

## Compact Waterproof Automotive In-line Connector

CONNECTOR

**MX80 Series**MB-0354-7  
Dec.2024**RoHS Compliant**

The MX80 Series is a family of compact waterproof automotive in-line connectors. They are miniaturized by design and ideal for use in areas where vehicle mounting space is limited. MX80 Series connectors support a varying wire size range for exceptional power and control. In addition, variations such as alternate key codes, IPX9K type, and more will be added in the future.

**Application**

Example automotive applications include but are not limited to side view mirrors, interior/exterior lighting, sunroof modules, body sensors, and peripheral devices.

**Features**

- ISO/JASO/EWCAP/VDA standard 0.64 mm tab size
- Terminal Position Assurance (TPA) on pin and socket housing
- USCAR-2 and LV214 Tested
- IPX7 ingress protection rated (4 positions also available in IPX9K)
- Compatible with 2.54mm pitch pin contacts
- Integrated bracket on pin housings support chassis fastening vehicle clips

**General Specifications**

Number of Contacts	2, 3, 4, 6, 8, (10) and 12 positions (6 positions is socket only. 10 positions option is a 12 position with 2 cavities plugged)			
Operating Temperature Range	-40 ~ +125 °C <sup>1</sup>			
Applicable Wire	0.13 ~ 1.0mm <sup>2</sup> nominal cross-section Cable types recommended: (FLRY-A, FLRY-B, AEESX, FLCUSNRY, etc.)			
Rated Current <sup>2</sup>	Wire Size	Number of Positions		
		Terminal only	2	12
	0.13 mm <sup>2</sup>	4.3A	4.2 A	2.4A
	0.35 mm <sup>2</sup>	7.5A	7.1 A	4.1A
	1.0 mm <sup>2</sup>	11.4A	10.3 A	6.6A
Insulation Resistance	100MΩ min. at 500V DC (1 minute)			
Vibration Classification	USCAR-2 : V2, LV214 : Severity 3			

Note 1. This range includes temperature rise from current load.

Note 2. Ambient temperature is 80°C. Contact JAE for rating at other temperatures.

## Ordering Information

MX80 A 02 S Z1 A

Series: MX80

Connector Type:

Socket) A: IPX7 without shroud

B: IPX7 with shroud

E: IPX9K

Pin) B: IPX7, D: IPX9K

A ~ C:  
Mating Key Variations

Modification Code

Z1: Standard

A10: 10 position with cavities plugged

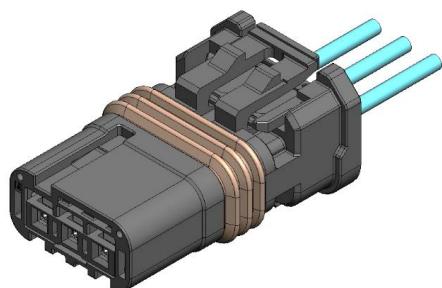
Number of Contacts: 2 ~ 12 positions

\*W8: 8 positions with 2 rows

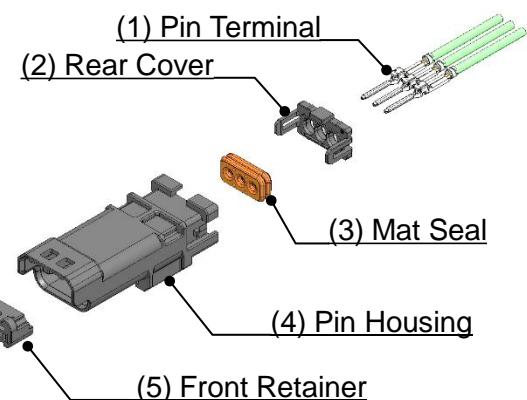
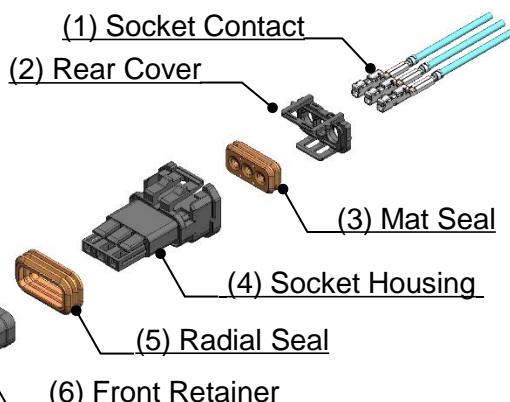
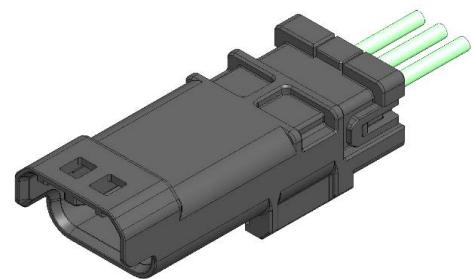
S: Socket, P: Pin

## Configuration / Material and Finish

## Socket Connector



## In-line Pin Connector



Component	Material / Finish
(1) Socket Contact <sup>3</sup>	Copper alloy / Tin plating
(2) Rear Cover	PBT-GF10
(3) Mat Seal	Silicone Rubber
(4) Socket Housing	PBT-GF10
(5) Radial Seal	Silicone Rubber
(6) Front Retainer	PBT-GF10

Component	Material / Finish
(1) Pin Contact <sup>3</sup>	Copper alloy / Tin plating
(2) Rear Cover	PBT-GF10
(3) Mat Seal	Silicone Rubber
(4) Pin Housing	PBT-GF10
(5) Front Retainer	PBT-GF10

Note 3. Contacts are sold separately and are not integrated into connector at the time of delivery.

## Part Numbers and Drawing Numbers

## ■ Socket Connector / In-line Pin Connector

Standard IPX7 Type

Number of Contacts	Socket Connector			In-line Pin Connector		Pin Interface Drawing Number
	Part Number	Drawing Number		Part Number	Drawing Number	
2	MX80A02SZ1A	SJ121265	↔	MX80B02PZ1A	SJ121264	SJ121432
	MX80A02SZ1B <sup>4</sup>	SJ121361	↔	MX80B02PZ1B <sup>4</sup>	SJ124846	
	MX80A02SZ1C <sup>4</sup>	SJ121362	↔	MX80B02PZ1C <sup>4</sup>	SJ124847	
3	MX80A03SZ1A	SJ121229	↔	MX80B03PZ1A	SJ121228	SJ121433
	MX80A03SZ1B <sup>4,5</sup>	SJ121383	↔			
4	MX80A04SZ1A	SJ121382	↔	MX80B04PZ1A	SJ121381	SJ121434
	MX80A04SZ1B <sup>4</sup>	SJ121385	↔	MX80B04PZ1B <sup>4</sup>	SJ124848	
	MX80A04SZ1C <sup>4</sup>	SJ121386	↔	MX80B04PZ1C <sup>4</sup>	SJ124849	
6	MX80A06SZ1A <sup>5</sup>	SJ123032	↔			SJ123034
	MX80A06SZ1B <sup>4,5</sup>	SJ123033	↔			
	MX80A06SZ1C <sup>4,5</sup>	SJ124279	↔			
8	MX80BW8SZ1A	SJ126077	↔	MX80BW8PZ1A	SJ126074	SJ <b>TBD</b> 15
	MX80BW8SZ1B <sup>4</sup>	SJ <b>TBD</b> 13	↔	MX80BW8PZ1B <sup>4</sup>	SJ <b>TBD</b> 75	
10	MX80B12SA10A	SJ126081	↔	MX80B12PA10A	SJ126079	SJ130712
12	MX80B12SZ1A	SJ126080	↔	MX80B12PZ1A	SJ126078	
	MX80B12SZ1B <sup>4</sup>	SJ <b>TBD</b> 22	↔	MX80B12PZ1B <sup>4</sup>	SJ <b>TBD</b> 48	

Note 4. This product is different mating key type.

Note 5. This product is for direct coupler applications only. Please refer to the pin interface drawing to design the pin side into your device.

IPX9K type

Number of Contacts	Socket Connector			In-line Pin Connector		Pin Interface Drawing Number
	Part Number	Drawing Number		Part Number	Drawing Number	
4	MX80E04SZ1A	SJ124825	↔	MX80D04PZ1A	SJ124824	SJ121434
10	MX80E12SA10A	<b>TBD</b>	↔	MX80D12PA10A	<b>TBD</b>	SJ130712
12	MX80E12SZ1A		↔	MX80D12PZ1A		

Part Numbers and Drawing Numbers
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■ Socket Contact

Part Number	Common Drawing No.	Individual Drawing No.	Applicable Wire
MX80S08K3F1	SJ121646	SJ121371	0.75 ~ 1.0mm <sup>2</sup> wire (FLRY-A, FLRY-B, AESSX)
MX80S08K4F1		SJ121372	0.3 ~ 0.5mm <sup>2</sup> wire (FLRY-A, FLRY-B, AESSX)
MX80S08K5F1		SJ121373	0.13 ~ 0.22mm <sup>2</sup> wire (FLRY-A, FLCUSNRY)

■ Pin Contact

Part Number	Common Drawing No.	Individual Drawing No.	Applicable Wire
MX80P08K3F1	SJ121645	SJ121482	0.75 ~ 1.0mm <sup>2</sup> wire (FLRY-A, FLRY-B, AESSX)
MX80P10K4F1		SJ121374	0.3 ~ 0.5mm <sup>2</sup> wire (FLRY-A, FLRY-B, AESSX)
MX80P10K5F1		SJ121483	0.13 ~ 0.22mm <sup>2</sup> wire (FLRY-A, FLCUSNRY)

■ Dummy plug

Part Number	Drawing Number	Appearance	Applicable Connector
MX80A000XD1	SJ122489		For Standard IPX7 Type
MX19000XD1	SJ110015		
MX60A000XD2	SJ114480		For IPX9K Type

Note 6. Dummy plug is used to seal off cavities that are not used.

■ Harness cover

Part Number	Drawing Number	Appearance
MX80A012XH1	SJ130291	<p><u>Assembled condition</u></p>

## Applicable Tools

Tool type	Tool Part number	Applicable Contact and Connector	Tool Handling Manual
Hand Crimp Tool	CT150-19C-MX80	Contact for 0.75~1.0mm <sup>2</sup> wire	T700459
	CT150-19D-MX80	Contact for 0.3~0.5mm <sup>2</sup> wire	T700460
	CT150-19E-MX80	Contact for 0.13~0.22mm <sup>2</sup> wire	T700461
Semi-automated Applicator	3502-MX80-2	All MX80 Contacts	T703574
	3502-MX81-2	All MX80 Contacts (Compatible with MX81 Contacts)	TBD <sup>5</sup>
Contact Extraction Tool	ET-MX80S	All Socket Connectors	T711250
	ET-MX80P	In-line Pin Connectors of 2,3,4 positions (Compatible with Socket)	T711251
	ET-MX80P-2	All In-line Pin Connectors (Compatible with Socket)	TBD <sup>6</sup>
Retainer Extraction Tool (Socket requires no tool)	RT-MX80P	In-line Pin Connectors (2,3,4 positions)	T714405
	RT-MX80P-2	All In-line Pin Connectors	TBD <sup>1</sup>
Guide For Retainer Extraction Tool	AT-MX80P-1	In-line Pin Connector (3 positions)	(T714405)
	AT-MX80P-2	In-line Pin Connectors (2,4 positions)	
	AT-MX80P-4	In-line Pin Connectors (8,12 positions)	(TBD <sup>1</sup> )

Note 7. For details on how to use each tool, refer to the tool handling manual and connector handling manual.

## Specification and Handling Manual

Specification	Connector Handling Manual	Contact Crimping Manual
JACS-11280-1 (USCAR-2) <sup>8</sup>	JAHL-11280 (2,3,4,6 positions)	JAHL-11280-1
JACS-11280-2 (LV214) <sup>8</sup>	JAHL-11280-7 (8,12 positions)	

Note 8. There are some deviations to each specifications.

## Outer Dimension

## ■ Socket Connector of 2,3,4,6 positions (Image is 4 position)

## Standard IPX7 Type

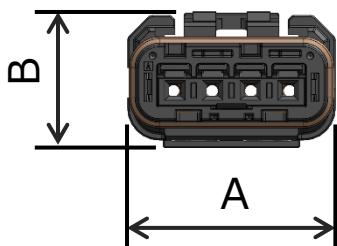
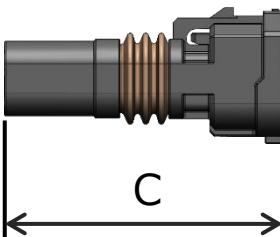
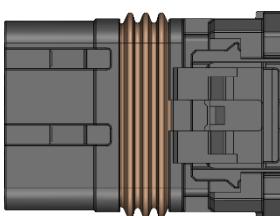
Unit: mm

No. of Contacts	A	B	C
2	8.9		
3	11.45		
4	14		
6	19.1		

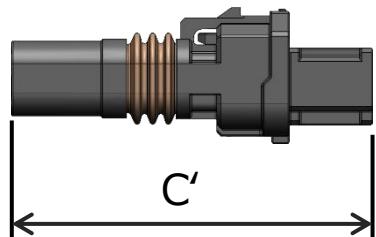
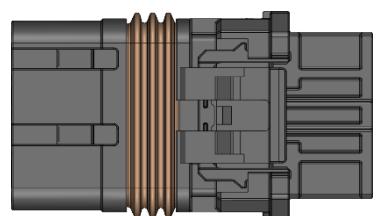
## IPX9K Type

Unit: mm

No. of Contacts	A	B	C'
4	14	9.1	24.35



(After Retainer is assembled)



(After Retainer is assembled)

## ■ Socket Connector of 8,12 positions (Image is 12 position)

## Standard IPX7 Type

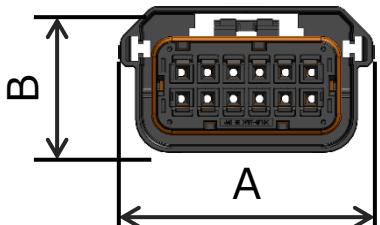
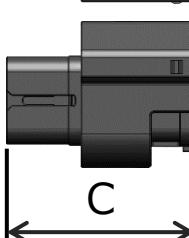
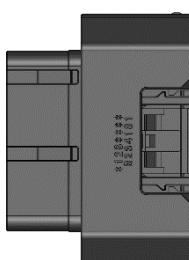
Unit: mm

No. of Contacts	A	B	C
8	20.4		
12	25.5	14.4	18.7

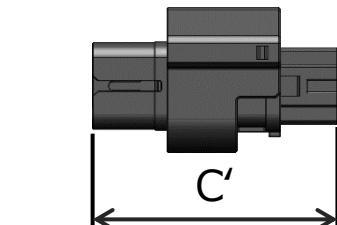
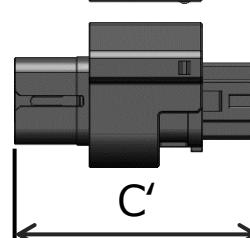
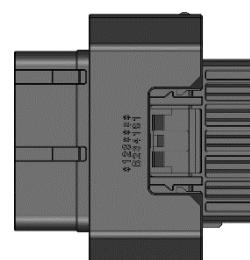
## IPX9K Type

Unit: mm

No. of Contacts	A	B	C'
12	25.5	14.4	24.35



(After Retainer is assembled)



(After Retainer is assembled)

## Outer Dimension

## ■ In-line Pin Connector of 2,3,4 positions (Image is 4 position)

## Standard IPX7 Type

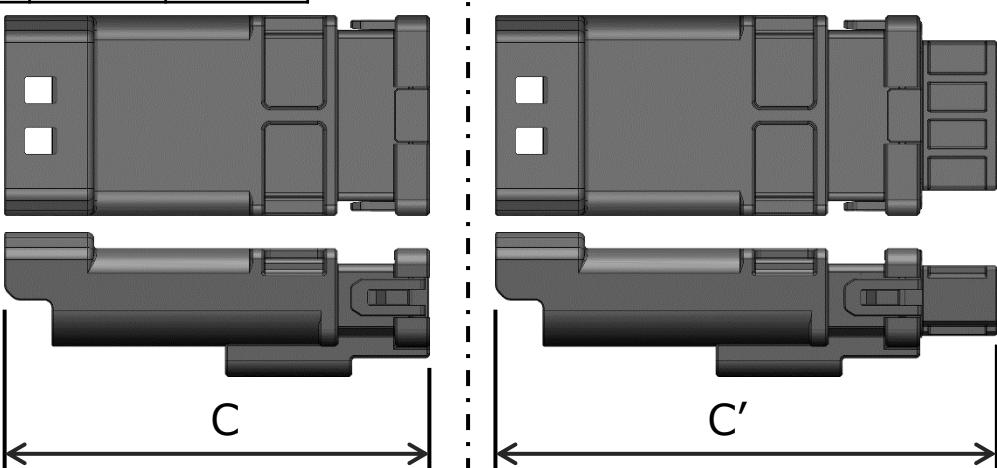
Unit: mm

No. of Contacts	A	B	C	
2	9.9	10.4	31.8	
3	12.45	10.75		
4	15			

## IPX9K Type

Unit: mm

No. of Contacts	A	B	C'
4	15	10.75	37.45



## ■ In-line Pin Connector of 8,12 positions (Image is 12 position)

## Standard IPX7 Type

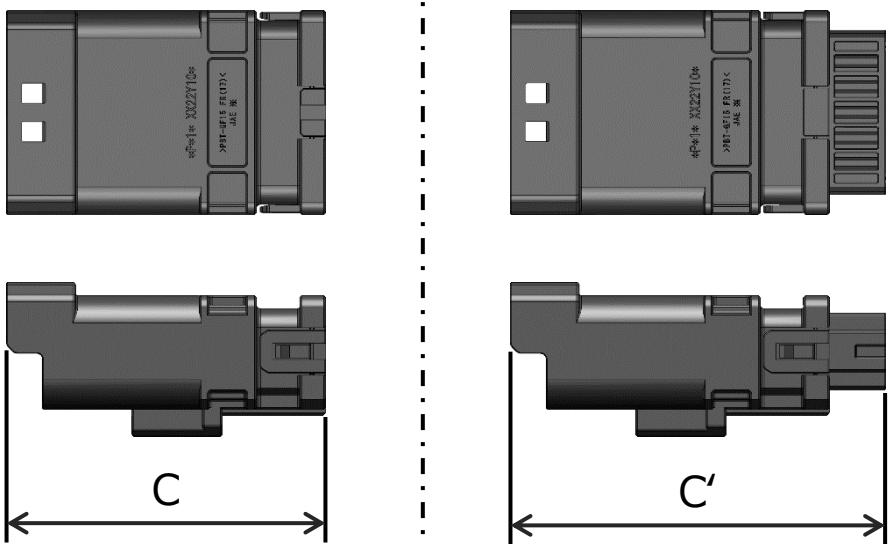
Unit: mm

No. of Contacts	A	B	C
8	15.2	15.3	31.8
12	20.3		

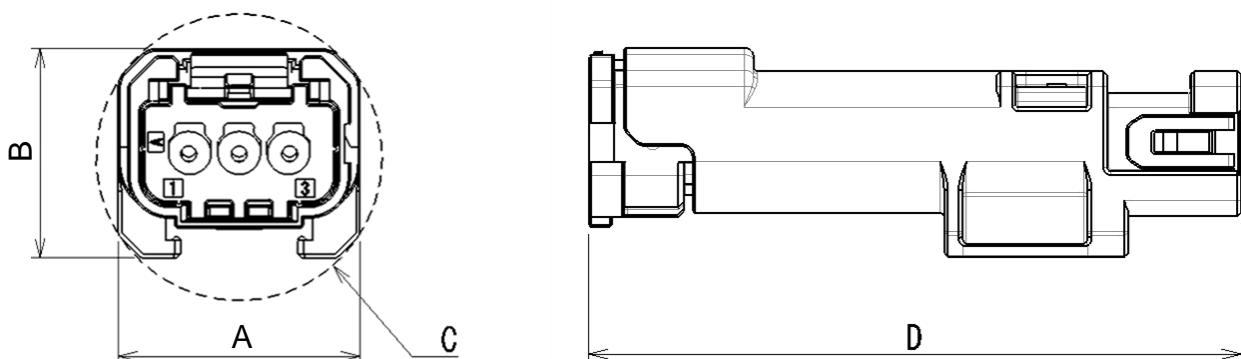
## IPX9K Type

Unit: mm

No. of Contacts	A	B	C'
12	20.3	15.3	37.45



## Dimensions (when mated)



Number of Contacts	A	B	C <sup>9</sup>	D
2	9.9	10.4	Φ13.35	33.6
3	12.45	10.75	Φ14.75	
4	15		Φ16.15	
8	20.4	16.25	Φ20.95	
12	25.5		Φ25.75	

Note 9. The above dimensions are the target value for a circumscribed circle.  
Please note that each connector's recommended through-hole size is "C + 2mm".

**Notice:**

1. The values specified in this brochure are only for reference. The products and their specifications are subject to change without notice. Contact our sales staff for further information before considering or ordering any of our products. For purchase, a product specification must be agreed upon.

2. Users are requested to provide protection circuits and redundancy circuits to ensure safety of the equipment, and sufficiently review the suitability of JAE's products to the equipment.

3. The products presented in this brochure are designed for the uses recommended below.

We strongly suggest you contact our sales staff when considering use of any of the products in any other way than the recommended applications or for a specific use that requires an extremely high reliability.

(1) Applications that require consultation:

(i) Please contact us if you are considering use involving a quality assurance program that you specify or that is peculiar to the industry, such as:

Automotive electrical components, train control, telecommunications devices (mainline), traffic light control, electric power, combustion control, fire prevention or security systems, disaster prevention equipment, etc.

(ii) We may separately give you our support with a quality assurance program that you specify, when you think of a use such as :

Aviation or space equipment, submarine repeaters, nuclear power control systems, medical equipment for life support, etc.

(2) Recommended applications include:

Computers, office appliances, telecommunications devices (terminals, mobile units), measuring equipment, audiovisual equipment, home electric appliances, factory automation equipment, etc.

**Japan Aviation Electronics Industry, Limited**

\* The specifications in this brochure are subject to change without notice. Please contact JAE for information.