PRODUCT CATALOG

HIROSE ELECTRIC CO.,LTD.

IX Series

IEC Standard Compliant
Next-Generation Industrial Transmission Connector

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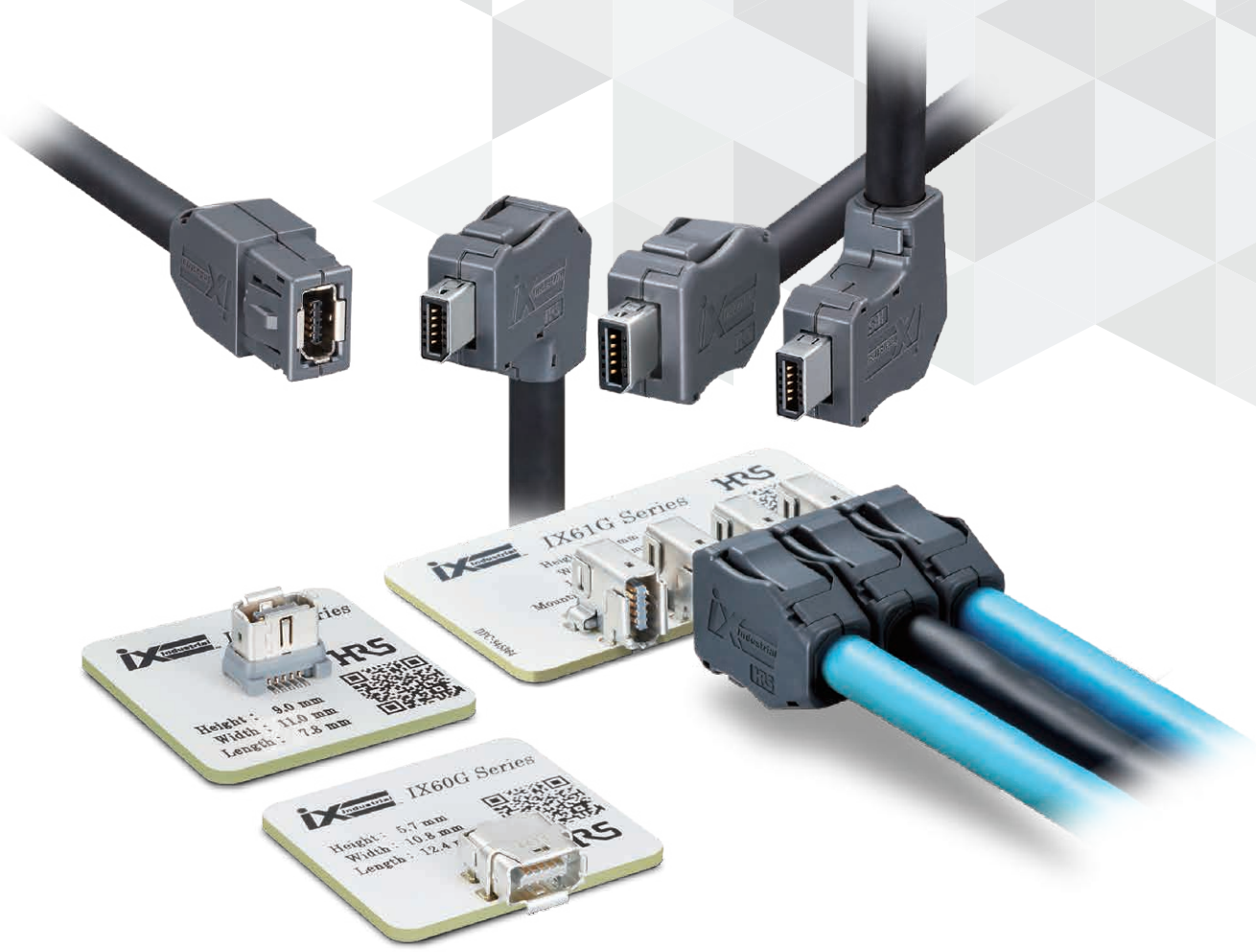
iX Industrial™

Compact

Robust

CAT6A



Product page
https://www.hirose.com/product/en/products/IX/

Special features page
https://www.hirose.com/product/en/pr/ix_industrial/

Jun. 2023

Advance with ix Industrial™

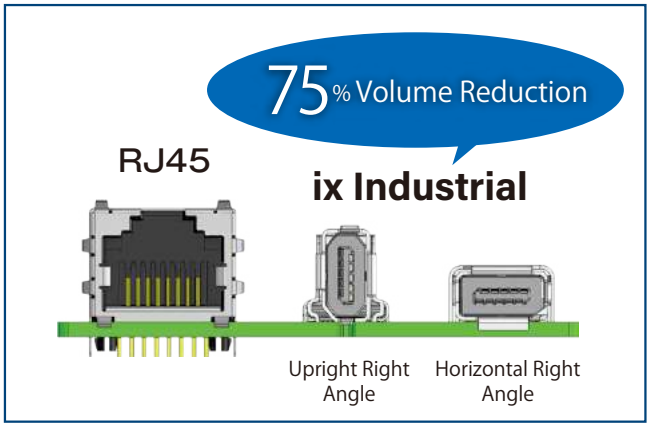
Overview

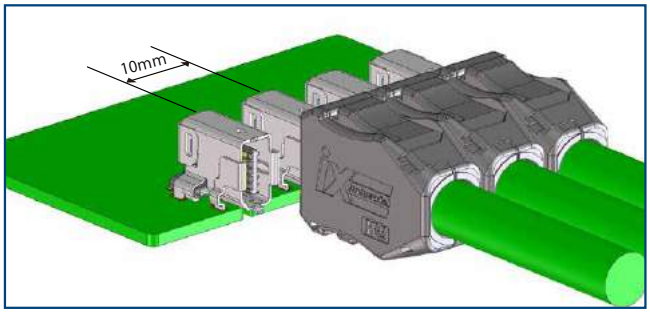
・Multi-purpose, compact I/O connector for industrial machinery.
・IEC Standard IEC 61076-3-124 compliant
・Compact, robust and supports high speeds
・High EMC resistance

Features

1. Smaller Size, Greater Design Freedom

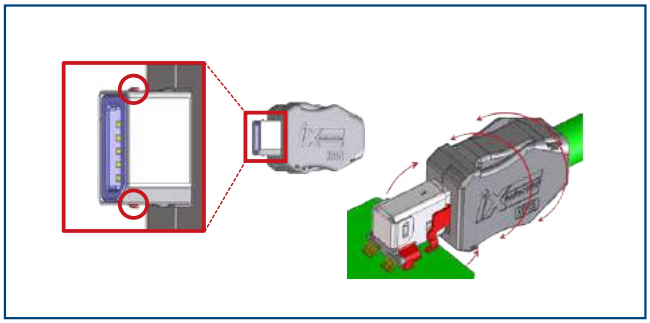
The ix Industrial offers a size reduction of 75% compared to the RJ45.
The right angle receptacle provides an even greater height reduction.
Furthermore, it allows for 10mm pitch parallel mounting.
The ix Industrial enables greater board design flexibility and is ideal for space reduction.





2. Breakage Prevention

The metal lock latches won't break, and the shell is through-hole mounted.
The design reduces stress to the SMT leads while preventing breakage from prying.
The ix Industrial was designed with vibration and impact resistance.



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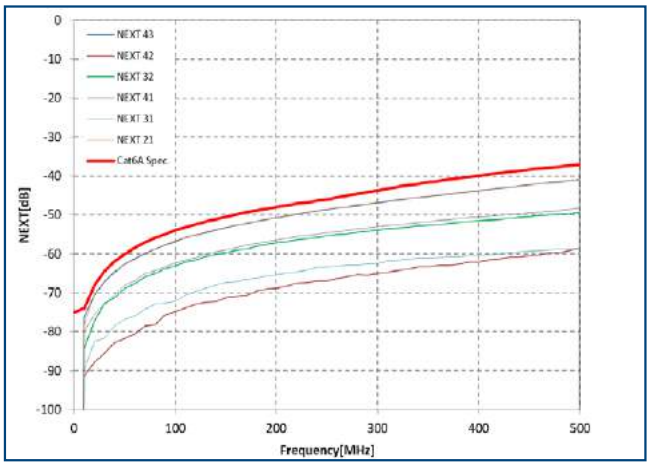
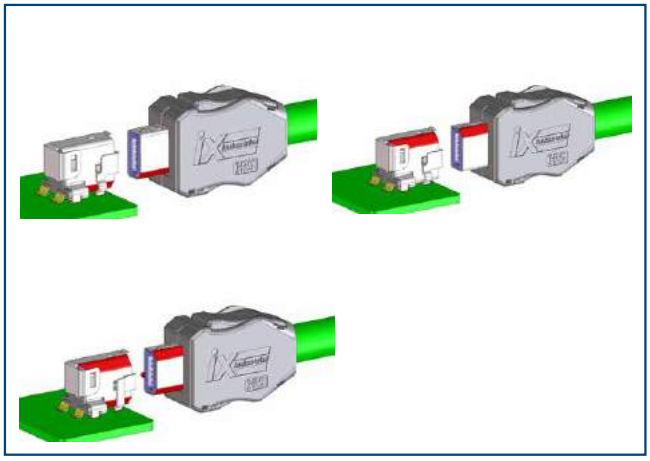
3. Supports a Wide Range of Transmission Speeds

Supports Cat.5e (1Gbps/4 Pairs) and Cat.6A (10Gbps/4 Pairs) stable high speed transmission. It is used in a variety of applications, from Ethernet in FA equipment to medical devices.



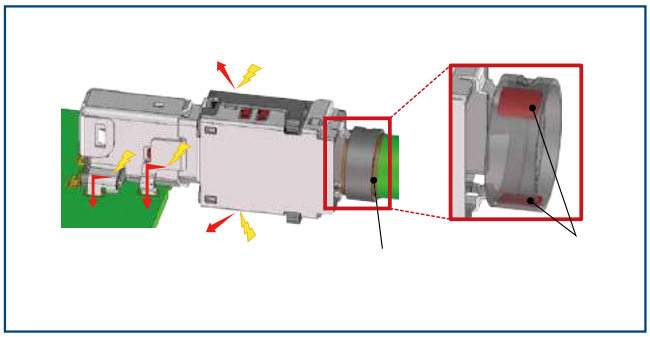
4. Ethernet and others

Use the Type A/C for Ethernet communications and the Type B for Non-Ethernet communications. The ix Industrial enables a variety of connections.



5. Superior Noise Resistance

The shell is crimped together and comes into direct contact with the receptacle's ground spring for shielding.
The ix Industrial can be used safely in any operating environment.



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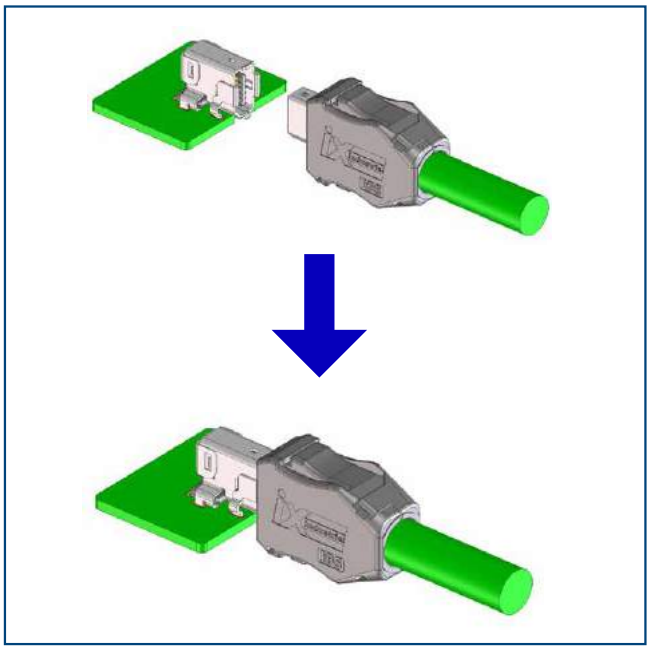
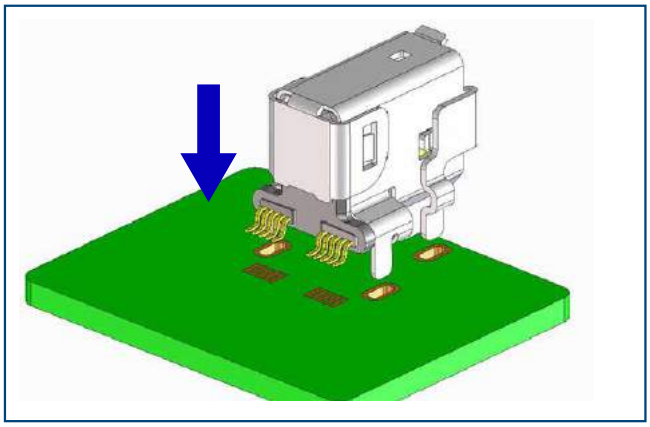
6. Easy, but Provides a Reliable Connection

Locking is completed simply by inserting the plug into the receptacle.
Simple operation that the lock can be released easily by pushing on the buttons while pulling out.
Clear tactile click prevents incomplete mating.



7. THR (Through-Hole Mounting) Compatible

The receptacle shell is mounted in the through-holes for enhanced PCB mounting strength.
THR mounting enables simultaneous reflow mounting with the signal contact SMT, for reduced board mounting time.



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Product Specifications

Rated Current	All Pins	1.5A/pin	Operating Temperature (Note 1)	-40 to +85℃
	Pin No.1,2,6 and 7	3A/pin	Storage Temperature Range	-30 to +60℃
Rated Voltage	50V AC / 60V DC			

Item	Specification	Conditions
Contact Resistance	Signal : 30mΩ Max. (Note 2) Shield : 100mΩ Max. (Note 2)	Measured at 100mA
Insulation Resistance	500MΩ Min.	Measured at 500V DC
Withstanding Voltage	No flashover or breakdown	Voltage of 500V DC applied for 1 min.
Mating Durability	Signal : 80mΩ Max. (Note 2) Shield : 100mΩ Max. (Note 2)	5,000 insertion/extraction cycles
Vibration Resistance	No electrical discontinuity of 1 μs or more. (Note 3) No damage, crack or loosened parts	10 to 500Hz, Half Amplitude 0.35mm, Acceleration of 50m/s^2.
Shock Resistance	No electrical discontinuity of 1 μs or more. (Note 3) No damage, crack or loosened parts Signal : 80mΩ Max. (Note 2) Shield : 100mΩ Max. (Note 2)	300m/s^2, 11ms Duration, 3 Axis in Both Directions, 3 Times Each
Fretting Corrosion Resistance	No electrical discontinuity of 1 μs or more. (Note 3) No damage, crack or loosened parts	490m/s^2, 30 times/min, 1000 times

Note 1 : Includes temperature rise due to current flow.
Note 2 : Conductor resistance of the cable is not included.
Note 3 : Electrical performance applicable to signal contact and Shield except Contact No. 3.8.

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Materials / Finish

●Receptacle

Component	Materials	Color/Finish	Remarks
Insulator	Liquid Crystal Polymer, PA Rasin	Gray	UL94V-0
Contact	Copper Alloy	Partially Gold Plated	-
Shielding Plate	Stainless Steel	-	-
Shell	Stainless Steel	Tin Plated	-
Suction Cap	PA Resin	Black	UL94V-0

●Plug

Component	Materials	Color/Finish	Remarks
Contact	Copper Alloy	Partially Gold Plated	-
Insulator	Polyamide Resin	Black, Dark Gray	UL94V-0
Shielding Plate	Stainless Steel	-	-
Insulator Case	Polyamide Resin	Black	UL94V-0
Guide	Polycarbonate Resin	Transparent, Transparent Yellow, Transparent Blue	UL94V-0
Shield Case	Stainless Steel	Nickel Plated	-
Shield Shell	Stainless Steel	Nickel Plated	-
Cover Case	Polycarbonate Resin	Dark Gray	UL94V-0

●In-line Jack

Component	Materials	Color/Finish	Remarks
Contact	Copper Alloy	Partially Gold Plated	UL94V-0
Insulator Case	Polyamide Resin	Black	UL94V-0
Retention Plate	Polyamide Resin	Black	UL94V-0
Shielding Plate	Stainless Steel	-	-
Shell	Stainless Steel	Nickel Plated	-
Shield Case A	Stainless Steel	Nickel Plated	-
Shield Case B	Stainless Steel	Nickel Plated	-
Cover Case	Polycarbonate Resin	Dark Gray	UL94V-0

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Product Number Structure

Refer to the chart below when determining the product specifications from the product number.
Please select from the product numbers listed in this catalog when placing orders.

■ Receptacle

IX 61 G - A - 10 P (##)
❶ ❷ ❸ ❹ ❺ ❻ ❾

❶ Series Name	IX Series	❹ Mating Key/ Application	A : Type A/Ethernet Communication B : Type B/Non-Ethernet Communication
❷ Mounting/ Assembly Method	61 : Upright Right Angle SMT 60 : Horizontal Right Angle SMT 80 : Vertical SMT	❺ Maximum Number of Usable Positions	10 : 10pos.
		❻ Contact Gender	P : Male Contact
❸ Gigabit Ethernet Support	G	❾ Plating Specifications	Blank : Gold Plated (01) : Palladium-Nickel Plated + Gold Plated

■ Plug

IX 40 G - A - 10 S - CV (7.0) (##)
❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾

❶ Series Name	IX Series	❺ Maximum Number of Usable Positions	10 : 10pos. 8 (Note) : 8pos.
❷ Mounting/ Assembly Method	40 : Hand Solder 30 : IDC (26 to 28 AWG, Insulator Outer Diameter ϕ 0.95 to 1.05mm) 31 : IDC (24 to 25 AWG, Insulator Outer Diameter ϕ 1.1 to 1.25mm) 32 : IDC (22 AWG, Insulator Outer Diameter ϕ 1.4 to 1.6mm)	❻ Contact Gender	S : Female Contact
		❼ Plug Cover Cabling Direction	CV : Straight CVL1 : Downward Cabling CVL2 : Upward Cabling
❸ Gigabit Ethernet Support	G	❽ Applicable Cable Diameter	(7.0) : Sheath Outer Diameter ϕ6.3 to 7.2mm
❹ Mating Key/ Application	A : Type A/Ethernet Communication B : Type B/Non-Ethernet Communication	❾ Plating Specifications	Blank : Gold Plated (01) : Palladium-Nickel Plated+Gold Plated

Note : Contacts No.3 and 8 do not have a hole to pass the wire through the IDC guide.

■ In-line Jack

IX 40 G - A - 10 P - JC (7.0) (##)
❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾

❶ Series Name	IX Series	❻ Contact Gender	P : Male Contact
❷ Mounting/ Assembly Method	40 : Hand Solder	❼ In-line Jack Cover Cabling Direction	JC : Straight
❸ Gigabit Ethernet Support	G		
❹ Mating Key/ Application	A : Type A/Ethernet Communication B : Type B/Non-Ethernet Communication	❽ Applicable Cable Diameter	(7.0) : Sheath Outer Diameter ϕ6.3 to 7.2mm
❺ Maximum Number of Usable Positions	10 : 10pos.	❾ Plating Specifications	Blank : Gold Plated (01) : Palladium-Nickel Plated + Gold Plated

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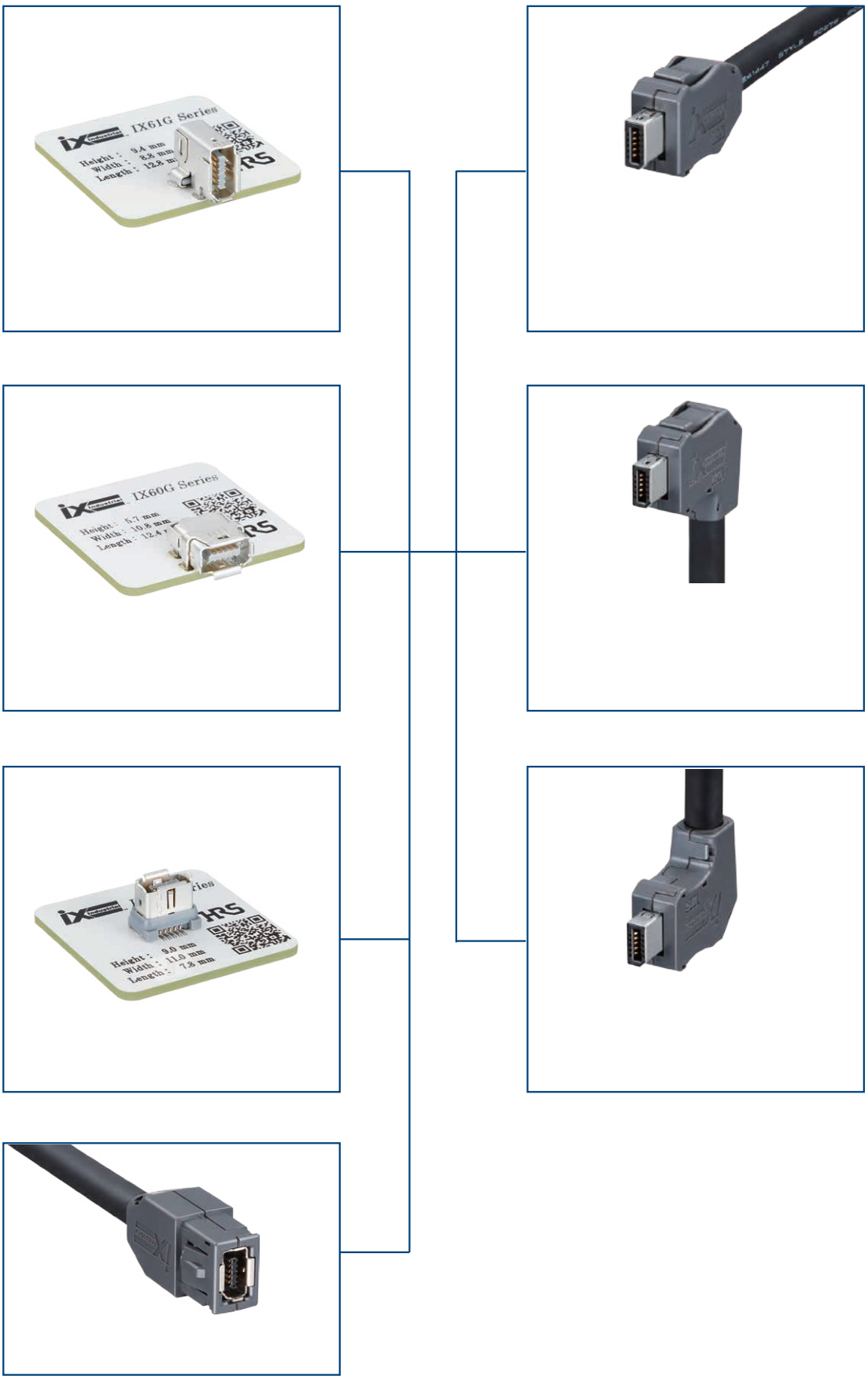
Connector Mating Combination Diagram



Note : Please use the same mating key (Type A, B) for both the plug and receptacle.

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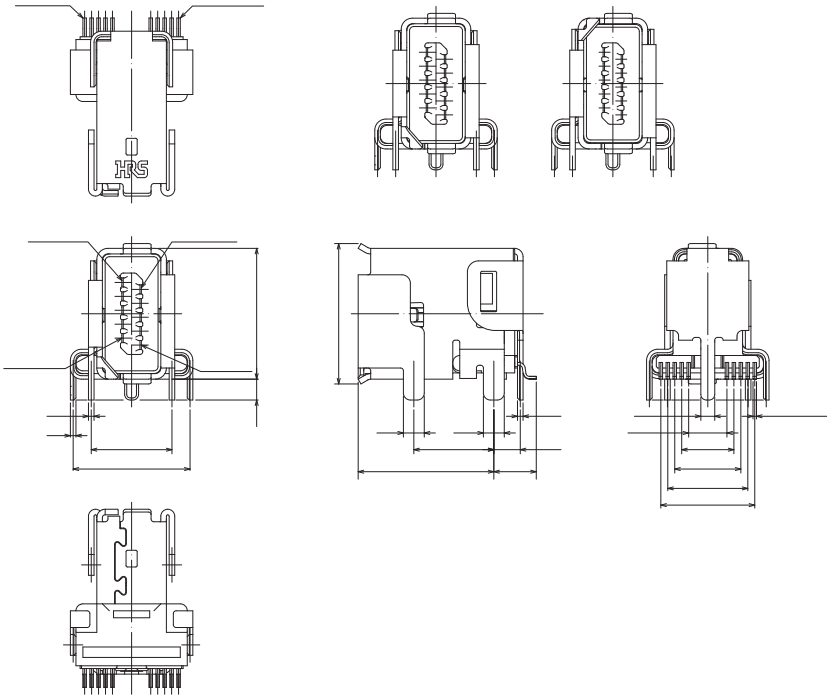
Receptacle

Upright Right Angle



Part No.	HRS No.	Contact Area Plating	Purchase Unit
IX61G-A-10P	CL0251-0021-0-00	Gold Plated 0.2 μ m	400pcs per reel
IX61G-A-10P(01)	CL0251-0021-0-01	Palladium-Nickel Plated 0.75 μ m + Gold Plated 0.05 μ m	
IX61G-B-10P	CL0251-0026-0-00	Gold plated 0.2 μ m	
IX61G-B-10P(01)	CL0251-0026-0-01	Palladium-Nickel Plated 0.75 μ m + Gold Plated 0.05 μ m	

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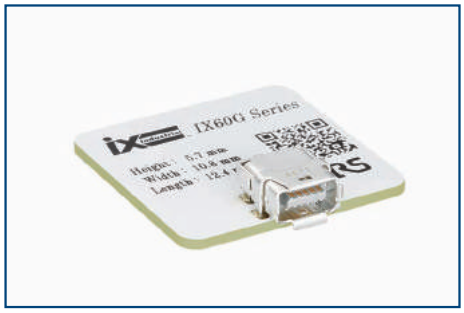
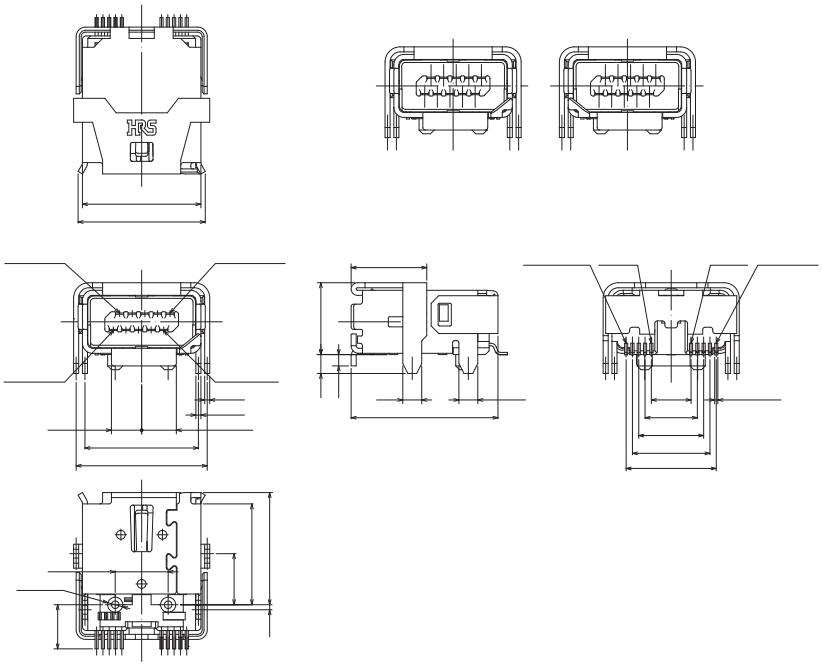
Horizontal Right Angle





Part No.	HRS No.	Contact Area Plating	Purchase Unit
IX60G-A-10P	CL0251-0016-0-00	Gold Plated 0.2 μm	550pcs per reel
IX60G-A-10P(01)	CL0251-0016-0-01	Palladium-Nickel Plated 0.75 μm + Gold Plated 0.05 μm	
IX60G-B-10P	CL0251-0017-0-00	Gold Plated 0.2 μm	
IX60G-B-10P(01)	CL0251-0017-0-01	Palladium-Nickel Plated 0.75 μm + Gold Plated 0.05 μm	

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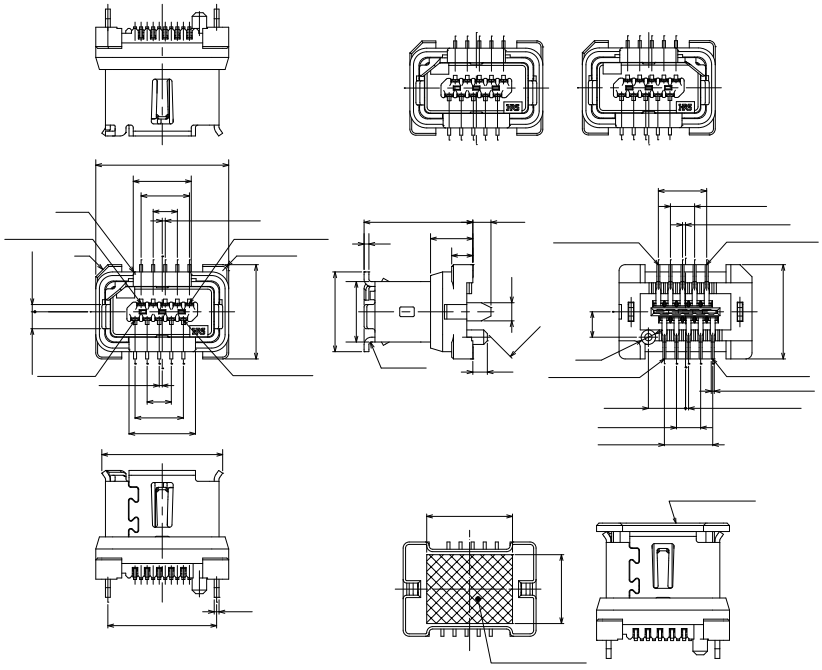
Vertical



Part No.	HRS No.	Contact Area Plating	Purchase Unit
IX80G-A-10P	CL0251-0018-0-00	Gold Plated 0.2 μm	450pcs per reel
IX80G-A-10P(01)	CL0251-0018-0-01	Palladium-Nickel Plated 0.75 μm + Gold Plated 0.05 μm	
IX80G-B-10P	CL0251-0019-0-00	Gold Plated 0.2 μm	
IX80G-B-10P(01)	CL0251-0019-0-01	Palladium-Nickel Plated 0.75 μm + Gold Plated 0.05 μm	

Note : This product is delivered with a cap for Pick & Place mounting.
Please remove the cap before use.

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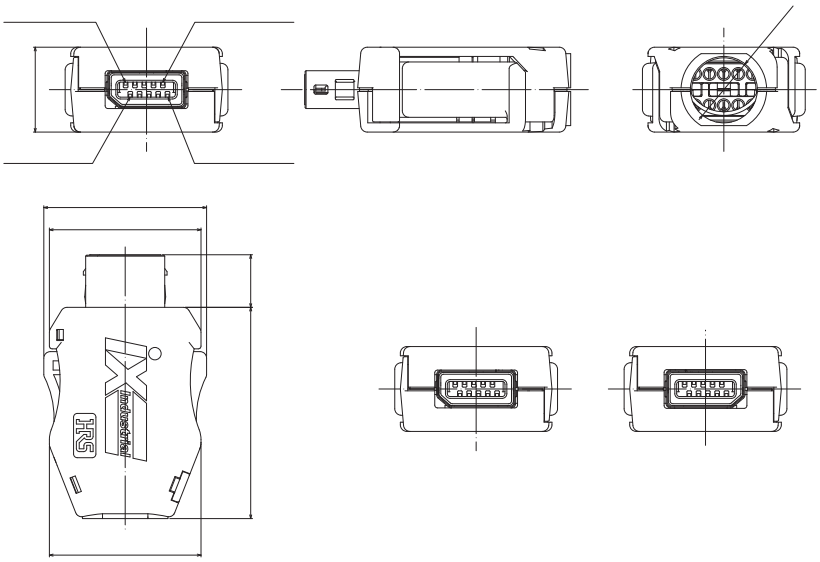
Plug

Straight



Part No.	HRS No.	Contact Area Plating	Purchase Unit
IX30G-A-10S-CV(7.0)	CL0251-0020-0-00	Gold Plated 0.2 μm	100pcs per tray
IX30G-A-10S-CV(7.0)(01)	CL0251-0020-0-01	Palladium-Nickel Plated 0.75 μm + Gold Plated 0.05 μm	
IX30G-B-10S-CV(7.0)	CL0251-0025-0-00	Gold Plated 0.2 μm	
IX30G-B-10S-CV(7.0)(01)	CL0251-0025-0-01	Palladium-Nickel Plated 0.75 μm + Gold Plated 0.05 μm	
IX31G-A-10S-CV(7.0)	CL0251-0023-0-00	Gold Plated 0.2 μm	100pcs per tray
IX31G-A-10S-CV(7.0)(01)	CL0251-0023-0-01	Palladium-Nickel Plated 0.75 μm + Gold Plated 0.05 μm	
IX31G-B-10S-CV(7.0)	CL0251-0024-0-00	Gold Plated 0.2 μm	
IX31G-B-10S-CV(7.0)(01)	CL0251-0024-0-01	Palladium-Nickel Plated 0.75 μm + Gold Plated 0.05 μm	
IX32G-A-8S-CV(7.0) (Note)	CL0251-0042-0-00	Gold Plated 0.2 μm	100pcs per tray
IX32G-A-8S-CV(7.0)(01) (Note)	CL0251-0042-0-01	Palladium-Nickel Plated 0.75 μm + Gold Plated 0.05 μm	
IX32G-B-8S-CV(7.0) (Note)	CL0251-0043-0-00	Gold Plated 0.2 μm	
IX32G-B-8S-CV(7.0)(01) (Note)	CL0251-0043-0-01	Palladium-Nickel Plated 0.75 μm + Gold Plated 0.05 μm	
IX40G-A-10S-CV(7.0)	CL0251-0022-0-00	Gold Plated 0.2 μm	100pcs per tray
IX40G-A-10S-CV(7.0)(01)	CL0251-0022-0-01	Palladium-Nickel Plated 0.75 μm + Gold Plated 0.05 μm	
IX40G-B-10S-CV(7.0)	CL0251-0032-0-00	Gold Plated 0.2 μm	
IX40G-B-10S-CV(7.0)(01)	CL0251-0032-0-01	Palladium-Nickel Plated 0.75 μm + Gold Plated 0.05 μm	

Note : Cable assembly for IX32G is possible up to 8 positions.
Contacts No. 3 and 8 do not have a hole to pass the wire though the IDC guide.

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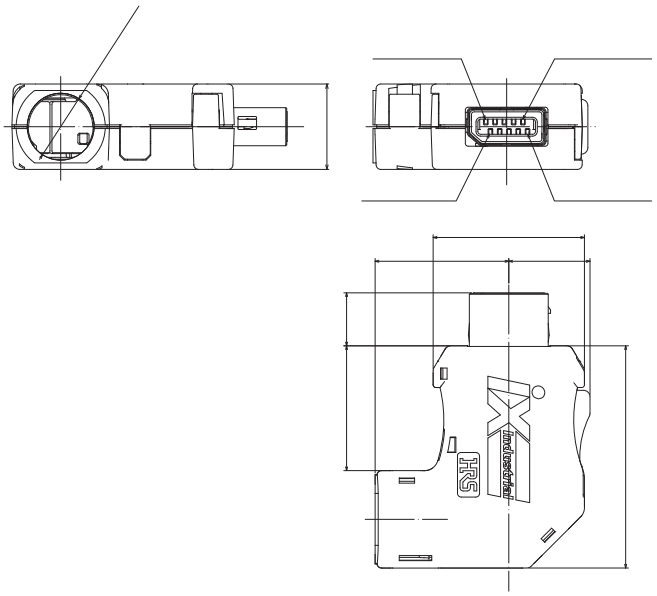
Right Angle, Downward Cabling



Part No.	HRS No.	Contact Area Plating	Purchase Unit
IX30G-A-10S-CVL1(7.0)	CL0251-0063-0-00	Gold Plated 0.2 μm	100pcs per tray
IX30G-A-10S-CVL1(7.0)(01)	CL0251-0063-0-01	Palladium-Nickel Plated 0.75 μm+ Gold Plated 0.05 μm	
IX30G-B-10S-CVL1(7.0)	CL0251-0064-0-00	Gold Plated 0.2 μm	
IX30G-B-10S-CVL1(7.0)(01)	CL0251-0064-0-01	Palladium-Nickel Plated 0.75 μm+ Gold Plated 0.05 μm	
IX31G-A-10S-CVL1(7.0)	CL0251-0067-0-00	Gold Plated 0.2 μm	100pcs per tray
IX31G-A-10S-CVL1(7.0)(01)	CL0251-0067-0-01	Palladium-Nickel Plated 0.75 μm+ Gold Plated 0.05 μm	
IX31G-B-10S-CVL1(7.0)	CL0251-0068-0-00	Gold Plated 0.2 μm	
IX31G-B-10S-CVL1(7.0)(01)	CL0251-0068-0-01	Palladium-Nickel Plated 0.75 μm+ Gold Plated 0.05 μm	
IX32G-A-8S-CVL1(7.0)(Note)	CL0251-0071-0-00	Gold Plated 0.2 μm	100pcs per tray
IX32G-A-8S-CVL1(7.0)(01)(Note)	CL0251-0071-0-01	Palladium-Nickel Plated 0.75 μm+ Gold Plated 0.05 μm	
IX32G-B-8S-CVL1(7.0)(Note)	CL0251-0072-0-00	Gold Plated 0.2 μm	
IX32G-B-8S-CVL1(7.0)(01)(Note)	CL0251-0072-0-01	Palladium-Nickel Plated 0.75 μm+ Gold Plated 0.05 μm	
IX40G-A-10S-CVL1(7.0)	CL0251-0075-0-00	Gold Plated 0.2 μm	100pcs per tray
IX40G-A-10S-CVL1(7.0)(01)	CL0251-0075-0-01	Palladium-Nickel Plated 0.75 μm+ Gold Plated 0.05 μm	
IX40G-B-10S-CVL1(7.0)	CL0251-0076-0-00	Gold Plated 0.2 μm	
IX40G-B-10S-CVL1(7.0)(01)	CL0251-0076-0-01	Palladium-Nickel Plated 0.75 μm+ Gold Plated 0.05 μm	

Note : Cable assembly for IX32G is possible up to 8 positions.
Contacts No. 3 and 8 do not have a hole to pass the wire though the IDC guide.

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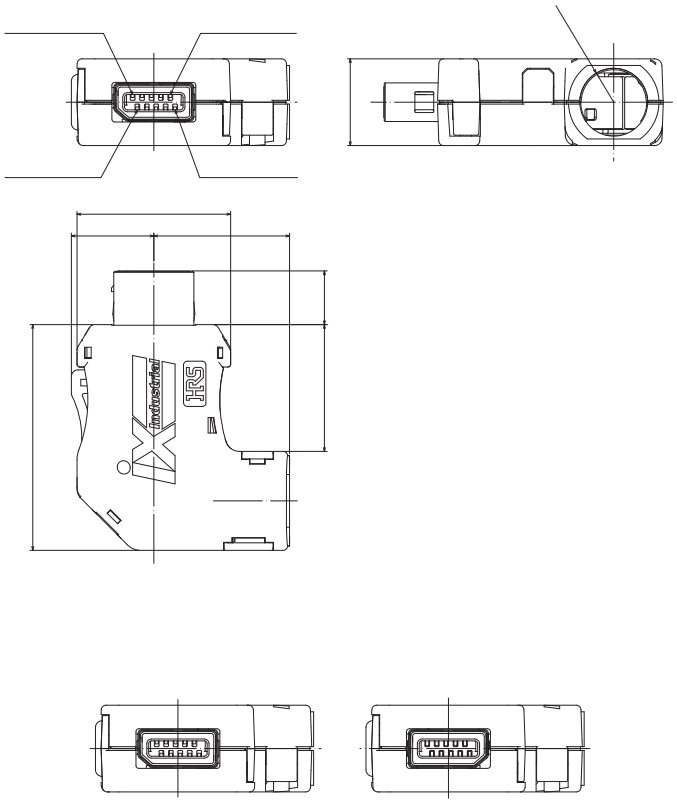
Right Angle, Upward Cabling



Part No.	HRS No.	Contact Area Plating	Purchase Unit
IX30G-A-10S-CVL2(7.0)	CL0251-0065-0-00	Gold Plated 0.2 μm	100pcs per tray
IX30G-A-10S-CVL2(7.0)(01)	CL0251-0065-0-01	Palladium-Nickel Plated 0.75 μm + Gold Plated 0.05 μm	
IX30G-B-10S-CVL2(7.0)	CL0251-0066-0-00	Gold Plated 0.2 μm	
IX30G-B-10S-CVL2(7.0)(01)	CL0251-0066-0-01	Palladium-Nickel Plated 0.75 μm + Gold Plated 0.05 μm	
IX31G-A-10S-CVL2(7.0)	CL0251-0069-0-00	Gold Plated 0.2 μm	100pcs per tray
IX31G-A-10S-CVL2(7.0)(01)	CL0251-0069-0-01	Palladium-Nickel Plated 0.75 μm + Gold Plated 0.05 μm	
IX31G-B-10S-CVL2(7.0)	CL0251-0070-0-00	Gold Plated 0.2 μm	
IX31G-B-10S-CVL2(7.0)(01)	CL0251-0070-0-01	Palladium-Nickel Plated 0.75 μm + Gold Plated 0.05 μm	
IX32G-A-8S-CVL2(7.0)(Note)	CL0251-0073-0-00	Gold Plated 0.2 μm	100pcs per tray
IX32G-A-8S-CVL2(7.0)(01)(Note)	CL0251-0073-0-01	Palladium-Nickel Plated 0.75 μm + Gold Plated 0.05 μm	
IX32G-B-8S-CVL2(7.0)(Note)	CL0251-0074-0-00	Gold Plated 0.2 μm	
IX32G-B-8S-CVL2(7.0)(01)(Note)	CL0251-0074-0-01	Palladium-Nickel Plated 0.75 μm + Gold Plated 0.05 μm	
IX40G-A-10S-CVL2(7.0)	CL0251-0077-0-00	Gold Plated 0.2 μm	100pcs per tray
IX40G-A-10S-CVL2(7.0)(01)	CL0251-0077-0-01	Palladium-Nickel Plated 0.75 μm + Gold Plated 0.05 μm	
IX40G-B-10S-CVL2(7.0)	CL0251-0078-0-00	Gold Plated 0.2 μm	
IX40G-B-10S-CVL2(7.0)(01)	CL0251-0078-0-01	Palladium-Nickel Plated 0.75 μm + Gold Plated 0.05 μm	

Note : Cable assembly for IX32G is possible up to 8 positions.
Contacts No. 3 and 8 do not have a hole to pass the wire though the IDC guide.

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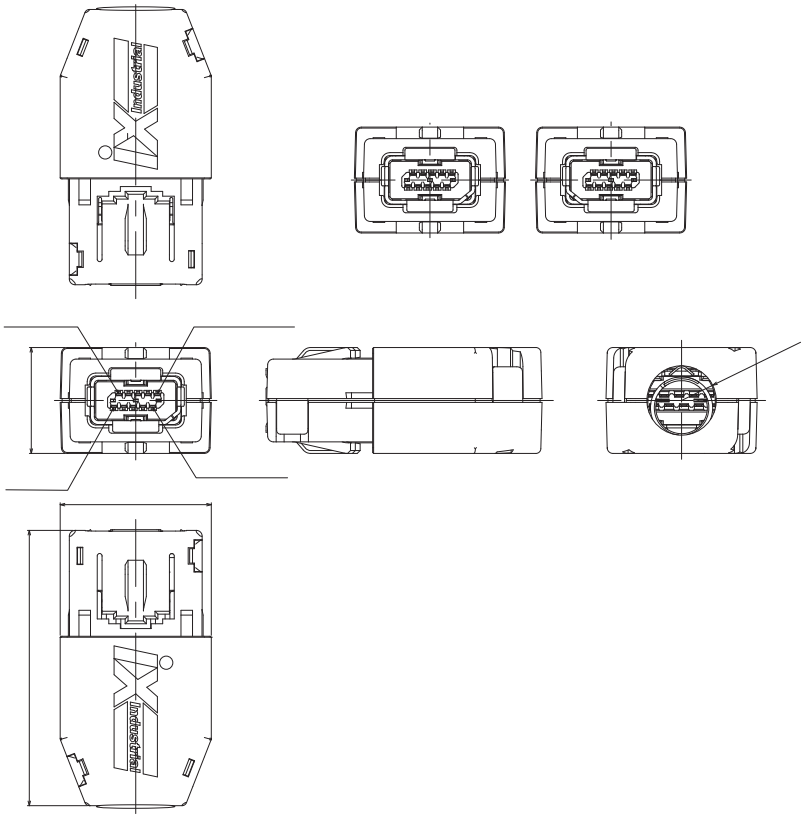
In-line Jack



Part No.	HRS No.	Contact Area Plating	Purchase Unit
IX40G-A-10P-JC(7.0)	CL0251-0109-0-00	Gold Plated 0.2 μm	100pcs per tray
IX40G-A-10P-JC(7.0)(01)	CL0251-0109-0-01	Palladium-Nickel Plated 0.75 μm + Gold Plated 0.05 μm	
IX40G-B-10P-JC(7.0)	CL0251-0111-0-00	Gold Plated 0.2 μm	
IX40G-B-10P-JC(7.0)(01)	CL0251-0111-0-01	Palladium-Nickel Plated 0.75 μm + Gold Plated 0.05 μm	

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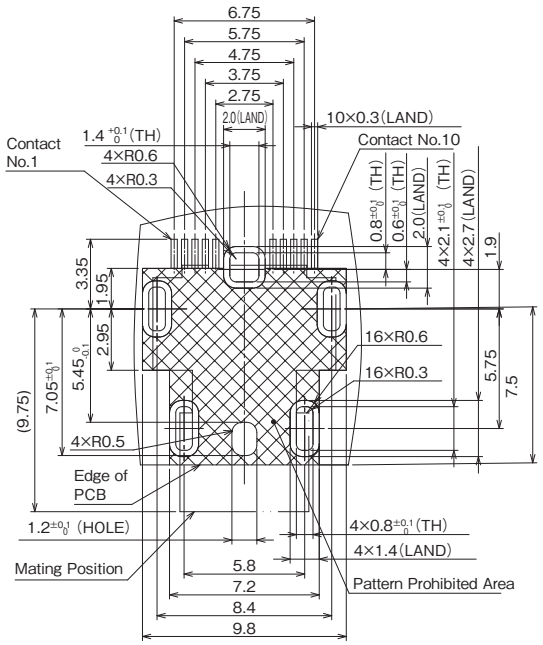
Recommended Land Pattern Dimensions

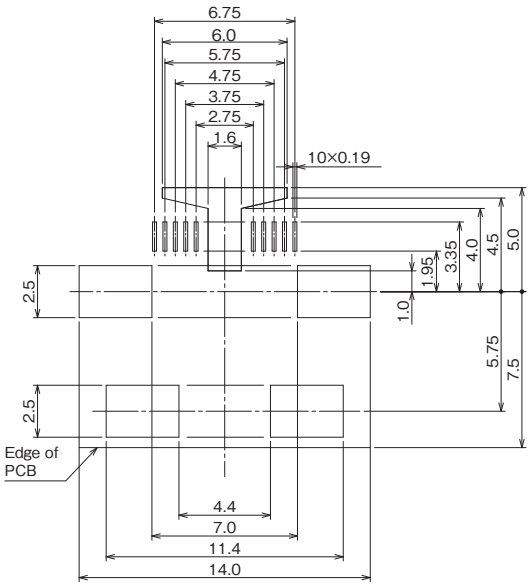
● IX61G-#-10P

Reference Board Mounting Dimensions (From Mounting Side) (t=1.6)



Note : Dimension tolerances not listed are ±0.05.

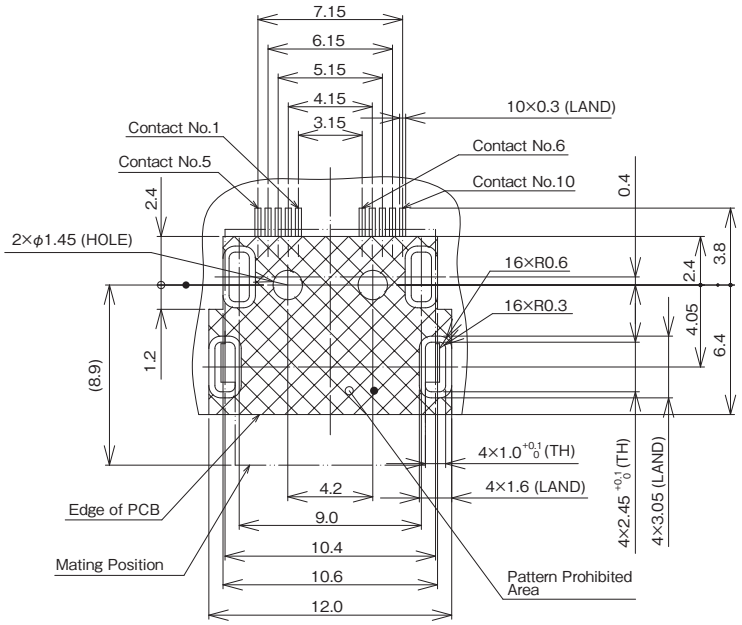
Recommended Metal Mask Pattern (t=0.15)



Note : Dimension tolerances not listed are ±0.02.

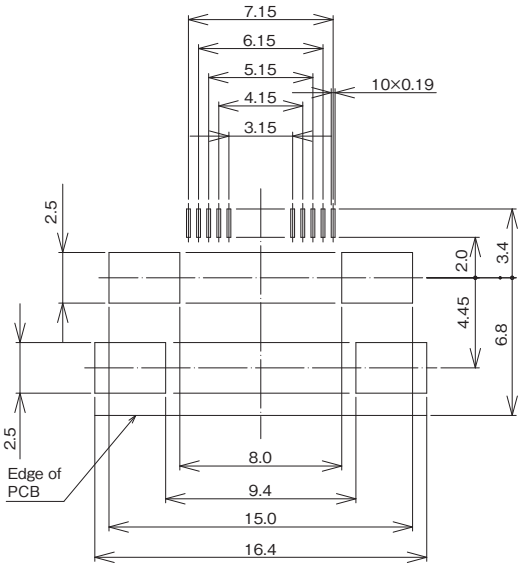
● IX60G-#-10P

Reference Board Mounting Dimensions (From Mounting Side) (t=1.6)



Note : Dimension tolerances not listed are ±0.05.

Recommended Metal Mask Pattern (t=0.15)



Note : Dimension tolerances not listed are ±0.02.

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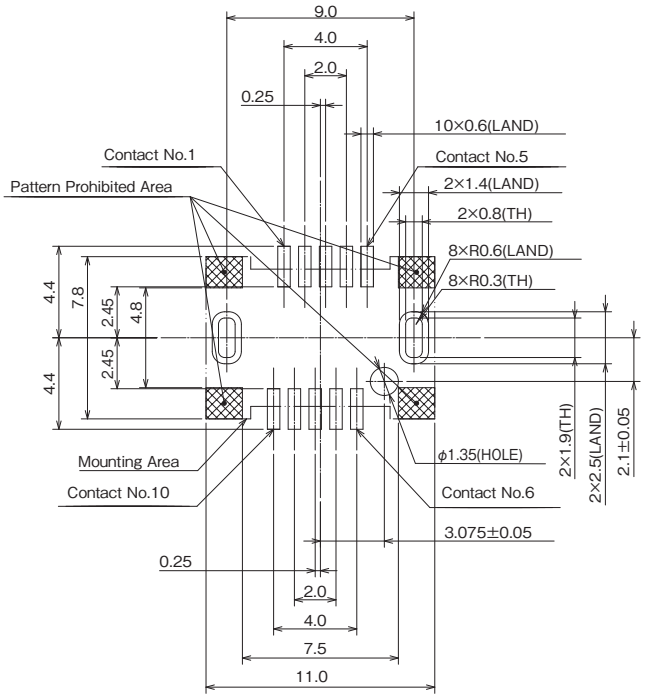
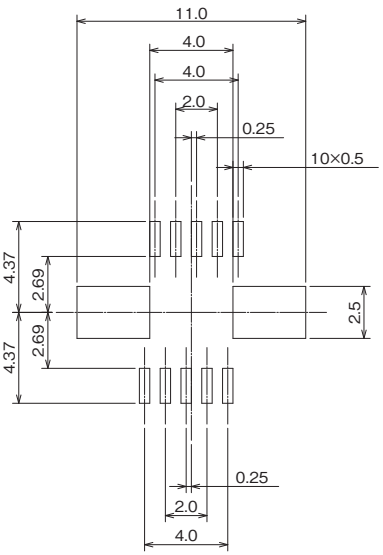
● IX80G-#-10P

Reference Board Mounting Dimensions (From Mounting Side) (t=1.6)



Note : Dimension tolerances not listed are ±0.05.

Recommended Metal Mask Pattern (t=0.15)



Note : Dimension tolerances not listed are ±0.02.

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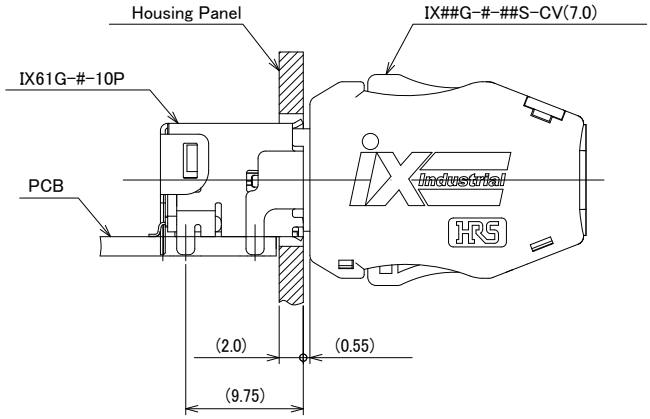
Panel Mounting Dimensions Diagram

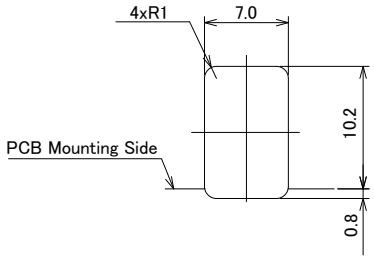
● IX61G-#-10P

Mated Condition

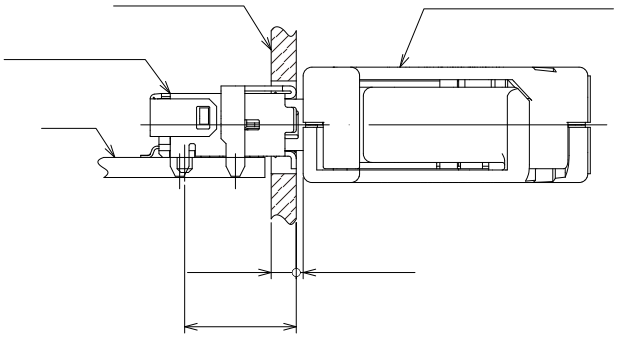


Reference Panel Cut-out Dimensions

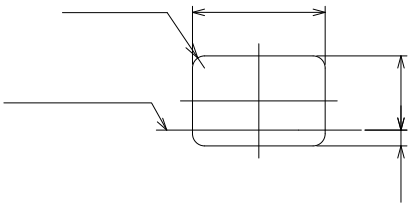
Note : Dimensions are for reference.



● IX60G-#-10P

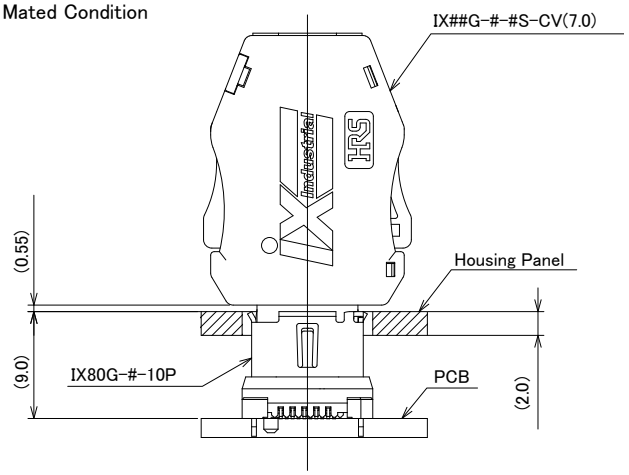


Reference Panel Cut-out Dimensions



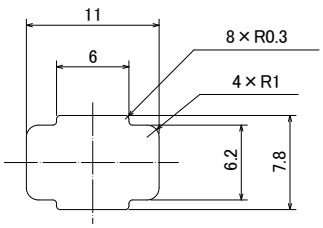
● IX80G-#-10P

Mated Condition



Reference Panel Cut-out Dimensions

Note : Dimensions are for reference.



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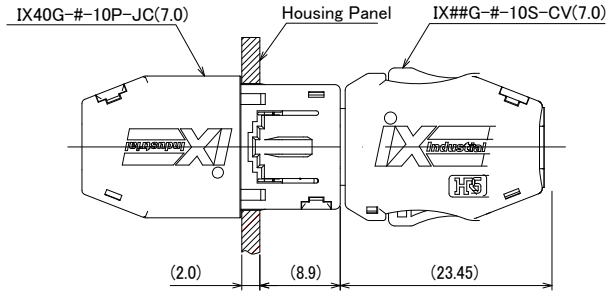
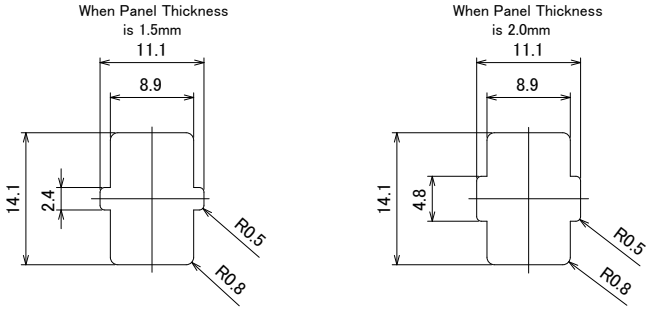
●IX40G-#-10P-JC

Mated Condition



Reference Panel Cut-out Dimensions

Note : Dimensions are for reference.



A chamfer of C0.1 is required in order to prevent scrappage to the cover case during panel installation. Number of panel installation can be used up to 10 times.

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Cable Assembly Tools

Part No.	HRS No.	Applicable Connector	Target Product
HT803/IXG-8/10S-63-72	CL0902-2218-0-00	IX##G-#-##S-CV(7.0)(##)	Straight Plug
HT803/IXG-10S-CVL-70	CL0902-2223-0-00	IX##G-#-##S-CVL1(7.0)(##) IX##G-#-##S-CVL2(7.0)(##)	Right Angle
HT803/IX40G-10P-JC70	CL0902-2228-0-00	IX40G-#-10P-JC(7.0)(##)	In-line Jack

Adapter for Cabling Certification Testing

This adapter requires the DSX CableAnalyzer™ from Fluke Networks for use.

Part No.	HRS No.
DSX-CHA-5-IX-S	CL0251-1001-0-00

(Note) DSX CableAnalyzer™ is a registered trademark of Fluke Networks.

Applicable Cables List

A list of applicable cables is available on the Hirose website.
(https://www.hirose.com/product/en/pr/ix_industrial/applicable_cable_list/)

While Taking into Consideration

Specifications mentioned in this catalog are reference values.
When considering to order or use this product, please review the Drawing and Product Specifications sheets.
Use an appropriate cable when using the connector in combination with cables.
If considering usage of a non-specified cable, please contact your sales representative.
If assembly process is done by jigs & tools which are not identified by Hirose, the warranty of the product may be affected.
If considering usage for below mentioned applications, please contact your sales representative.
In cases where the application will demand a high level of reliability, such as automotive, medical instruments, public infrastructure, aerospace/defense etc. Hirose must review before assurance of reliability can be given.

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https://www.hirose.com

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