

Single Pos. Snap-in Lock Power Connectors up to 90A

EM12M Series



■ Features

1. Quick, snap in lock

Its snap-in structure reduces assembly costs due to its simplicity and ability to reduce wiring steps. This connector does not need screws like traditional terminal block connectors.

2. Safety design with finger protection

Finger protection allows safe operation for field operators.

3. Available cable size : 22mm², 38mm²

2 kinds of contacts are provided for multiple wire termination.

4. Simplified crimp terminations

No special tools are required.

5. Equipped with guide keys

Guide keys are used to prevent incorrect wiring.

6. Pending TÜV, UL certifications

Testing is underway to get this series qualified for various safety standards.

7. RoHS compliant

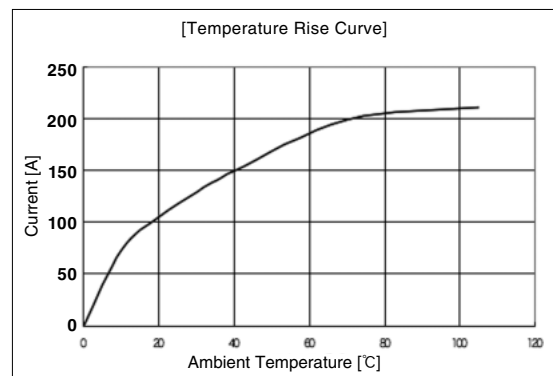
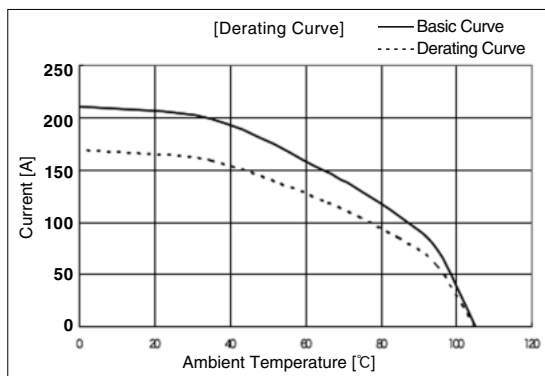
All materials and substances used to produce this product comply with the RoHS compliant standards.

■ Product Specifications

Ratings	Rated Current (Note 3)	70A (14mm ² (6 AWG) cable) 130A (22mm ² (4 AWG), 38mm ² (4 AWG) cable, Ambient Temperature 25°C)	Operating Temperature Range	-40°C to 105°C (Note 1)
	Rated Voltage	AC 1000V, DC 1000V	Storage Temperature Range	-10°C to 60°C
UL, TÜV	Rated Current (Note 3)	70A (14mm ² (6 AWG) cable) 90A (22mm ² (4 AWG), 38mm ² (2 AWG) cable)	Operating Temperature Range	-40°C to 105°C (Note 1)
	Rated Voltage	AC 600V, DC 600V	Storage Temperature Range	-10°C to 60°C

Note 1 : Including temperature rise due to current carrying.

[Reference] Derating curve and temperature rise curve



Note 2 : The derating curve is derived from the basic curve multiplied by the derating factor of 0.8.

Note 3 : 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 UL or TÜV approved product, please use the product within the specified range as well as the derating curve area.

Note 4 : The measurement method of the derating curve is shown below.

- Test specimen : This product, unused prior to testing.
- Test cable conductor cross sectional area : 22mm²
- Test condition : Power supplied while the specimen is in a stationary state and then measured.

Items	Specifications	Conditions
1. Contact Resistance	0.5mΩ max	Measured with DC 1A
2. Insulation Resistance	1,000MΩ min	Measured with DC 500V
3. Withstanding Voltage	No flashover or breakdown	AC 3310V for 1 minute
5. Durability	1) Contact Resistance : 1mΩ max 2) Inserting and Extracting Force : 150N max	30 mating cycles
6. Temperature Cycles	Insulation Resistance : 1,000MΩ min	-55°C : 30 minutes → Room temperature : 2 to 3 minutes → 105°C : 30 minutes → Room temperature : 2 to 3 minutes 5 cycles
7. Salt Water Spray	Should not have functional problems	5% concentration of salt water, left for 48 hours
8. Humidity resistance (steady state)	Insulation Resistance : 10MΩ min (in high humidity) 100MΩ min (dry)	Temperature 40°C, humidity 90 to 95%, 96 hours

■ Materials / Finish

Component	Material	Finish	Remarks
Housing	PBT resin	————	UL94V-0
Terminal cover	PA resin	————	UL94V-0
Contact spring	Copper alloy	Silver plating	————
Contact	Copper	Silver plating	————
Screw parts	Brass	Nickel plating	————

■ 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.

● Connector

EM 12 M R * - 1 S C A ()**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

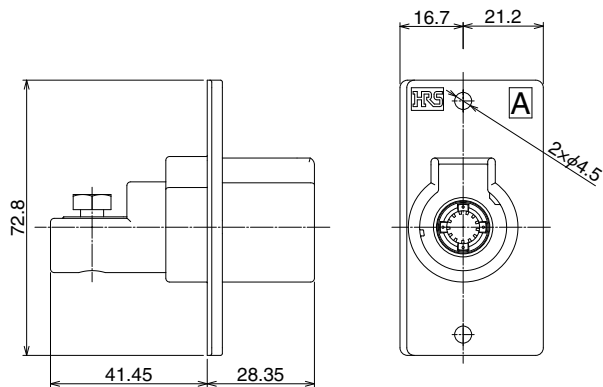
● Crimp Contact

EV 1 - P C * - 1 1 2 ()**

① ⑪ ⑦ ⑧ ⑤ ⑫ ⑬ ⑭ ⑩

① Series Name : EM, EV	⑧ Contact Termination Method : C = Crimp termination
② Shell Size : 12	⑨ Mating Guide Display : 2 different keying options available from A to B
③ Specialty : M=Mold type	⑩ Other specification differences are noted with (01), (02)... to distinguish certain variations.
④ Connector Type : R=Receptacle P=Plug	⑪ Series Number
⑤ I distinguish heteromorphic correspondence	⑫ Contact type : 1=Loose piece contacts
⑥ No. of Contacts : 1	⑬ Contact Form, Size 1 = Supports an equivalent cable with 22mm ² conductor cross section area 3 = Supports an equivalent cable with 38mm ² conductor cross section area
⑦ Contact Structure : S=Female contact P=Male contact	⑭ Plating Specification : 2=Silver plated

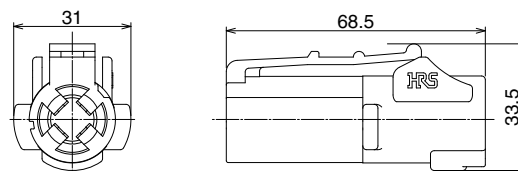
■ Receptacle



Unit : mm

Part No.	HRS No.	Remarks
EM12MR-1SCA(10)	138-0030-2 10	Color : Red
EM12MR-1SCB	138-0032-8 00	Color : Black

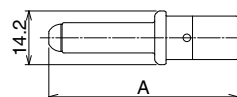
■ Plug



Unit : mm

Part No.	HRS No.	Remarks
EM12MP-1PCA(10)	138-0031-5 10	Color : Red
EM12MP-1PCB	138-0033-0 00	Color : Black

■ Crimp Contact



Unit : mm

Part No.	HRS No.	A	Remarks
EV1-PC-132(02)	139-0014-2 02	57	38mm ² 1pcs / pack
EV1-PC-112(02)	139-0004-9 02	50	22mm ² 1pcs / pack

◆ **Tools**

- Recommended Crimp Tools

HT111/9H-60



HT112/REC-150F

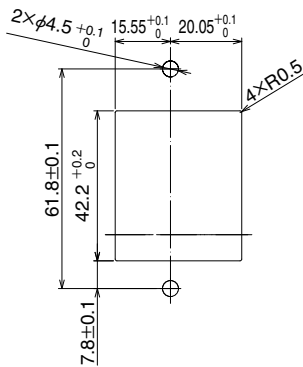


Note : Please perform regular maintenance on your crimp tool according to its instruction manual.

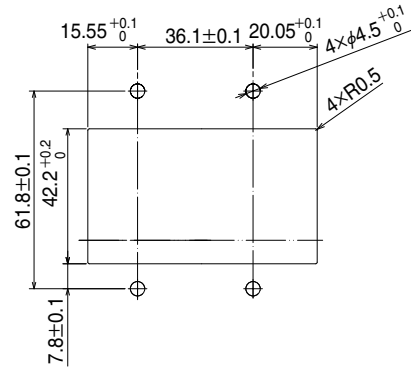
Tool/Jig	Part No.	HRS No.	Remarks
Manual hydraulic type crimp tool	HT111/9H-60	902-1515-2	Equivalent product : 9H-60 made by IZUMI Product Company
Electric hydraulic type crimp tool	HT112/REC-150F	902-1516-5	Equivalent product : REC-150F made by IZUMI Product Company

◆ **Panel Cut-Out Dimensions**

Single Mounting



Multiple Mounting



◆ **Safety Precautions**

⚠ **Warning**

- 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.
- After mating this connector, perform a light pull on the cable to ensure that it has been correctly mated and the locking process will hold it in place. If it is not mated correctly, then the cable will be removed. An incomplete mate can cause disconnection, contact failure and a significant danger threat.

⚠ **Caution**

- This connector was designed to be used in a stable and stationary environment, do not try to operate this connector where vibrations will occur.
- 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.



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