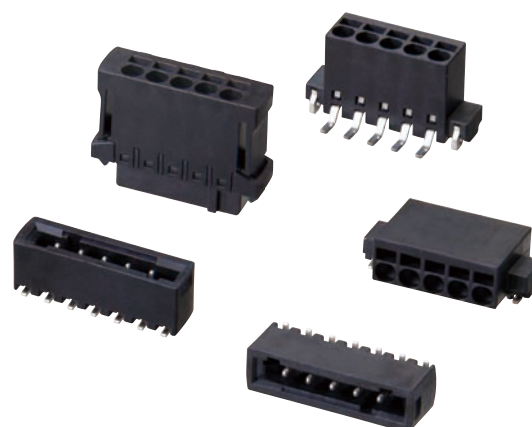


# XW4H/XW4K/XW4L

PCB Terminal Blocks: Push-in SMT Terminals with 2.54mm Pitch

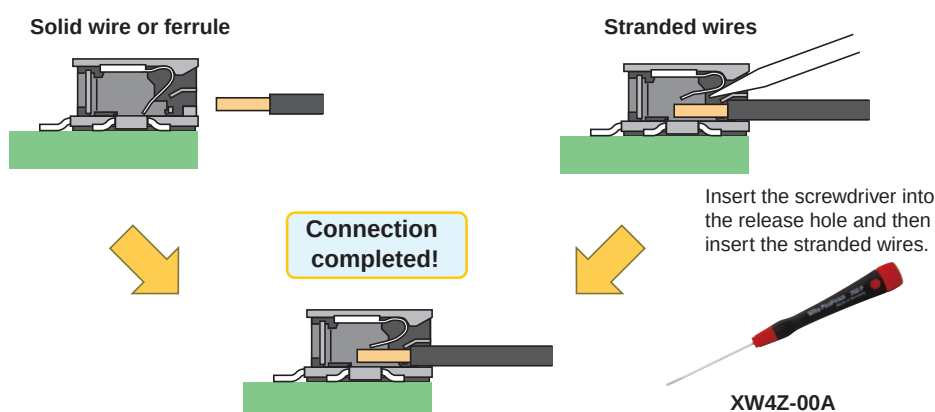
## Push-in Terminals to Easily Complete Connections. PCB Terminal Blocks with 2.54mm Pitch.

- Push-in connection method allows repeated repairs.
- Hold-down structure for strength on PCBs.
- Active lock mechanism for superior vibration and shock resistance.
- Both vertical and horizontal models available.
- Suction cover included to enable automatic mounting.  
(XW4K/XW4L vertical models)
- Can be mounted to the back surfaces of PCBs.
- Small reel are available. (XW4K/XW4L only)

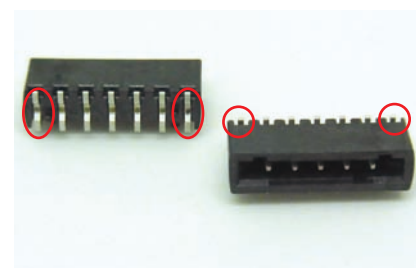
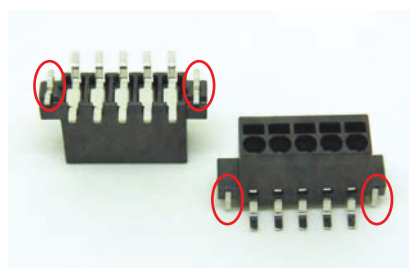
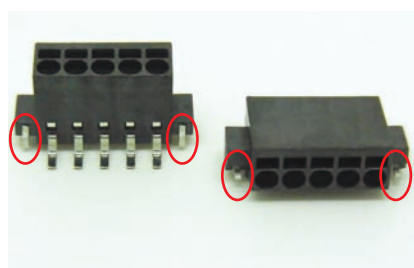


## Features

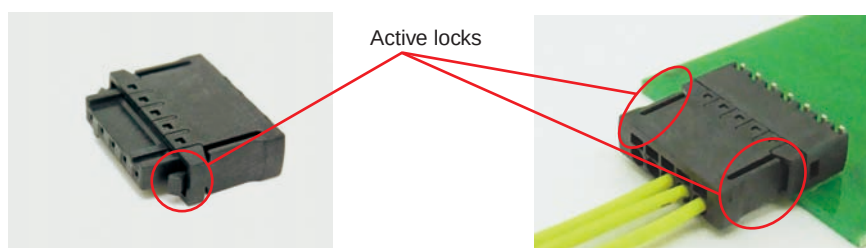
- Just insert solid wires or ferrules to complete wiring. With Stranded wires, all you need is a flat-blade screwdriver.



- Hold-downs are provided on both ends to achieve robust mounting by increasing solder mounting strength.  
○ The hold-downs are circled in red.

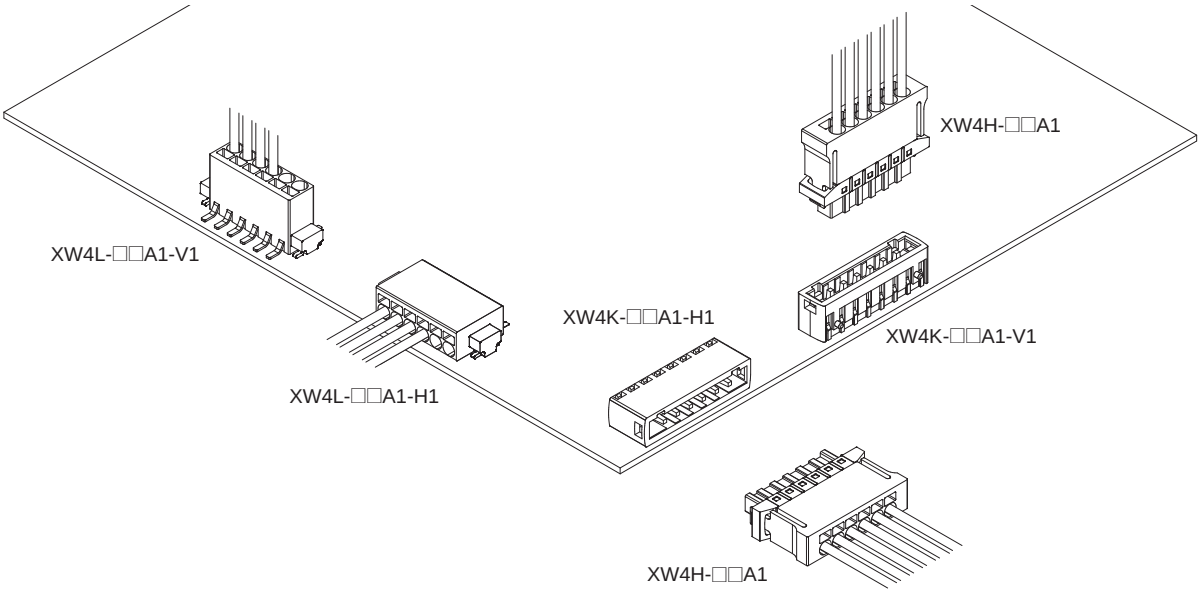


- An active lock mechanism prevents the Terminal Blocks from coming off to provide superior vibration and shock resistance.



# XW4H/XW4K/XW4L

## Connection Examples



## Model Number Legend

XW4   -     A 1 -     -  

(1) (2) (3) (4) (5) (6)

(1)Series

| Code | Type                                     |
|------|------------------------------------------|
| H    | SMT Terminal Block Connector, Wire Side  |
| K    | SMT Terminal Block Connector, Board Side |
| L    | SMT Terminal Block Direct Board Mounting |

(2)Terminal Block Number of Contacts

| Code | Number of contacts |
|------|--------------------|
| 02   | 2 contacts         |
| 03   | 3 contacts         |
| 04   | 4 contacts         |
| 05   | 5 contacts         |
| 06   | 6 contacts         |
| 07   | 7 contacts         |
| 08   | 8 contacts         |
| 09   | 9 contacts         |
| 10   | 10 contacts        |
| 11   | 11 contacts        |
| 12   | 12 contacts        |

(3)Terminal Pitch

| Code | Pitch  |
|------|--------|
| A    | 2.54mm |

(4)Number of Rows and Specifications

| Code | Number of rows |
|------|----------------|
| 1    | 1 row          |

(5)Connector Shape \*

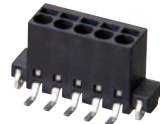
| Code | Appearance |
|------|------------|
| H1   | Horizontal |
| V1   | Vertical   |

(6)Small reel \*

| Code | Quantity |
|------|----------|
| R100 | 100 pcs  |

\* XW4K/XW4L only.

## Terminal Blocks

| Models     | XW4H-□□A1                                                                                                                      | XW4K-□□A1-V1                                                                                                                | XW4K-□□A1-H1                                                                                                                       |
|------------|--------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Appearance | Connector, Wire-side Sockets<br>            | Connector, Board-side Vertical Plugs<br> | Connector, Board-side Horizontal Plugs<br>    |
| Page       | Page 4                                                                                                                         | Page 5                                                                                                                      | Page 5                                                                                                                             |
| Models     | XW4L-□□A1-V1                                                                                                                   |                                                                                                                             | XW4L-□□A1-H1                                                                                                                       |
| Appearance | Direct-board-mounting, Vertical Sockets<br> |                                                                                                                             | Direct-board-mounting, Horizontal Sockets<br> |
| Page       | Page 6                                                                                                                         |                                                                                                                             | Page 6                                                                                                                             |

Note: □□ is replaced by the number of contacts.

## Ratings and Specifications

|                              |                                              |
|------------------------------|----------------------------------------------|
| <b>Rated voltage</b>         | 160 VAC                                      |
| <b>Rated current *</b>       | 6 A                                          |
| <b>Dielectric strength</b>   | 1,400 V for 1 min                            |
| <b>Insulation resistance</b> | 1,000 MΩ min.                                |
| <b>Wire stripping length</b> | 6 mm                                         |
| <b>Operating temperature</b> | -40 to 125°C (with no condensation or icing) |

\* This is the maximum value for the connector.  
If the rated current of the cable is lower than the rated current of the connector, use the rated current of the cable.

## Materials and Finishes

|                 |                         |
|-----------------|-------------------------|
| <b>Housing</b>  | LCP/Black               |
| <b>Contacts</b> | Copper alloy/tin plated |
| <b>Spring</b>   | SUS                     |

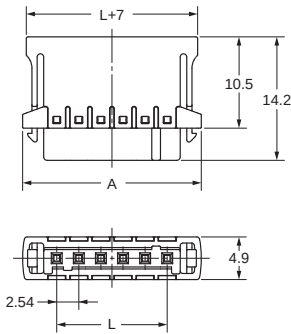
## Applicable Wires

|                       |                              |
|-----------------------|------------------------------|
| <b>Solid wires</b>    | 0.14 to 0.5 mm <sup>2</sup>  |
| <b>Stranded wires</b> | 0.2 to 0.5 mm <sup>2</sup>   |
| <b>Ferrules</b>       | 0.25 to 0.34 mm <sup>2</sup> |
| <b>AWG</b>            | 26 to 20                     |

Dimensions

(Unit: mm)

XW4H-□□A1



Dimensions

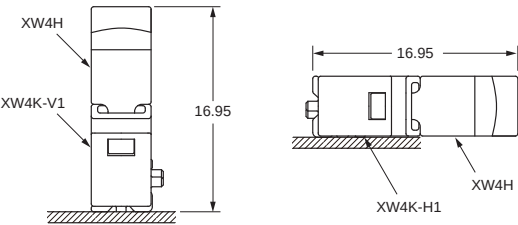
| Models    | Number of contacts | L     | A     |
|-----------|--------------------|-------|-------|
| XW4H-02A1 | 2                  | 2.54  | 10.38 |
| XW4H-03A1 | 3                  | 5.08  | 12.92 |
| XW4H-04A1 | 4                  | 7.62  | 15.46 |
| XW4H-05A1 | 5                  | 10.16 | 18.00 |
| XW4H-06A1 | 6                  | 12.70 | 20.54 |
| XW4H-07A1 | 7                  | 15.24 | 23.08 |
| XW4H-08A1 | 8                  | 17.78 | 25.62 |
| XW4H-09A1 | 9                  | 20.32 | 28.16 |
| XW4H-10A1 | 10                 | 22.86 | 30.70 |
| XW4H-11A1 | 11                 | 25.40 | 33.24 |
| XW4H-12A1 | 12                 | 27.94 | 35.78 |

Models

| Appearance                                                                        | Connector, Wire-side Sockets |                                    |
|-----------------------------------------------------------------------------------|------------------------------|------------------------------------|
|                                                                                   | Models                       | Minimum ordering quantity (pieces) |
|  | 2                            | 100                                |
|                                                                                   | 3                            |                                    |
|                                                                                   | 4                            |                                    |
|                                                                                   | 5                            | 75                                 |
|                                                                                   | 6                            |                                    |
|                                                                                   | 7                            |                                    |
|                                                                                   | 8                            | 50                                 |
|                                                                                   | 9                            |                                    |
|                                                                                   | 10                           |                                    |
|                                                                                   | 11                           | 25                                 |
|                                                                                   | 12                           |                                    |

Mating Diagram

(Unit: mm)



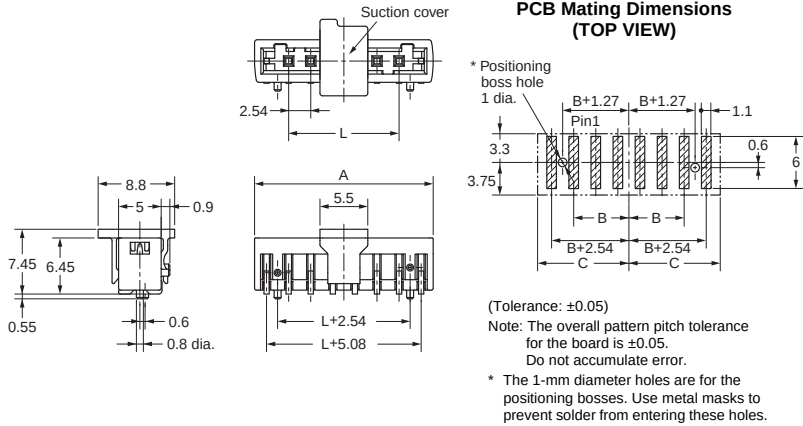
# XW4K Connectors, Board Side, Vertical and Horizontal

## Dimensions

(Unit: mm)

### Vertical

#### XW4K-□□A1-V1

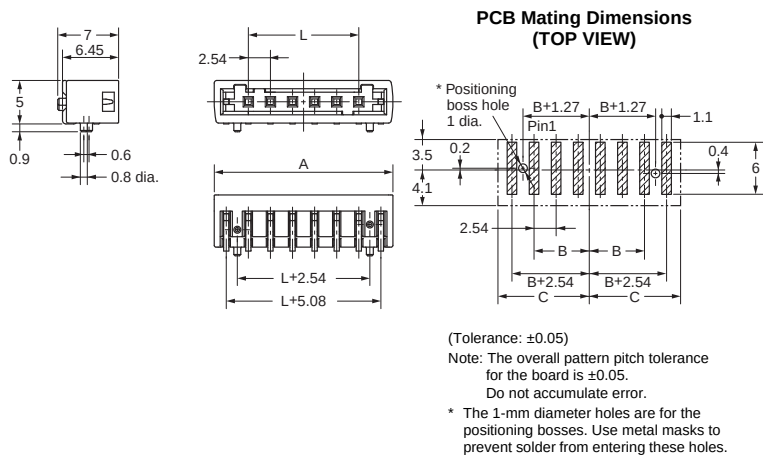


### Dimensions

| Models       | Number of contacts | L     | A     | B     | C     |
|--------------|--------------------|-------|-------|-------|-------|
| XW4K-02A1-V1 | 2                  | 2.54  | 10.39 | 1.27  | 5.42  |
| XW4K-03A1-V1 | 3                  | 5.08  | 12.93 | 2.54  | 6.69  |
| XW4K-04A1-V1 | 4                  | 7.62  | 15.47 | 3.81  | 7.96  |
| XW4K-05A1-V1 | 5                  | 10.16 | 18.01 | 5.08  | 9.23  |
| XW4K-06A1-V1 | 6                  | 12.70 | 20.55 | 6.35  | 10.50 |
| XW4K-07A1-V1 | 7                  | 15.24 | 23.09 | 7.62  | 11.77 |
| XW4K-08A1-V1 | 8                  | 17.78 | 25.63 | 8.89  | 13.04 |
| XW4K-09A1-V1 | 9                  | 20.32 | 28.17 | 10.16 | 14.31 |
| XW4K-10A1-V1 | 10                 | 22.86 | 30.71 | 11.43 | 15.58 |
| XW4K-11A1-V1 | 11                 | 25.40 | 33.25 | 12.70 | 16.85 |
| XW4K-12A1-V1 | 12                 | 27.94 | 35.79 | 13.97 | 18.12 |

### Horizontal

#### XW4K-□□A1-H1



### Dimensions

| Models       | Number of contacts | L     | A     | B     | C     |
|--------------|--------------------|-------|-------|-------|-------|
| XW4K-02A1-H1 | 2                  | 2.54  | 10.39 | 1.27  | 5.42  |
| XW4K-03A1-H1 | 3                  | 5.08  | 12.93 | 2.54  | 6.69  |
| XW4K-04A1-H1 | 4                  | 7.62  | 15.47 | 3.81  | 7.96  |
| XW4K-05A1-H1 | 5                  | 10.16 | 18.01 | 5.08  | 9.23  |
| XW4K-06A1-H1 | 6                  | 12.70 | 20.55 | 6.35  | 10.50 |
| XW4K-07A1-H1 | 7                  | 15.24 | 23.09 | 7.62  | 11.77 |
| XW4K-08A1-H1 | 8                  | 17.78 | 25.63 | 8.89  | 13.04 |
| XW4K-09A1-H1 | 9                  | 20.32 | 28.17 | 10.16 | 14.31 |
| XW4K-10A1-H1 | 10                 | 22.86 | 30.71 | 11.43 | 15.58 |
| XW4K-11A1-H1 | 11                 | 25.40 | 33.25 | 12.70 | 16.85 |
| XW4K-12A1-H1 | 12                 | 27.94 | 35.79 | 13.97 | 18.12 |

## Models

| Appearance | Connector, Board-side Vertical Plugs |                    | Connector, Board-side Horizontal Plugs |                    |
|------------|--------------------------------------|--------------------|----------------------------------------|--------------------|
|            | 500 pcs per reel *                   | 100 pcs per reel * | 600 pcs per reel *                     | 100 pcs per reel * |
| 2          | XW4K-02A1-V1                         | XW4K-02A1-V1-R100  | XW4K-02A1-H1                           | XW4K-02A1-H1-R100  |
| 3          | XW4K-03A1-V1                         | XW4K-03A1-V1-R100  | XW4K-03A1-H1                           | XW4K-03A1-H1-R100  |
| 4          | XW4K-04A1-V1                         | XW4K-04A1-V1-R100  | XW4K-04A1-H1                           | XW4K-04A1-H1-R100  |
| 5          | XW4K-05A1-V1                         | XW4K-05A1-V1-R100  | XW4K-05A1-H1                           | XW4K-05A1-H1-R100  |
| 6          | XW4K-06A1-V1                         | XW4K-06A1-V1-R100  | XW4K-06A1-H1                           | XW4K-06A1-H1-R100  |
| 7          | XW4K-07A1-V1                         | XW4K-07A1-V1-R100  | XW4K-07A1-H1                           | XW4K-07A1-H1-R100  |
| 8          | XW4K-08A1-V1                         | XW4K-08A1-V1-R100  | XW4K-08A1-H1                           | XW4K-08A1-H1-R100  |
| 9          | XW4K-09A1-V1                         | XW4K-09A1-V1-R100  | XW4K-09A1-H1                           | XW4K-09A1-H1-R100  |
| 10         | XW4K-10A1-V1                         | XW4K-10A1-V1-R100  | XW4K-10A1-H1                           | XW4K-10A1-H1-R100  |
| 11         | XW4K-11A1-V1                         | XW4K-11A1-V1-R100  | XW4K-11A1-H1                           | XW4K-11A1-H1-R100  |
| 12         | XW4K-12A1-V1                         | XW4K-12A1-V1-R100  | XW4K-12A1-H1                           | XW4K-12A1-H1-R100  |

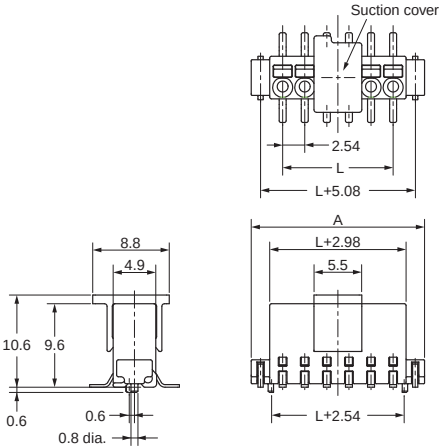
\* Please order an integer multiple of the quantity per reel.

Dimensions

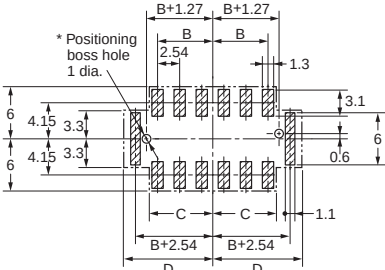
(Unit: mm)

Vertical

XW4L-□□A1-V1



PCB Mating Dimensions (TOP VIEW)



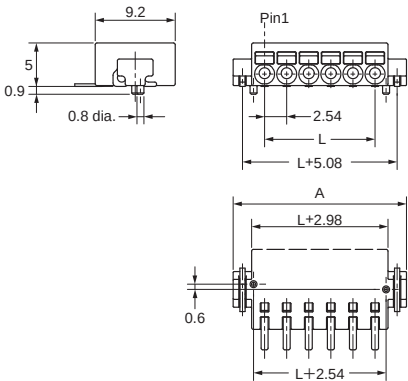
(Tolerance: ±0.05)  
Note: The overall pattern pitch tolerance for the board is ±0.05.  
Do not accumulate error.  
\* The 1-mm diameter holes are for the positioning bosses. Use metal masks to prevent solder from entering these holes.

Dimensions

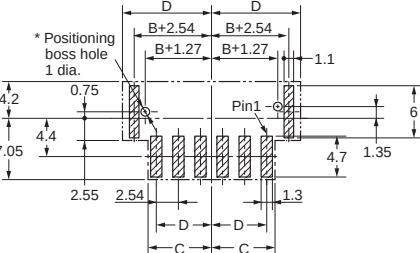
| Models       | Number of contacts | L     | A     | B     | C     | D     |
|--------------|--------------------|-------|-------|-------|-------|-------|
| XW4L-02A1-V1 | 2                  | 2.54  | 9.77  | 1.27  | 2.22  | 5.16  |
| XW4L-03A1-V1 | 3                  | 5.08  | 12.31 | 2.54  | 3.49  | 6.43  |
| XW4L-04A1-V1 | 4                  | 7.62  | 14.85 | 3.81  | 4.76  | 7.70  |
| XW4L-05A1-V1 | 5                  | 10.16 | 17.39 | 5.08  | 6.03  | 8.97  |
| XW4L-06A1-V1 | 6                  | 12.70 | 19.93 | 6.35  | 7.30  | 10.24 |
| XW4L-07A1-V1 | 7                  | 15.24 | 22.47 | 7.62  | 8.57  | 11.51 |
| XW4L-08A1-V1 | 8                  | 17.78 | 25.01 | 8.89  | 9.84  | 12.78 |
| XW4L-09A1-V1 | 9                  | 20.32 | 27.55 | 10.16 | 11.11 | 14.05 |
| XW4L-10A1-V1 | 10                 | 22.86 | 30.09 | 11.43 | 12.38 | 15.32 |
| XW4L-11A1-V1 | 11                 | 25.40 | 32.63 | 12.70 | 13.65 | 16.59 |
| XW4L-12A1-V1 | 12                 | 27.94 | 35.17 | 13.97 | 14.92 | 17.86 |

Horizontal

XW4L-□□A1-H1



PCB Mating Dimensions (TOP VIEW)

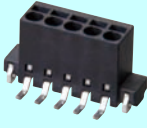


(Tolerance: ±0.05)  
Note: The overall pattern pitch tolerance for the board is ±0.05.  
Do not accumulate error.  
\* The 1-mm diameter holes are for the positioning bosses. Use metal masks to prevent solder from entering these holes.

Dimensions

| Models       | Number of contacts | L     | A     | B     | C     | D     |
|--------------|--------------------|-------|-------|-------|-------|-------|
| XW4L-02A1-H1 | 2                  | 2.54  | 9.77  | 1.27  | 2.22  | 5.16  |
| XW4L-03A1-H1 | 3                  | 5.08  | 12.31 | 2.54  | 3.49  | 6.43  |
| XW4L-04A1-H1 | 4                  | 7.62  | 14.85 | 3.81  | 4.76  | 7.70  |
| XW4L-05A1-H1 | 5                  | 10.16 | 17.39 | 5.08  | 6.03  | 8.97  |
| XW4L-06A1-H1 | 6                  | 12.70 | 19.93 | 6.35  | 7.30  | 10.24 |
| XW4L-07A1-H1 | 7                  | 15.24 | 22.47 | 7.62  | 8.57  | 11.51 |
| XW4L-08A1-H1 | 8                  | 17.78 | 25.01 | 8.89  | 9.84  | 12.78 |
| XW4L-09A1-H1 | 9                  | 20.32 | 27.55 | 10.16 | 11.11 | 14.05 |
| XW4L-10A1-H1 | 10                 | 22.86 | 30.09 | 11.43 | 12.38 | 15.32 |
| XW4L-11A1-H1 | 11                 | 25.40 | 32.63 | 12.70 | 13.65 | 16.59 |
| XW4L-12A1-H1 | 12                 | 27.94 | 35.17 | 13.97 | 14.92 | 17.86 |

## Models

| Appearance         | Direct-board-mounting, Vertical Sockets                                           |                    | Direct-board-mounting, Horizontal Sockets                                           |                    |
|--------------------|-----------------------------------------------------------------------------------|--------------------|-------------------------------------------------------------------------------------|--------------------|
|                    |  |                    |  |                    |
| Number of contacts | 250 pcs per reel *                                                                | 100 pcs per reel * | 500 pcs per reel *                                                                  | 100 pcs per reel * |
| 2                  | XW4L-02A1-V1                                                                      | XW4L-02A1-V1-R100  | XW4L-02A1-H1                                                                        | XW4L-02A1-H1-R100  |
| 3                  | XW4L-03A1-V1                                                                      | XW4L-03A1-V1-R100  | XW4L-03A1-H1                                                                        | XW4L-03A1-H1-R100  |
| 4                  | XW4L-04A1-V1                                                                      | XW4L-04A1-V1-R100  | XW4L-04A1-H1                                                                        | XW4L-04A1-H1-R100  |
| 5                  | XW4L-05A1-V1                                                                      | XW4L-05A1-V1-R100  | XW4L-05A1-H1                                                                        | XW4L-05A1-H1-R100  |
| 6                  | XW4L-06A1-V1                                                                      | XW4L-06A1-V1-R100  | XW4L-06A1-H1                                                                        | XW4L-06A1-H1-R100  |
| 7                  | XW4L-07A1-V1                                                                      | XW4L-07A1-V1-R100  | XW4L-07A1-H1                                                                        | XW4L-07A1-H1-R100  |
| 8                  | XW4L-08A1-V1                                                                      | XW4L-08A1-V1-R100  | XW4L-08A1-H1                                                                        | XW4L-08A1-H1-R100  |
| 9                  | XW4L-09A1-V1                                                                      | XW4L-09A1-V1-R100  | XW4L-09A1-H1                                                                        | XW4L-09A1-H1-R100  |
| 10                 | XW4L-10A1-V1                                                                      | XW4L-10A1-V1-R100  | XW4L-10A1-H1                                                                        | XW4L-10A1-H1-R100  |
| 11                 | XW4L-11A1-V1                                                                      | XW4L-11A1-V1-R100  | XW4L-11A1-H1                                                                        | XW4L-11A1-H1-R100  |
| 12                 | XW4L-12A1-V1                                                                      | XW4L-12A1-V1-R100  | XW4L-12A1-H1                                                                        | XW4L-12A1-H1-R100  |

\* Please order an integer multiple of the quantity per reel.

## Accessories

### Special Screwdriver XW4Z-00A



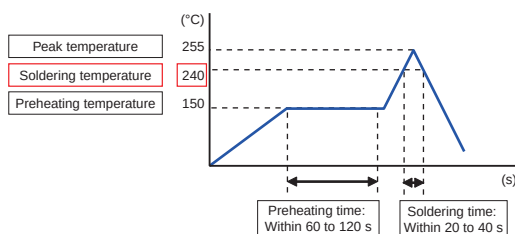
| Models   | Minimum ordering quantity (pieces) |
|----------|------------------------------------|
| XW4Z-00A | 1                                  |

## Safety Precautions

### Precautions for Correct Use

#### ● Soldering Conditions

- Recommended Reflow Conditions  
Maximum temperature: 255°C  
Time: Within 20 s



These conditions depend on the type of solder, the manufacturer, the amount of solder, the size of the circuit board, and the other mounting materials. You must check and select the actual conditions yourself.

#### ● Metal Mask Thickness for Cream Solder Printing

We recommend a metal mask thickness of 0.12 to 0.15 mm for cream solder printing.

These conditions, however, depend on the type of solder, the manufacturer, the amount of solder, the size of the circuit board, and the other mounting materials. You must check and select the actual conditions.

#### ● Pin Deformation

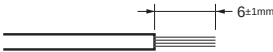
The pins will deform if you subject them to an excessive load. Deformed pins will reduce solderability when the Connectors are mounted. Do not drop the Connectors or handle them roughly. Do not connect or disconnect Connectors that are not mounted to a circuit board. Doing so may deform the pins.

XW4H, XW4L

● Wiring Terminal Blocks

Directly Connecting Wires

- (1) Use wires with conductors that are within the connectible wire range.
- (2) Prepare the ends of the wires as shown below.  
Refer to Ratings and Specifications for the wire stripping length.

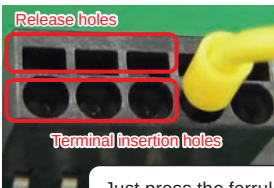


- (3) Do not presolder the ends of the wires. Doing so will prevent correct connections.

● Connection Methods

Using Ferrules or Solid Wire

Connection Method



Just press the ferrule all the way in.

Removal Method



Insert the screwdriver into the release hole and pull out the ferrule.

Using Stranded Wires

Using Stranded Wires



To insert a stranded wire, insert a screwdriver into the release hole and then insert the wire.  
To remove a stranded wire, insert a screwdriver into the release hole and then pull out the wire.

**Note:** Do not apply excessive force to the Terminal Block when you insert the tool. The Terminal Block may be damaged.

● Terminal Block Connection Method

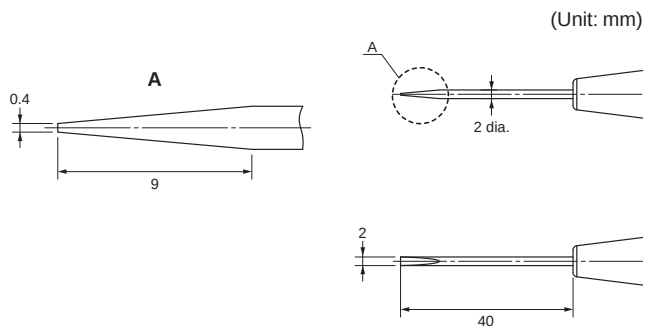
Using Crimp Terminals

- (1) Use ferrules or tab terminals.  
However, the Terminal Blocks are small, so sufficiently confirm the following before you use them.
- (2) Insulation between Crimp Terminals  
If you use naked crimp terminals, there will be no finger protection. Also, there will be limited clearance and creepage distances between adjacent terminals, so use crimp terminals with care.

● Special Screwdriver for Terminal Blocks

Use the XW4Z-00A Special Screwdriver to connect the Terminal Blocks.

You can also use any screwdriver with the following dimensions. If you use any screwdriver other than the Special Screwdriver or one with the following dimensions, the Terminal Block may be damaged.



Approval Standard

The approval rating values for overseas standards are different from the performance values determined individually. Confirm the values before use.

| Model             | Standard                               | File No. | Rating |
|-------------------|----------------------------------------|----------|--------|
| XW4H-□□A1         | UL/C-UL certified product (Recognized) | E103202  | ---    |
| XW4K-□□A1-V1      | UL/C-UL certified product (Recognized) | E103202  | ---    |
| XW4K-□□A1-V1-R100 | UL/C-UL certified product (Recognized) | E103202  | ---    |
| XW4K-□□A1-H1      | UL/C-UL certified product (Recognized) | E103202  | ---    |
| XW4K-□□A1-H1-R100 | UL/C-UL certified product (Recognized) | E103202  | ---    |
| XW4L-□□A1-V1      | UL/C-UL certified product (Recognized) | E103202  | ---    |
| XW4L-□□A1-V1-R100 | UL/C-UL certified product (Recognized) | E103202  | ---    |
| XW4L-□□A1-H1      | UL/C-UL certified product (Recognized) | E103202  | ---    |
| XW4L-□□A1-H1-R100 | UL/C-UL certified product (Recognized) | E103202  | ---    |
| XW4Z-00A          | Non Approved Models                    | ---      | ---    |



This image shows a full page of white paper with horizontal grey ruling lines. The word "MEMO" is printed at the top center in bold black capital letters. There are 26 horizontal lines in total, creating 27 rows. The first row is above the "MEMO" header, and the remaining 26 rows are below it.

Please check each region's Terms & Conditions by region website.

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## OMRON Corporation

Device & Module Solutions Company

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