

Water-proof shielded 220A connector

EV2 Series



■ Features

1. The connection is made using a multi-purpose crimp contact.

The EV2 connector replaces conventional screw terminated connections creating a stable electrical connection.

2. Rated current of 220A using 40mm² cables. (Ambient Temperature 25°C)

This product is mainly used for power supply.

3. Resistant to random vibration (ISO 16750-3, JASO D 014-3)

4. Water-proof design, meets IP68

Oil-resistant through use of specialized rubber.

5. Shield design for noise reduction

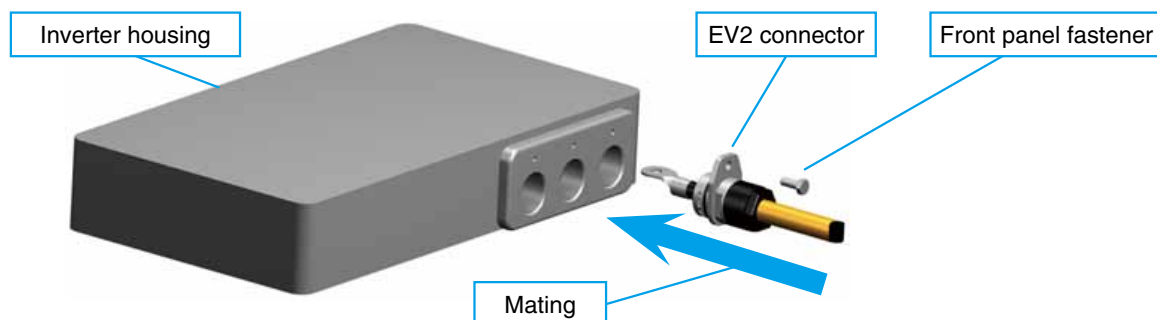
Designed to connect the braided shield of the cable with the connector body.

6. TÜV pending

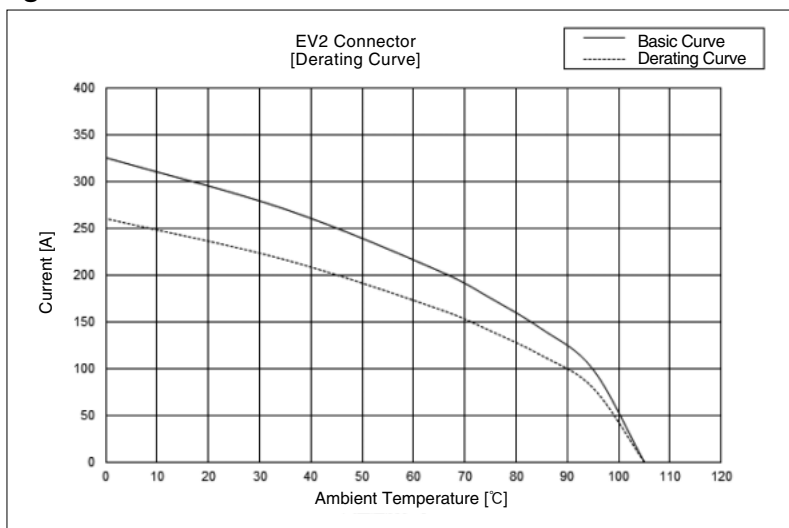
7. RoHS supported.

■ Connector connection is possible.

Using a multi-purpose crimp contact, mating operation and bolt fastening completes the connection.



[Reference] Derating curve



Note 1 : The derating curve is derived from the basic curve multiplied by the derating factor of 0.8.

Note 2 : The value of rated current varies with the ambient temperature. It is recommended to use the product within the derating curve zone.

When using a TÜV approved product, please use the product within the specified range as well as the derating curve area.

Note 3 : The measurement method of the derating curve is shown below.

Test specimen : This product, unused prior to testing.

Test cable conductor cross sectional area : Receptacle side (38mm²)

Plug side (40mm²)

Test condition : Power supplied while the specimen is in a stationary state and then measured.

■ Applications

Hybrid construction equipment, power conditioners, machine tools, small generators, and other inverter sections.

■ Product Specifications

Ratings	Rated voltage	AC 800V, DC 800V	Operating temperature range	-40°C to +105°C (Note 1)
	Rated current (Note 3)	220A (Ambient Temperature 25°C)	Storage temperature range	-10°C to +60°C
TÜV Pending	Rated voltage	AC 1000V, DC 1000V	Operating temperature range	-40°C to +105°C (Note 1)
	Rated current (Note 3)	200A	Storage temperature range	-10°C to +60°C

Note 1 : Including temperature rise due to current carrying.

Note 2 : The value of rated current varies with the ambient temperature. It is recommended to use the product within the derating curve zone.

When using a TÜV approved product, please use the product within the specified range as well as the derating curve area.

Item	Specifications	Conditions
1. Contact resistance	Contact part : 0.5mΩ or less Between the exterior and the cable shield 100mΩ or less	Measured at DC 1A
2. Insulation resistance	1000MΩ or more	Measured at DC 500V
3. Withstanding voltage	No flashover or breakdown	Apply AC 4260V for 1 minute.
4. Repeated operation	①Contact resistance : Maximum of 1mΩ ②Insertion and removal force : Maximum of 200N	30 times of repeated operation
5. Vibration resistance	①No electrical discontinuity of 10μs or more ②No damage, crack or loosened parts.	Testing conditions : frequency range : 10 to 2000Hz, average acceleration 57.9m/s ² in 3 directions for 8 hours each (ISO 16750-3, JASO D 014-3)
6. Shock resistance	①No electrical discontinuity of 10μs or more ②No damage, crack or loosened parts.	Testing conditions: acceleration : 490m/s ² , duration : 11ms, and half-sine wave in 3 directions, 3 cycles for each
7. Temperature cycles	Insulation resistance : Minimum of 100MΩ	-40°C : 30 minutes → Room temperature : 2 to 3 minutes → 125°C : 30 minutes → Room temperature : 2 to 3 minutes, 5 cycles
8. Brine spraying	No considerable corrosion impairing electric/mechanical functions.	Left in the brine of 5% concentration for 48 hours.
9. Moisture resistance (Steady state)	Insulation resistance : Minimum of 100MΩ (When dried)	Left at a temperature of 40°C and in humidity of 90 to 95% for 96 hours.
10. Pressure-resistance	While the connector is mated with the applicable panel, apply an air pressure of 17.6kPa in the internals of the connector for 30 seconds.	No air bubbles generated from the internals of the connector.

■ Materials / Finish

Item	Materials	Finish	Remarks
Resin parts	PPS resin (Black)	————	UL94V-0
Contact spring	Stainless steel	————	————
Conductor section	Copper alloy	Tin plated	————
Nut	Iron	Nickel plated	————
O-ring	Nitrile hydride rubber	————	————
Gasket	Fluororubber	————	————

※Use commercially available M6 bolts, crimp contacts, and electric wires.

Recommended crimping contact : R38-8 manufactured by JST

■ 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.

EV2 – 30 R * – 1 S * ()**

①

②

③

④

⑤

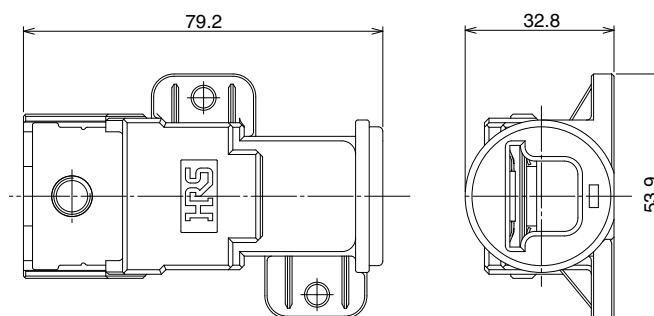
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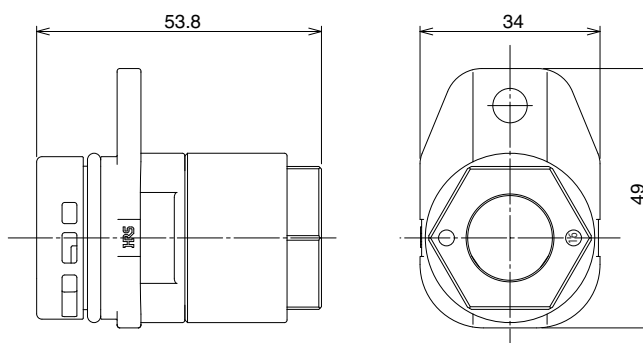
① Series name : EV2	⑤ Number of contacts : 1
② Connector size : Indicates the outer diameter of the mated plug section.	⑥ Connector structure : S=With a contact spring P=Without contact spring
③ Connector type : R=Receptacle P=Plug	⑦ Contact connection method : B=Screw-fastened connection C=Crimp connection
④ Serial symbols : Modification types are indicated by A, B, C, ...	⑧ When different types of specifications are provided, attach (01), (02), ...for identification.

■ Receptacle



Part No.	HRS No.	Remarks
EV2-30R-1SB	139-0200-7 00	—

■ Plug



Part No.	HRS No.	Remarks
EV2-30P-1PC	139-0201-0	—

◆ Applicable Cable

Electric Cable Manufacturer	Product Name	Support for product inquiries and purchase
NISSEI ELECTRIC CO., LTD.	FM-MY 40mm ²	NISSEI ELECTRIC CO., LTD. Electric Dir. Sales Group Machida Sales Dept. Phone +81-42-729-2531

Tool / Jig	Part No.	HRS No.	Remarks
Crimp tools for round-form contacts	HT112/REC-Li150	902-1516-5 00	Equivalent product : REC-Li150 made by IZUMI Product Company
Cable crimp tools	EV2-30P-1PC/CKED	902-1521-0 00	_____
Cable crimp tools : Crimpers only	EV2-30P-1PC/CKED(61)	902-1521-0 61	_____
Cable crimp tools : Anvil only	EV2-30P-1PC/CKED(62)	902-1521-0 62	_____
Spring ring pressor jigs	EV2-30P-1PC/PRMD	902-1522-0 10	_____



◆ Diagram of the panel mounting slot dimension

Technical drawing of the M4x0.7 blind hole assembly, showing multiple views and dimensions:

- Top View:** Shows the overall dimensions of the assembly. The total width is 36.5 ± 0.1 mm. The distance between the centers of the two holes is 11.5 ± 0.1 mm. The total height is 43.4 ± 0.1 mm. The distance from the top edge to the center of the upper hole is 16 ± 0.05 mm. The distance from the bottom edge to the center of the lower hole is 25 ± 0.05 mm. The distance from the left edge to the center of the left hole is 15 ± 0.1 mm. The distance from the right edge to the center of the right hole is 15 ± 0.1 mm. The distance from the top edge to the center of the lower hole is 20 ± 0.1 mm. The distance from the bottom edge to the center of the upper hole is 20 ± 0.1 mm. The distance from the left edge to the center of the right hole is 20 ± 0.1 mm. The distance from the right edge to the center of the left hole is 20 ± 0.1 mm.
- Front View:** Shows the profile of the assembly. The total height is 43.4 ± 0.1 mm. The distance from the top edge to the center of the upper hole is 16 ± 0.05 mm. The distance from the bottom edge to the center of the lower hole is 25 ± 0.05 mm. The distance from the left edge to the center of the left hole is 15 ± 0.1 mm. The distance from the right edge to the center of the right hole is 15 ± 0.1 mm. The distance from the top edge to the center of the lower hole is 20 ± 0.1 mm. The distance from the bottom edge to the center of the upper hole is 20 ± 0.1 mm. The distance from the left edge to the center of the right hole is 20 ± 0.1 mm. The distance from the right edge to the center of the left hole is 20 ± 0.1 mm.
- Side View:** Shows the profile of the assembly. The total height is 43.4 ± 0.1 mm. The distance from the top edge to the center of the upper hole is 16 ± 0.05 mm. The distance from the bottom edge to the center of the lower hole is 25 ± 0.05 mm. The distance from the left edge to the center of the left hole is 15 ± 0.1 mm. The distance from the right edge to the center of the right hole is 15 ± 0.1 mm. The distance from the top edge to the center of the lower hole is 20 ± 0.1 mm. The distance from the bottom edge to the center of the upper hole is 20 ± 0.1 mm. The distance from the left edge to the center of the right hole is 20 ± 0.1 mm. The distance from the right edge to the center of the left hole is 20 ± 0.1 mm.
- Detail View C:** Shows the detail of the M6x1 plug. The plug has a diameter of $\phi 31 \pm 0.05$ mm. The distance from the top edge to the center of the plug is 15 ± 0.1 mm. The distance from the bottom edge to the center of the plug is 20 ± 0.1 mm. The distance from the left edge to the center of the plug is 15 ± 0.1 mm. The distance from the right edge to the center of the plug is 15 ± 0.1 mm. The distance from the top edge to the center of the lower hole is 20 ± 0.1 mm. The distance from the bottom edge to the center of the upper hole is 20 ± 0.1 mm. The distance from the left edge to the center of the right hole is 20 ± 0.1 mm. The distance from the right edge to the center of the left hole is 20 ± 0.1 mm.

Notes:

- M4x0.7, blind hole is required
- Minimum pitch 45 ± 0.1
- 13mm minimum, blind bag hole is required
- Reference mating surface (Receptacle)
- M6x1
- Reference mating surface (Plug)
- Please ensure surface is free from burr.
- Water-proof surface
- $\nabla R3.2$

※ Features without dimensions are for reference

※Features without dimensions are for reference only.

<p>⚠ Warning</p> <ul style="list-style-type: none">● Do not touch the exposed conductor while it is energized, failing to follow this warning may cause an electric shock and injury. ⚠● The power should be in the OFF position when inserting or extracting this connector.
<p>⚠ Caution</p> <ul style="list-style-type: none">● Use dedicated tools with applicable cables. Use of non-applicable items, could lead to an accident due to the insufficient performance.● Please only use Hirose approved contacts, using unapproved contacts can result in a lowering of the product's performance and cause a serious accident. Please contact your local Hirose representative for additional information.



2-6-3, Nakagawa Chuoh, Tsuzuki-Ku, Yokohama-Shi 224-8540, JAPAN
TEL: +81-45-620-3526 Fax: +81-45-591-3726
<http://www.hirose.com>
<http://www.hirose-connectors.com>

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Тел: +7 (812) 336 43 04 (многоканальный)

Email: org@lifeelectronics.ru

www.lifeelectronics.ru