



Discontinued as of September 30, 2010

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FOR PC BOARD
TO FLAT CABLE

PCB TYPE
CONNECTORS (AXP)

FEATURES



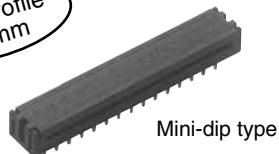
1. High density mounting can be done.

Because of its 5.7mm high and low profile, its effectiveness for PC board mounting is broad.

2. Labor saving in making connections is achieved.

All terminals can be connected as a group in this pressure connection construction, and by means of the temporary cover stop, cable insertion is easily carried out, and connection labor is minimized.

Low profile
5.7mm



Mini-dip type



IC type

Compliance with RoHS Directive

ORDERING INFORMATION

| | | | | | | | |
|--|-----------------|-----------------|--|--|--|---|---|
| | AXP | | | | | 1 | 8 |
| PCB type | | | | | | | |
| 4: Mini-dip type | | | | | | | |
| 5: IC type (14, 16, 24, 40 contacts) | | | | | | | |
| 6: IC type (20 contacts) | | | | | | | |
| <No. of contacts (2 digits)> | | | | | | | |
| 10: 10 contacts | 14: 14 contacts | 16: 16 contacts | | | | | |
| 20: 20 contacts | 24: 24 contacts | 26: 26 contacts | | | | | |
| 30: 30 contacts | 34: 34 contacts | 40: 40 contacts | | | | | |
| 50: 50 contacts | 60: 60 contacts | 64: 64 contacts | | | | | |
| <Terminal layout> | | | | | | | |
| 2: Standard terminal layout | | | | | | | |
| 6: Reverse terminal layout | | | | | | | |
| <Terminal shape> | | | | | | | |
| 1: DIP type | | | | | | | |
| <Surface treatment (Pressured portion/Terminal portion)> | | | | | | | |
| 8: Au plating/Au plating | | | | | | | |



Discontinued as of September 30, 2010

AXP

PRODUCT TYPES

| No. of contacts | Mini-Dip type | | IC type (Reverse terminal layout) |
|-----------------|--------------------------|-------------------------|--------------------------------------|
| | Standard terminal layout | Reverse terminal layout | |
| 10 | AXP410218 | AXP410618 | — |
| 14 | AXP414218 | AXP414618 | AXP514618 |
| 16 | AXP416218 | AXP416618 | AXP516618 |
| 20 | AXP420218 | AXP420618 | AXP620618 |
| 24 | — | — | AXP524618 |
| 26 | AXP426218 | AXP426618 | — |
| 30 | AXP430218 | AXP430618 | — |
| 34 | AXP434218 | AXP434618 | — |
| 40 | AXP440218 | AXP440618 | AXP540618 |
| 50 | AXP450218 | AXP450618 | — |
| 60 | AXP460218 | AXP460618 | — |
| 64 | — | AXP464618 | — |

Notes) 1. Tray packaging: Outer carton 200 pcs.

2. The upper surface of a connector with mini dip type standard pin layout is marked with “▼AXP4○○2”. Connectors with reverse pin layout is marked with “▲AXP4○○”.

The orientation of the triangle distinguishes standard from reverse pin layouts.

3. The IC type PCB type connectors are reverse terminal layout only.

4. For available foreign standard products, refer to “STANDARDS CHART” on the end of the catalog.

SPECIFICATIONS

1. Characteristics

| | Item | Specifications | Conditions |
|-------------------------------|-----------------------|--|--|
| Electrical characteristics | Rated current | 1A | |
| | Breakdown voltage | 650V AC for 1 min. | Detection current: 1mA |
| | Insulation resistance | Min. 1,000MΩ | at 500V DC megger |
| | Contact resistance | Max. 15mΩ | Measured based on the HP4338B measurement method of JIS C 5402 |
| Environmental characteristics | Ambient temperature | −55°C to +105°C | |
| | Vibration resistance | 10 to 55Hz at the double amplitude of 1.52mm | No opening more than 1μsec. at Max. 100mA carrying current |
| | Shock resistance | 490m/s ² {50G} | |

2. Material and surface treatment

| Part name | Materials | Surface treatment |
|----------------|--------------------------------|---|
| Molded portion | Glass reinforced PBT (UL94V-0) | — |
| Contact | Copper alloy | Ni plating on base, Au plating on surface |

3. Applicable cable

| | |
|----------------------------|---|
| Flat cable (stranded wire) | Pitch 1.27mm/conductor, AWG28 (7 conductors/0.127 dia.) |
|----------------------------|---|

DIMENSIONS (Unit: mm)

• Mini-dip type

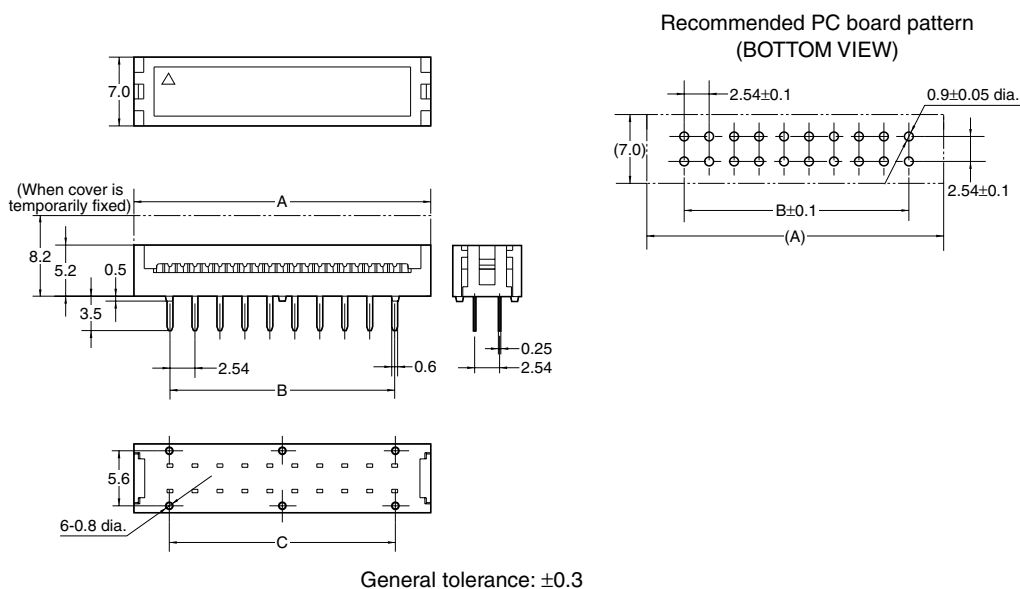
CAD Data



Dimension table (mm)

| No. of contacts | A | B | C |
|-----------------|------|-------|------|
| 10 | 17.5 | 10.16 | 10.3 |
| 14 | 22.7 | 15.24 | 15.5 |
| 16 | 25.1 | 17.78 | 17.9 |
| 20 | 30.2 | 22.86 | 23.0 |
| 26 | 37.9 | 30.48 | 30.6 |
| 30 | 42.9 | 35.56 | 35.7 |
| 34 | 48.0 | 40.64 | 40.8 |
| 40 | 55.6 | 48.26 | 48.4 |
| 50 | 68.3 | 60.96 | 61.1 |
| 60 | 81.0 | 73.66 | 73.8 |
| 64 | 86.1 | 78.74 | 78.9 |

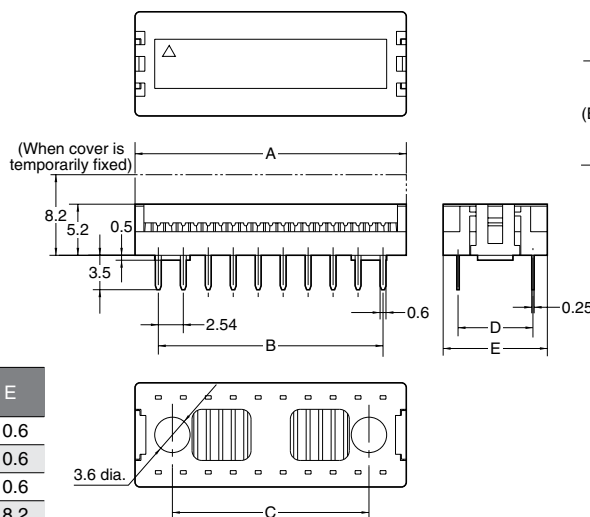
The CAD data of the products with a **CAD Data** mark can be downloaded from: <http://panasonic-electric-works.net/ac>



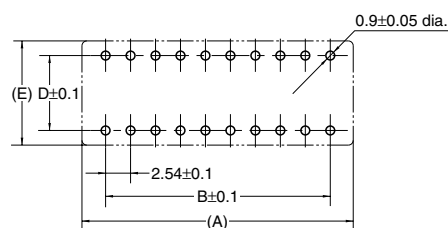


• IC type

CAD Data



Recommended PC board pattern (BOTTOM VIEW)



Dimension table (mm)

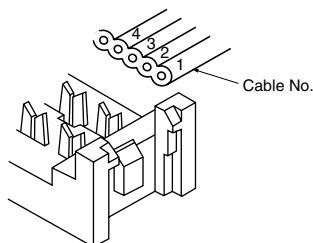
| No. of contacts | A | B | C | D | E |
|-----------------|------|-------|------|-------|------|
| 14 | 20.0 | 15.24 | 13.0 | 7.62 | 10.6 |
| 16 | 22.5 | 17.78 | 15.0 | 7.62 | 10.6 |
| 20 | 27.6 | 22.86 | 20.0 | 7.62 | 10.6 |
| 24 | 32.7 | 27.94 | 25.0 | 15.24 | 18.2 |
| 40 | 53.0 | 48.26 | 45.2 | 15.24 | 18.2 |

General tolerance: ± 0.3

CABLE NO. AND TERMINAL POSITION CORRELATION DRAWING

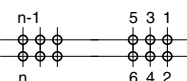
Terminal layout

Terminal numbers are not indicated on the connector. When the cable numbers are temporarily assigned from the end as 1, 2, 3, 4....., the corresponding terminals are as shown in the drawing below.

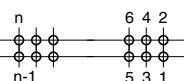


Cable No. layout (Top view)

Standard terminal layout



Reverse terminal layout



NOTES

1. Regarding design of PC board

The connector terminal numbers are not indicated. Using the triangle mark on the cover as reference, the PC board design and the cable connections can be carried out.

2. Regarding the soldering operation

Soldering should be carried out under the conditions given below.

260°C: Within 10 seconds

300°C: Within 5 seconds

350°C: Within 3 seconds

3. Regarding external force applied to the cable

Because no strain relief is provided for the PC board type connector, care should be taken not to apply external force to the cable. Sufficient slack should be provided in the cable length.

4. Regarding handling of terminals

Care should be taken with the terminals because repeated bending of the terminals can lead to damage.

5. Regarding handling of the cover

After the cover has been inserted into the base, when it is to be removed, care should be taken not to apply excessive force to displace the radius section of the cover since that will cause damage.

6. Regarding the cable pressure connection tool

The special tool provided for cutting the cable and making the pressure connections should be used.

For other details, please verify with the product specification sheets.



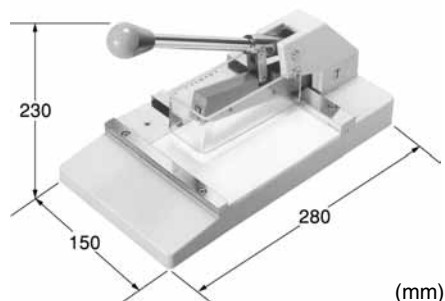
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TOOLS FOR FLAT CABLE CONNECTOR

FLAT CABLE CONNECTOR TOOLS (AXY)

CABLE CUTTER



Compliance with RoHS Directive

FEATURES

1. Flat cable (from 10 to 64 contacts) can be cut.
2. Accurate cutting only by setting cable to the guide.
3. Cutting knife can be fixed by clammer from the side and exchanged easily.
4. Safety cover for cutting knife is equipment.
5. The replacement blade of a commercially available box cutter can be used as the cable cutter blade.

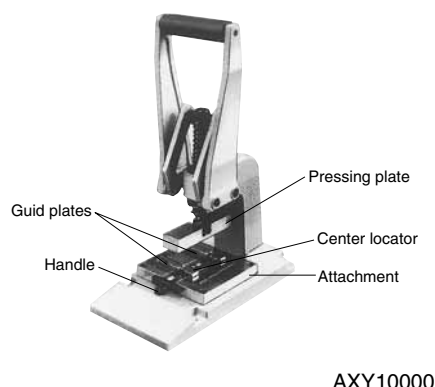
PRODUCT TYPES

| Product name | Part No. |
|--------------|----------|
| Cable cutter | AXY80000 |

NOTES

- 1. Setting of flat cable**
First, set the guide plate at the correct width. Then fix the cable and cut it.
- 2. Exchange of cutting knife**
Push to attach the knife to the stopper pin of cutter holder and then set it.
- 3. Safety cover**
Cutting work should be done with safety cover set. Please do not put your hand inside of safety cover set.
- 4. Do not remodel this product or use it for other purposes.**

PRESSURE WELDING UNIT



AXY10000

Compliance with RoHS Directive

FEATURES

- 1. Operation without worry of connectors becoming damaged**
When pressure welding, the connector will not break even if pressed too hard because the guide plate acts as a stopper.
- 2. Easy operation**
Designed with the operator in mind, pressure welding is sure and easy with minimal force needed when operating the lever. It is also well suited to repetitive operation.
- 3. Using the same unit, all types of connectors can be pressure welded by simply replacing center locator and guide plate.**

- 4. Pressure welding of 10 to 64 strand cable is easily accomplished by changing the position of the guide plate.**
- 5. Positioning of the connector and cable is easily accomplished with the guide plate.**
- 6. After pressure welding a flat cable, the connector can be easily removed by pressing the handle to pop it out.**
- 7. Even if the connector type changes, the cover is always face down and pressure welding is always possible. Cables will never be displaced during pressure welding.**

PRODUCT TYPES

| Products name | | Part No. | Remarks |
|-----------------------|----------------|---|---|
| Pressure welding unit | | AXY10000 | |
| Accessories | Attachment | AXY20101 | MIL and PCB types, Cable pitch 1.27mm |
| | Center locator | AXY20201 | MIL type |
| | | AXY20202 | PCB Mini-dip type |
| | | AXY20203 | PCB IC type, Terminal row pitch 7.62mm |
| | | AXY20205 | PCB IC type, Terminal row pitch 15.24mm |
| | Guide plate | AXY20301 | MIL type |
| | | AXY20302 | PCB Mini-dip type |
| | | AXY20303 | PCB IC type, Terminal row pitch 7.62mm |
| | | AXY20305 | PCB IC type, Terminal row pitch 15.24mm |
| | Spacer | AXY20401 | Mini-dip type, Terminal row pitch 2.54mm, 30 to 64 contacts |
| | | AXY20404 | IC type, Terminal row pitch 15.24mm, 24 to 40 contacts |
| | | AXY20405 | Mini-dip type, Terminal row pitch 2.54mm, 10 to 26 contacts |
| AXY20406 | | IC type, Terminal row pitch 7.62mm, 14 to 20 contacts | |

Note) The pressure welding unit is not include the accessories.



COMBINATION OF ACCESSORIES

| Applicable socket | No. of contacts | Attachment | Center locator | Guide plate | Spacer |
|---------------------|-----------------|------------|----------------|-------------|----------|
| MIL type | Every type | AXY20101 | AXY20201 | AXY20301 | — |
| PCB (Mini-dip type) | 10 to 26 | | AXY20202 | AXY20302 | AXY20405 |
| | 30 to 64 | | | | AXY20401 |
| PCB (IC type) | 14 to 20 | | AXY20203 | AXY20303 | AXY20406 |
| | 24 to 40 | | AXY20205 | AXY20305 | AXY20404 |

SAFETY NOTES

1. Do not do the following dangerous actions when using the pressure welder.

- Insert hand or fingers beneath the pressure plate when operating the lever.
- Allow your fingers to get close to moving parts when operating the lever.
- Let go of the lever when in progress after pressure welding a connector. (Be sure to keep your hand on the lever all the way to the end. Otherwise the lever might snap back with considerable force.)

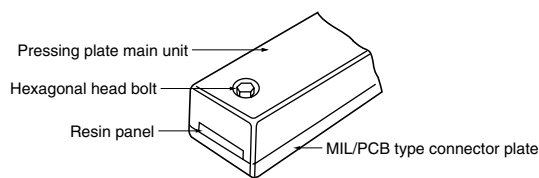
2. Secure the pressure welder to the work bench to prevent it from falling over. Also, do not apply excessive force to the lever when pressure welding (such as by applying the full weight of your body).

PRESSING PLATE OF PRESSURE WELDING UNIT

1. The pressing plate consists of the pressing plate main unit and MIL/PCB type connector plate.

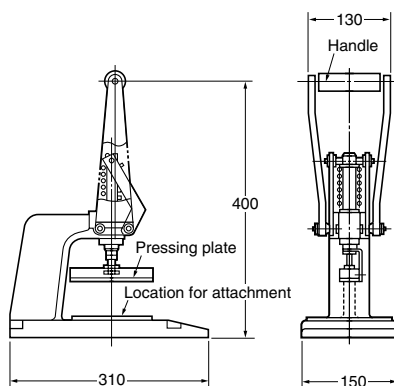
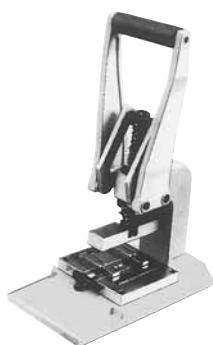
2. Proceed with the pressure connection of MIL type connectors (AXM1 series) and PCB type connectors (AXP series) with the MIL/PCB connector plate attached to the pressing plate main unit. Use the hexagonal head bolt to mount and remove the MIL/PCB type connector plate.

When pressure-welding MIL/PCB type connectors



DIMENSIONS (Unit: mm)

- Pressure welding unit



- Accessories



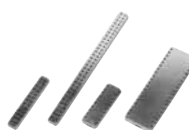
Attachment



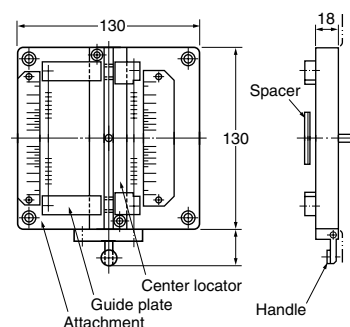
Center locator



Guide plate



Spacer





NOTES

1. Sockets setting

After covers are temporary fixed with housing (or base), sockets are set at the gutter of center locator. (See Fig. 1)

2. Method of inserting flat cable

The guide plate is set at the correct figure of scale, corresponding to the number of contacts (cable width). Then cable is inserted along with the guide until it reaches at the stopper. (See Fig. 2)

3. Pressure connection

After adjusting the lower limit of the pressing plate, the connectors should be pressed. Since the guide plate is the stopper, the connectors should be pressed until contacting the pressing plate to the guide plate.

In case of PCB types, however, spacers should be placed over the base. (See Fig. 2)

4. Strain relief

Regarding MIL type, strain relief should be fixed manually after pressure connection of cables. (See Fig. 3)

5. Be sure to use our pressure welding unit and its accessories when conducting pressure welding.

CABLE PRESSURE WELDING

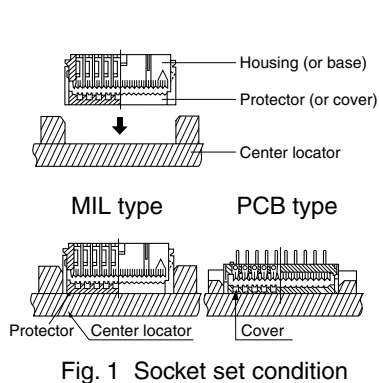


Fig. 1 Socket set condition

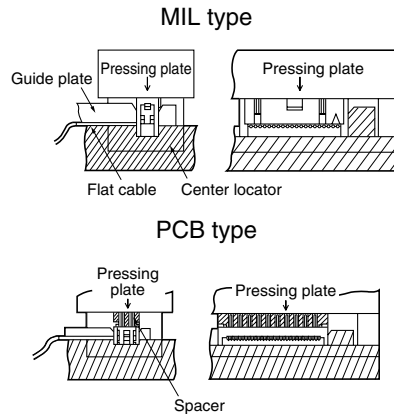


Fig. 2 Pressure welding condition

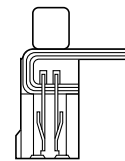


Fig. 3 Set condition of strain relief

SAFETY NOTES FOR SPECIALIZED TOOLS

1. Cable Cutter

- 1) Never remove the safety cover
- 2) Never insert your finger inside the safety cover
- 3) Use on a stable surface
- 4) Do not alter this product, or use it for other purposes

2. Pressure Welding Unit

- 1) Do not place fingers beneath the pressurized plate or in or near moving parts, while the lever is being operated.
- 2) Lock the unit in place on a workbench or the like.
- 3) Do not alter this product, or use it for other purposes



HARNESS FABRICATION FOR FLAT CABLE CONNECTOR

NOTES WHEN FABRICATING HARNESSES

1. Common items

1) Select the appropriate connector and cable according to the conditions of use.
2) It is recommended that our cable cutter and pressure welding unit be used.
3) After making the pressure welding, the condition of the connection should be confirmed.

4) Because there are standard terminal layout and reverse terminal layout for PCB type connectors, the connector suitable for the use should be selected.

2. Cable cutter

1) The cable should be cut at right angles to the corresponding length.
2) Use a sharp cutter for making the cut.
3) When setting the cable length, the pressure welding portion and strain relief coil should be considered and set accordingly.

For our product, the following cable length is necessary. (For each side)

| | | |
|--------------------|----------------------------|------|
| MIL type socket | Without strain relief | 6mm |
| | With strain relief | 15mm |
| PCB type connector | Mini-dip type | 7mm |
| | IC type 14 to 20 contacts | 10mm |
| | IC type 24 and 40 contacts | 20mm |

3. Cable pressure welding

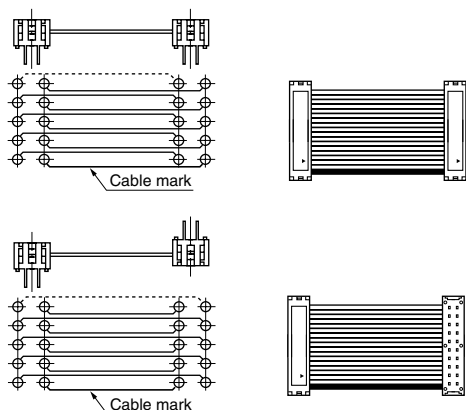
1) Bring the cable end surface in line with the connector end surface, and set in the groove of the cable guide of the protector.

2) When making a cable pressure welding for a PCB type connector, it is recommended that a spacer be used. This can prevent breakage of the terminals.

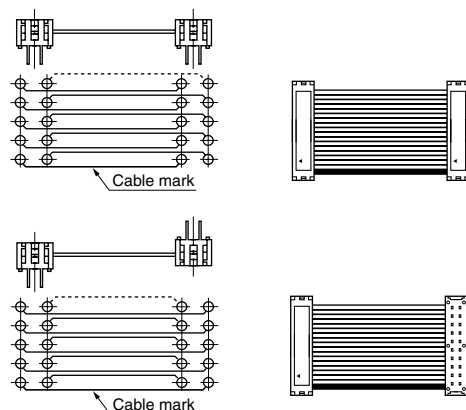
Example 1: MIL type and MIL type



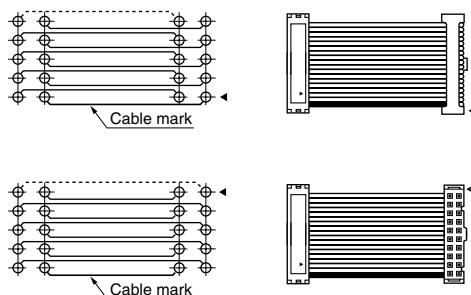
Example 2: PCB type and PCB type
Standard terminal layout



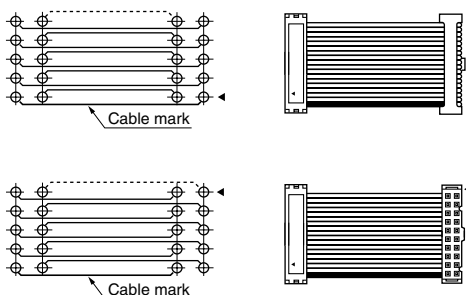
Reverse terminal layout



Example 3: PCB type and MIL type
Standard terminal layout



Reverse terminal layout





Discontinued as of September 30, 2010

AXH

HARNESS ASSEMBLY ORDERING INFORMATION

| AXH | Number of contacts for connector cable | Left connector type | Cable type and length | Right connector type |
|---|--|---------------------|-----------------------|----------------------|
| AXH connector harness designation | | | | |
| Number of contacts for connector or cable | | | | |
| Left connector type (see Note 1) | | | | |
| Connection of connector and cable (see Note 2) | | | | |
| Cable types Standard type: Stranded AWG 28: 1 Fluted type: Stranded AWG 28: 2 | | | | |
| Cable mark Front: 1 Rear: 2 Not specified: 3 | | | | |
| Cable length (3 digits) Example: 020 for 20 cm (Only 5 cm and longer available.) | | | | |
| Right connector type (see Note 1) | | | | |
| Connection of connector and cable (see Note 2) | | | | |

Note 1) Connector type

| Connector | | Type | Order No. |
|--------------------|---------------|--------------------------|-----------|
| MIL type connector | | Without strain relief | M12 |
| | | With strain relief | M14 |
| PCB type connector | Mini-dip type | Standard terminal layout | P42 |
| | | Reverse terminal layout | P46 |
| | IC type | Reverse terminal layout | P56 |

Note 2) Connection of connector and cable

| Order No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|-----------------|-----------------------|---|------------|---|--------------------|---|------------|---|
| Left connector | | | | | | | | |
| Right connector | | | | | | | | |
| Cable mounting | Upper side | | Lower side | | Upper side | | Lower side | |
| Strain relief | Without strain relief | | | | With strain relief | | | |

We also accept orders for harnessed products. Call for more information.