

Compact Waterproof Automotive In-line Connector

CONNECTOR

MX80 Series

MB-0354-6

Sep.2023

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, an IPX9K type is available for 4 positions.

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

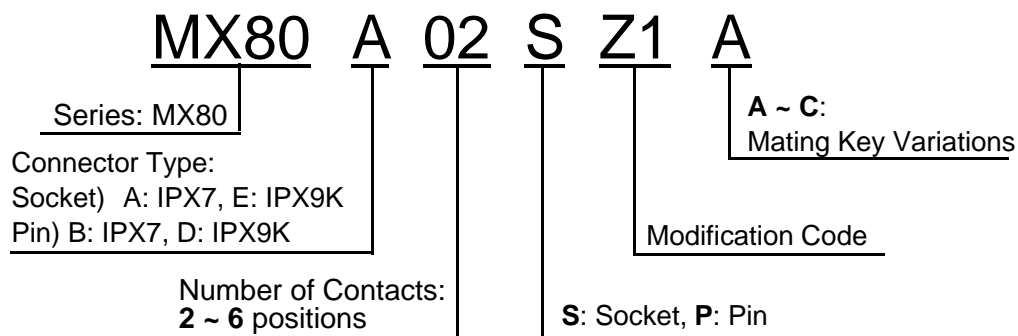
General Specifications

| | | | | |
|---------------------------------|---|---------------------|--------|-------|
| Number of Contacts | 2, 3, 4 and 6 positions (6 positions is socket only) | | | |
| Operating Temperature Range | -40 ~ +125 °C ¹ | | | |
| Applicable Wire | 0.13 ~ 1.0mm ² nominal cross-section Cable types recommended: (FLRY-A, FLRY-B, AESSX, FLCUSNRY, etc.) | | | |
| Rated Current ² | Wire Size | Number of Positions | | |
| | | 2 | 3 | 4 |
| | 0.13 mm ² | 4.2 A | 3.7 A | 3.6 A |
| | 0.35 mm ² | 7.1 A | 6.4 A | 5.8 A |
| | 1.0 mm ² | 10.3 A | 10.0 A | 9.5 A |
| Dielectric Withstanding Voltage | AC 500V (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.

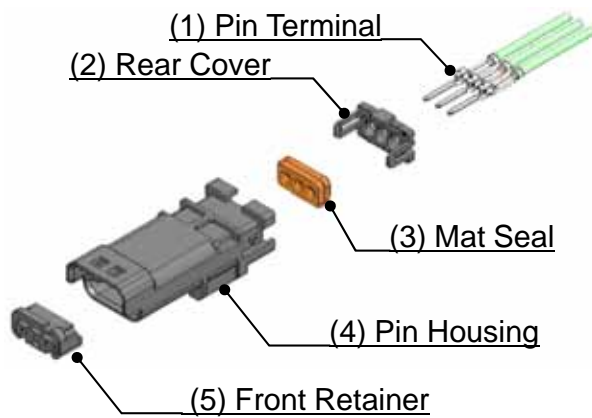
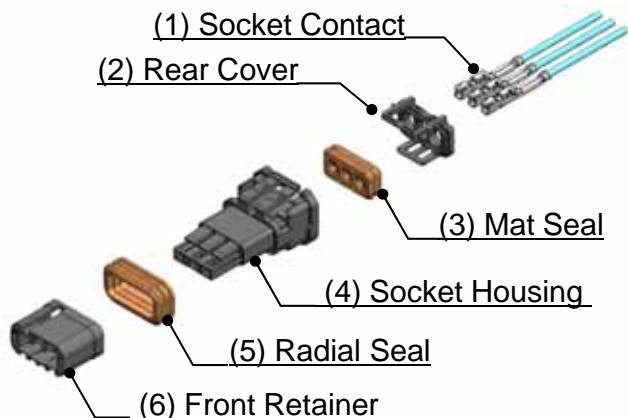
Ordering Information



Configuration / Material and Finish

Socket Connector

In-line Pin Connector



| Component | Material / Finish |
|---------------------------------|----------------------------|
| (1) Socket Contact ³ | 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 ³ | 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 ⁴ | SJ121361 | ↔ | MX80B02PZ1B ⁴ | SJ124846 | |
| | MX80A02SZ1C ⁴ | SJ121362 | ↔ | MX80B02PZ1C ⁴ | SJ124847 | |
| 3 | MX80A03SZ1A | SJ121229 | ↔ | MX80B03PZ1A | SJ121228 | SJ121433 |
| | MX80A03SZ1B ^{4,5} | SJ121383 | ↔ | | | |
| 4 | MX80A04SZ1A | SJ121382 | ↔ | MX80B04PZ1A | SJ121381 | SJ121434 |
| | MX80A04SZ1B ⁴ | SJ121385 | ↔ | MX80B04PZ1B ⁴ | SJ124848 | |
| | MX80A04SZ1C ⁴ | SJ121386 | ↔ | MX80B04PZ1C ⁴ | SJ124849 | |
| 6 | MX80A06SZ1A ⁵ | SJ123032 | ↔ | | | SJ123034 |
| | MX80A06SZ1B ^{4,5} | SJ123033 | ↔ | | | |
| | MX80A06SZ1C ^{4,5} | SJ124279 | ↔ | | | |

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 |

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|----------------------------------|
| Part Numbers and Drawing Numbers |
|----------------------------------|

Socket Contact

| Part Number | Drawing Number | Applicable Wire |
|-------------|----------------|--|
| MX80S08K3F1 | SJ121371 | 0.75 ~ 1.0mm ² wire (FLRY-A, FLRY-B, AESSX) |
| MX80S08K4F1 | SJ121372 | 0.3 ~ 0.5mm ² wire (FLRY-A, FLRY-B, AESSX) |
| MX80S08K5F1 | SJ121373 | 0.13 ~ 0.22mm ² wire (FLRY-A, FLCUSNRY) |

Pin Contact

| Part Number | Drawing Number | Applicable Wire |
|-------------|----------------|--|
| MX80P08K3F1 | SJ121482 | 0.75 ~ 1.0mm ² wire (FLRY-A, FLRY-B, AESSX) |
| MX80P10K4F1 | SJ121374 | 0.3 ~ 0.5mm ² wire (FLRY-A, FLRY-B, AESSX) |
| MX80P10K5F1 | SJ121483 | 0.13 ~ 0.22mm ² 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.

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| 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 ² wire | T700459 |
| | CT150-19D-MX80 | Contact for 0.3 ~ 0.5mm ² wire | T700460 |
| | CT150-19E-MX80 | Contact for 0.13 ~ 0.22mm ² wire | T700461 |
| Semi-automated Applicator | 3502-MX80-2 | All Contacts | T703574 |
| Contact Extraction Tool | ET-MX80S | All Socket Connectors | T711250 |
| | ET-MX80P | All In-line Pin Connectors | T711251 |
| Retainer Extraction Tool | RT-MX80P | All In-line Pin Connectors | T714405 |
| 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) | |

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 |
|-------------------------------------|---------------------------|
| JACS-11280-1 (USCAR-2) ⁸ | JAHL-11280 |
| JACS-11280-2 (LV214) ⁸ | |

Note 8. There are some deviations to each specifications.

Outer Dimension

*Below is 4 positions type

Socket Connector

Standard IPX7 Type

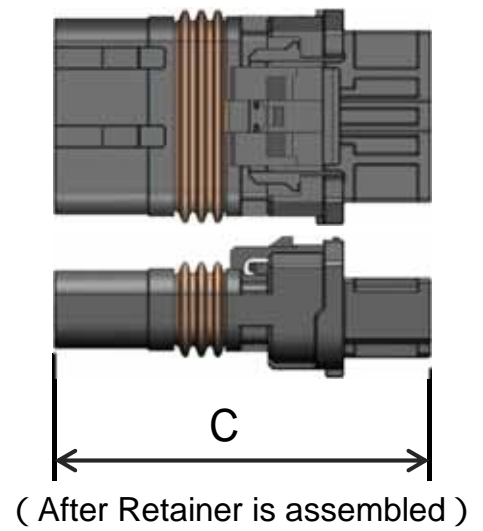
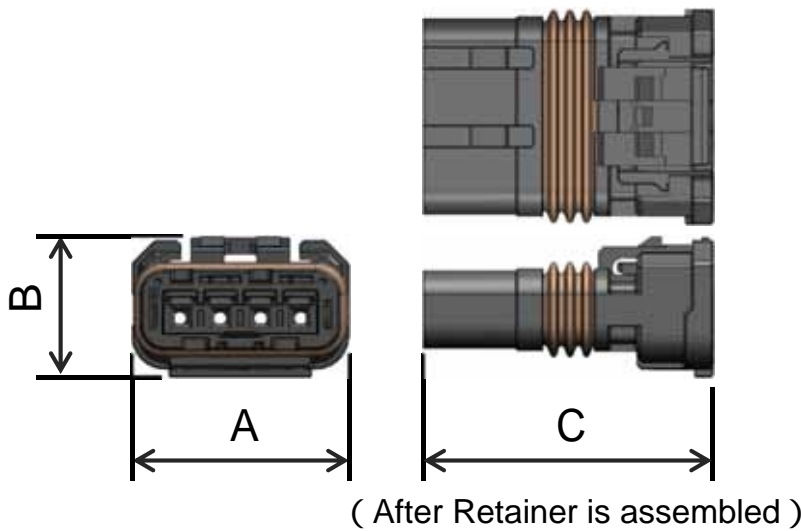
Unit: mm

| No. of Contacts | A | B | C |
|-----------------|-------|-----|------|
| 2 | 8.9 | 9.1 | 18.7 |
| 3 | 11.45 | | |
| 4 | 14 | | |
| 6 | 19.1 | | |

IPX9K Type

Unit: mm

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



In-line Pin Connector

Standard IPX7 Type

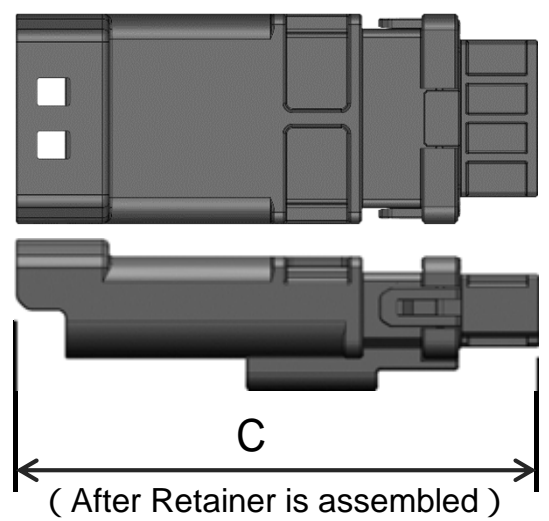
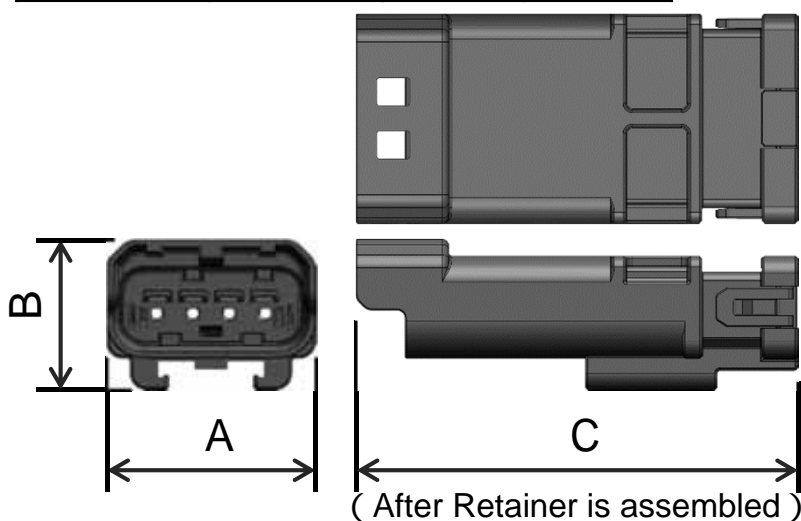
Unit: mm

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

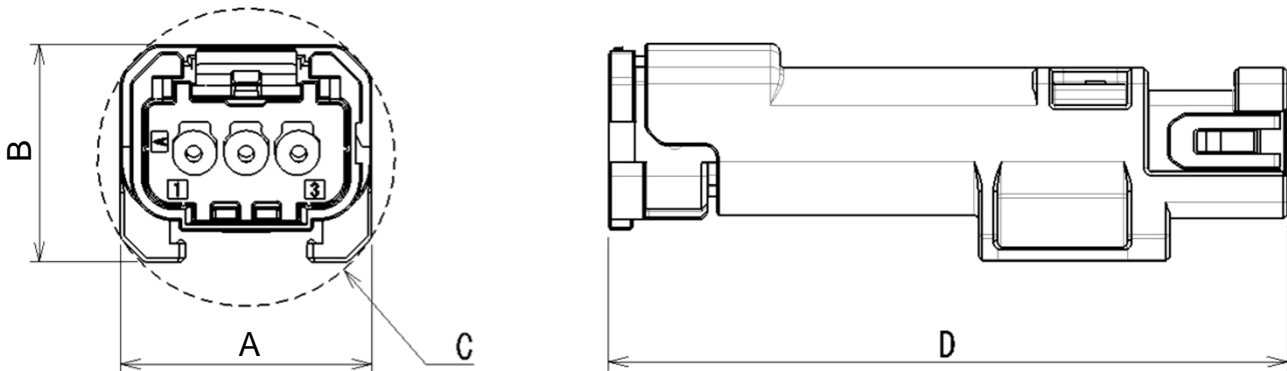
IPX9K Type

Unit: mm

| No. of Contacts | A | B | C' |
|-----------------|----|-----|-------|
| 4 | 14 | 9.1 | 37.45 |



Dimensions (when mated)



Unit: mm

| Number of Contacts | A | B | C ⁹ | D |
|--------------------|-------|-------|----------------|------|
| 2 | 9.9 | 10.4 | ∅13.35 | 33.6 |
| 3 | 12.45 | 10.75 | ∅14.75 | |
| 4 | 15 | | ∅16.15 | |

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.
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Japan Aviation Electronics Industry, Limited

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