Estore

If you already have an estore account, please log in:

User ID or Email Address	<input type="text"/>
Password	<input type="password"/>
<input type="button" value="Log in"/>	

[Lost password](#)
[Change password](#)

Note: You can check stock and buy product via credit card without logging in. However, if you are an existing customer and would like to use the additional features of this site, a user ID and password are required. [Request a user id and password.](#)



Customer Support Telephone Numbers

USA Support 800-400-7041

USA Distributor/Broker Support 800-800-1666

International Support 978-657-4870

Eastern Canada Support 866-290-9280

Western Canada Support 800-613-6723

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赫联电子的优势

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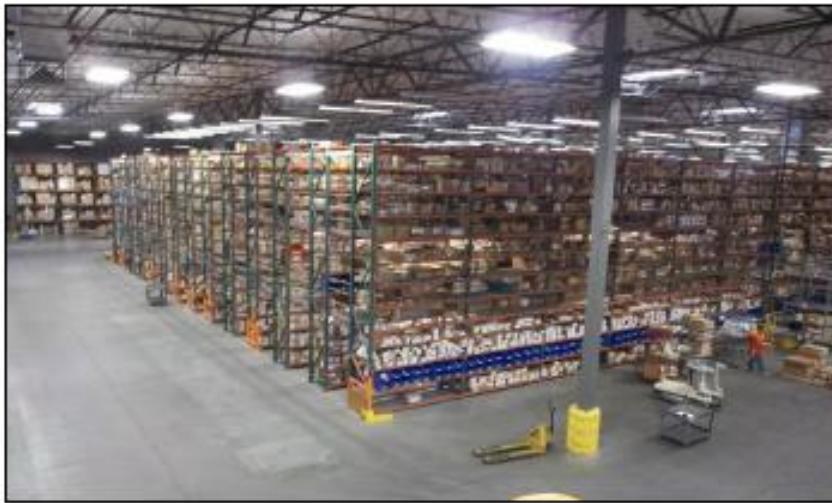
赫联电子亚太区分布



赫联电子的优势

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- 6> 优秀的口碑、业界的肯定

赫联电子配送中心 & 增值服务中心



配送中心分布:

- 1) 美国5个（克利夫兰、弗雷斯诺、
达拉斯、波士顿和圣保罗）
- 2) 亚洲2个：香港和新加坡

先进的系统管控



增值服务中心分布:

香港和美国新罕布什尔

完备的零件装配、零件修改和零件包装服务

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赫联电子业界口碑



除了多次获得供应商和媒体颁发的奖项，还连续四年赢得第三方独立调查机构Bishop & Associates的肯定，被评为最优服务提供者。



Bishop & Associates, Inc.

Distributor Achievement Award

Presented to

Heilind Electronics, Inc.

2010 Customer Survey

Best Electronic Distributor

- #1 Best Overall Distributor
- #1 Best Outside Sales Support
- #1 Best Inside Sales Support
- #1 Best in Providing Product Sample

HEILIND
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Bishop & Associates, Inc.

Distributor Achievement Award

Presented to

Heilind Electronics, Inc.

2011 Customer Survey

Best Electronic Distributor

- #1 Best Overall Distributor
- #1 Preferred Connector Distributor
- #1 Best Outside Sales Support
- #1 Best Inside Sales Support
- #1 Best in Price Competitiveness
- #1 Overall Satisfaction with Buyers
- #1 Technical Support and Expertise

HEILIND
Performance. Trust. Innovation.

Excellence In
Bishop & Associates Best Electronics Distributor
5 Years Running

Distribution
HEILIND
Performance. Trust. Innovation.

Service Excellence
HEILIND
Bishop & Associates Best Electronics Distributor
6 Years Running

Our Customers Say Heilind's the Best... Again!
We are proud to announce that our customers have voted us the #1 electronic distributor... for the sixth time in a row. The results are based on an annual survey conducted by Bishop & Associates, the leading industry market research firm.
Heilind Electronics was voted:
#1 Best Overall Distributor
#1 Ease of Doing Business
#1 Sales & Technical Support
#1 Breadth of Product Offering
#1 On-time Delivery/Availability
We're happy to share our success with you as we continue to serve you in the best way possible.

HEILIND
Performance. Trust. Innovation.
www.heilind.com



Bishop & Associates, Inc.

Distributor Achievement Award

Presented to

Heilind Electronics, Inc.

2012 Customer Survey

Best Electronic Distributor

- #1 Best Overall Distributor
- #1 Ease of Doing Business
- #1 Price Competitiveness
- #1 Technical Support
- #1 On-time Delivery

HEILIND
Performance. Trust. Innovation.



Bishop & Associates, Inc.

Distributor Achievement Award

Presented to

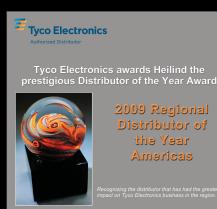
Heilind Electronics, Inc.

2014 Customer Survey

Best Electronic Distributor

- #1 Best Overall Distributor
- #1 Ease of Doing Business
- #1 Price Competitiveness
- #1 Technical Support
- #1 Breadth of Product Offering

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2009 Regional Distributor of the Year Americas
Experience the award-winning service that has made Heilind Electronics the greatest partner for Tyco Electronics business in the region.
• Extensive Inventory • Local/Regional Stock • Competitive Pricing
• Quality Control • Excellent Customer Service • World-Class Manufacturers



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Distribution As It Should Be

Thank you!

HEILIND
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