PRODUCT CATALOG

HIROSE ELECTRIC CO.,LTD.

HR41 Series

Waterproof Connectors with Plastic Shell for Outdoor Use





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Sep. 2021 ⑤

Features

1. Waterproof Connector with Excellent Weather Resistance for Outdoor Use

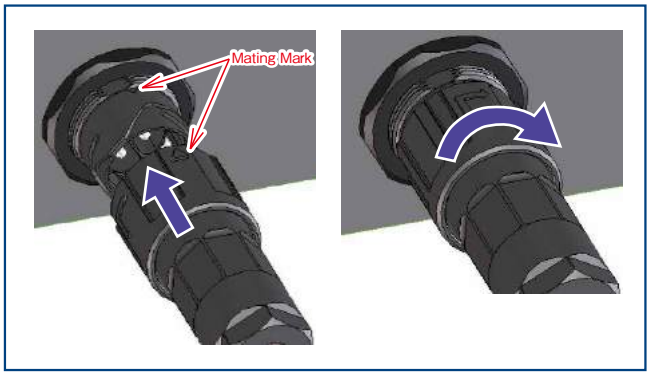
With a highly durable and weather resistant plastic shell, HR41 is a lightweight connector ideal for outdoor use.

2. Waterproof Performance

IP67, IP68 when mated.
IP67 : Left for 30 min. at a water depth of 1m.
IP68 : Left for 14 days at a water depth of 2m.

3. Easy to Operate Bayonet Lock

Bayonet lock that completes locking in a single action for easy installment even in dimly lit areas.



Bayonet Lock

4. Supports Field Assembly

The simple crimp connection and easy assembly design are ideal for on-site assembly.

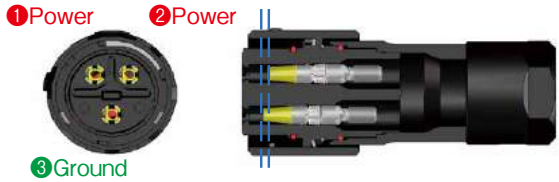
5. Compatible with Commerical Tools

Crimp contacts can be terminated using JIS C 9711 crimp tools.

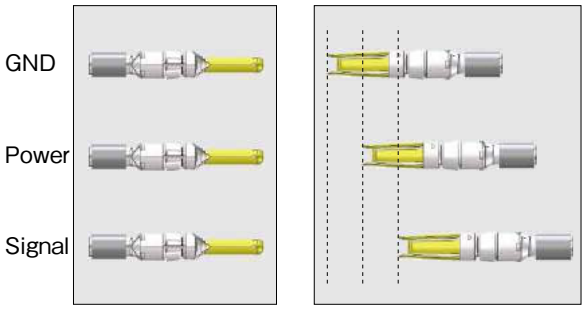
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6. Sequence Design

3pos. : 2 Stage Sequential Mating
5pos. : 3 Stage Sequential Mating



Ground Comes into Contact First (3pos.)



Sequential Mating Design

7. Designed to Accommodate Hot Swapping (5pos. Plug)

Hot Swapping Conditions: 20A AC/300V AC (50 mating cycles)
Test method conforms to UL1977 standards.

8. Surge Resistance

Walls between adjacent contacts provide insulation against 15kV surges caused by lightning.

9. Gold-plated Contact Portion

The interface of the contact is gold plated for high contact reliability.

10. Safety Standard Certified

UL and TÜV certified.

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Product Specifications

Rated Current (Note 1)	3pos.: 38A (Ambient Temperature 25℃)	Operating Temperature (Note 2)	-40 to +105℃
	5pos.: 20A (When using 4pos. with Ground Removed)	Storage Temperature Range	-10 to +60℃
Rated Voltage	1000V AC/DC		

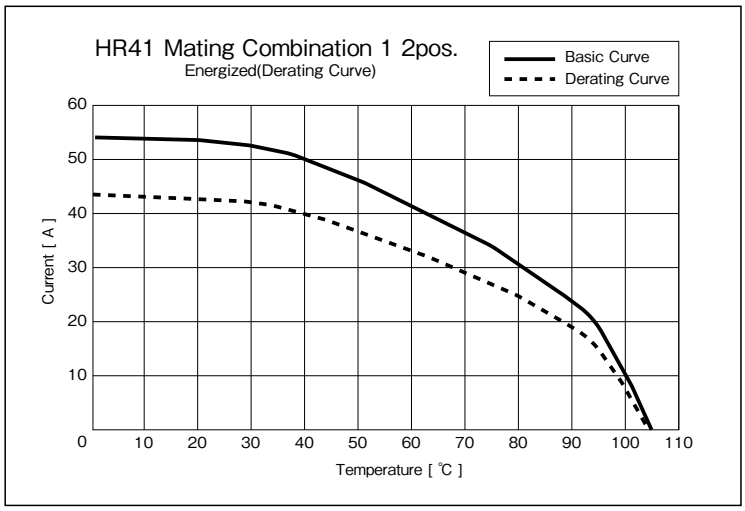
UL,TÜV	Rated Current (Note 1)	3pos.: 20A	Operating Temperature (Note 2)	-40 to +65℃
		5pos.: 10A	Storage Temperature Range	-10 to +60℃
	Rated Voltage	600V AC/DC		

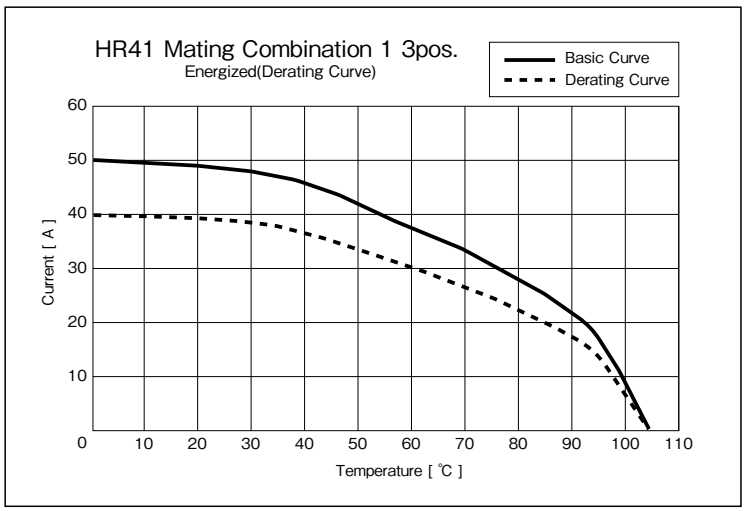
Items	Specifications	Conditions
Contact Resistance	2mΩ Max.	Measured at 1A DC
Insulation Resistance	5000MΩ Min.	Measured at 500V DC
Withstanding Voltage	No flashover or breakdown	3 pos. : Apply 4260V AC for 1 min. 5 pos. : Apply 2200V AC for 1 min.
Vibration Resistance	No electrical discontinuity of 10μs or more	10 cycles in 3 axial directions at a frequency of 10-500-10Hz, half amplitude 0.75mm and 11 min/cycle
Shock	No electrical discontinuity of 10μs or more	Acceleration 490m/s^2, duration 11ms, half-sine wave,3 times each for 3 axial directions
Mating Durability	Contact resistance 4mΩ Max.	200 mating cycles
Temperature Cycle	Insulation resistance 5000Ω Min.	-55℃ : 30min. → Ambient Temp. : 2-3min. → +85℃ : 30min. → Ambient Temp. : 2-3min., 5 cycles
Salt Spray	No functional issues	5% concentration salt water sprayed for 1,000 hours in mated connector condition.
Moisture Resistance (Steady State)	Insulation Resistance : 50MΩ (High Humidity) 500MΩ (Dry)	40℃ temperature, 90 to 95% humidity for 96 hours
Water Resistance	No water intrusion inside connector	Left submerged at a depth of 2m in the mated condition for 14 days

Note 1 : Varies depending on the temperature the connector is used at.
When applying the UL and TÜV standards, use within the derating curve.
Note 2 : Includes temperature rise due to current flow.
Note 3 : Depending on the cable design and specifications, cable clamping force, rotation force, waterproof performance, etc. may differ.
Please confirm before use.

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[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 measurement method of the derating curve is as follows:
- HR41, unused prior to testing.
- Conductor cross-sectional area of test cable : 5.5mm^2
- Test condition : Measured after power supplied while the mated connectors are in a stationary state.

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Materials/Finish

Item	Material	Finish	UL Standard (Noncombustible)
Insulator	Polyamide, PBT	-	UL94V-0
Contact	Copper Alloy	Partially Gold Plated	-
O-ring, Gasket	Silicone Rubber	-	-

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

HR41 - 25 W B P A - 3 S C (##)
❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾ ❿

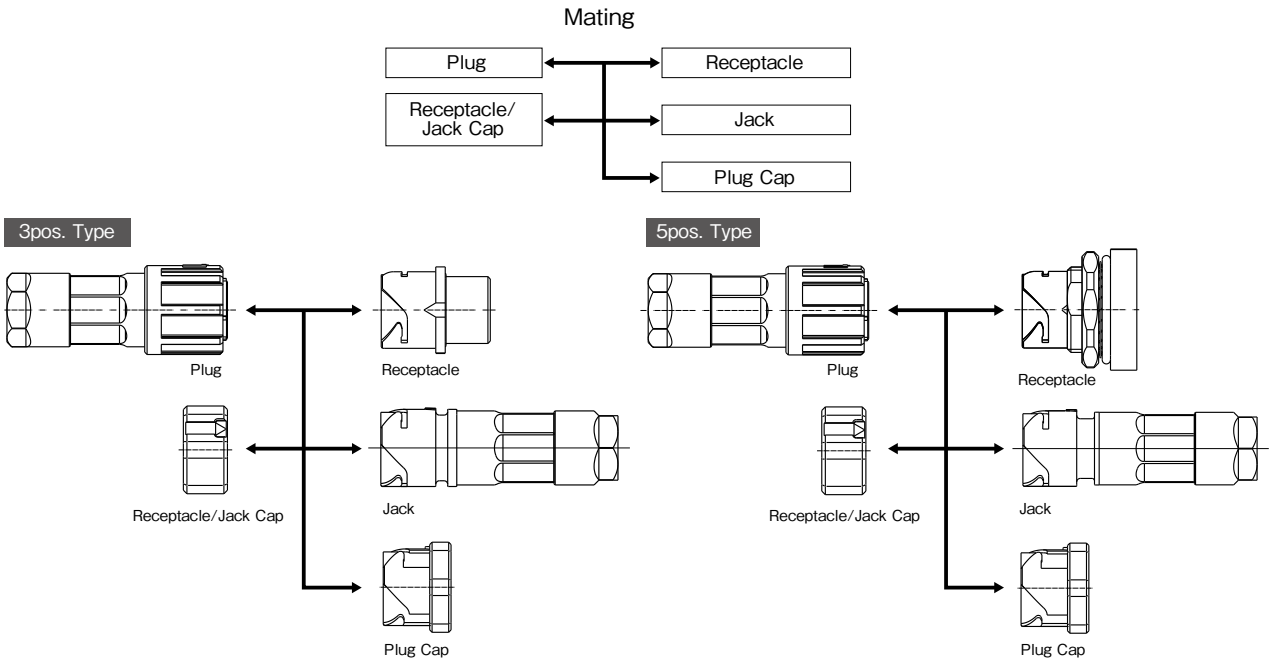
■ Crimp Contact

HR41 - S C - 1 2 1 (##)
❶ ❽ ❾ ⓫ ⓬ ⓭ ❿

❶ Series Name	HR41	❼ No. of Pos.	3, 5
❷ Shell Size	25	❽ Contact Gender	S : Female Contact P : Male Contact
❸ Specifications	W : Waterproof Type	❾ Contact Assembly	C : Crimp
❹ Lock Mechanism	B : Bayonet Lock	❿	Additional specifications are identified by adding (01), (02), etc.
❺ Shell Type	P : Plug R : Receptacle J : Jack	⓫ Contact Form	1 : Loose Contacts
		⓬ Design	2 : If the design of contacts of the same size differs, 1, 2, 3 etc. are added to distinguish them
❻ Serial Mark		⓭ Contact Area Plating	1 : Gold Plated

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Diagram of Connector Mating Combinations



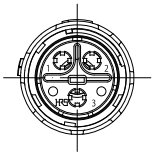
Type	Category	Connector	Crimp Contact	Cap
3pos.	Plug	HR41-25WBPD-3SC HR41-25WBPE-3SC HR41-25WBPF-3SC HR41-25WBPG-3SC	HR41-SC-111 HR41-SC-121 HR41-SC-141	HR41-25WBP-C
	Receptacle	HR41-25WBR-3PC	HR41-PC-111 HR41-PC-121	HR41-25WBR-C
	Jack	HR41-25WBJB-3PC HR41-25WBJE-3PC HR41-25WBJF-3PC		
5pos.	Plug	HR41-25WBP-5SC	HR41-SC-151	HR41-25WBP-C
	Receptacle	HR41-25WBRA-5PC	HR41-PC-151	HR41-25WBR-C
	Jack	HR41-25WBJ-5PC HR41-25WBJG-5PC		

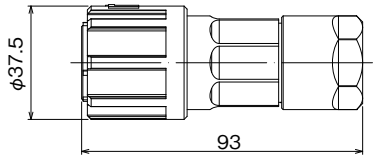
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3pos. Type

● Plug





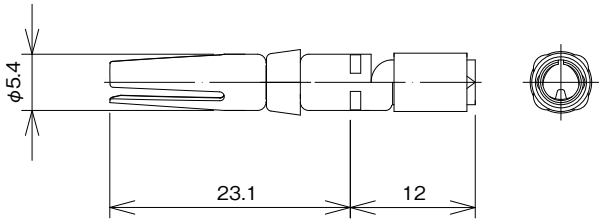


Part No.	HRS No.	No. of Pos.	Applicable Cable	Remarks	Purchase Unit
HR41-25WBPD-3SC	CL0141-0023-0-00	3	ϕ 9.0 ± 0.6	2 Stage Sequential Mating	10pcs per bag (Note 1)
HR41-25WBPE-3SC	CL0141-0024-2-00		ϕ 10.1 ± 0.6		
HR41-25WBPF-3SC	CL0141-0026-8-00		ϕ 13.5 ± 0.7		
HR41-25WBPG-3SC	CL0141-0036-0-00		ϕ 12.4 ± 0.6		

Note 1 : Orders are accepted in multiples of 10pcs.
Note 2 : Female contacts are assembled into the above product.

● Female Contact





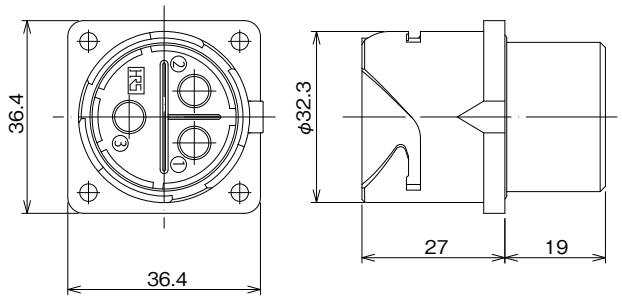
Type	Part No.	HRS No.	Plating Thickness of Contact Portion	Applicable Cable (Meets all of conditions 1, 2, and 3)	Purchase Unit
Loose Contacts	HR41-SC-111	CL0141-0001-7-00	0.2 μ m	1. Conductor Cross-section : 3.3 to 5.5mm^2 2. Conductor Outer Dia. : ϕ 3.1 Max. 3. Jacket Outer Dia. : ϕ 6 Max. (10 to 12 AWG)	3pcs per bag (Note 1)
	HR41-SC-111(01)	CL0141-0001-7-01	0.76 μ m		
	HR41-SC-121	CL0141-0003-2-00	0.2 μ m	1. Conductor Cross-section : 1.3 to 2.5mm^2 2. Conductor Outer Dia. : ϕ 2.0 Max. 3. Jacket Outer Dia. : ϕ 6 Max. (14 to 16 AWG)	
	HR41-SC-121(01)	CL0141-0003-2-01	0.76 μ m		
	HR41-SC-141	CL0141-0008-6-00	0.2 μ m	1. Conductor Cross-section : 5.5 to 6.5mm^2 2. Conductor Outer Dia. : ϕ 3.4 Max. 3. Jacket Outer Dia. : ϕ 6 Max. (10 AWG)	
	HR41-SC-141(01)	CL0141-0008-6-01	0.76 μ m		

Note 1 : Orders are accepted based on bag increments.
Note 2 : The contact design of HR41-SC-151, HR41-SC-111, HR41-SC-121, and HR41-SC-141 differ, so be careful when assembling for use.

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● Receptacle (Flange Type)



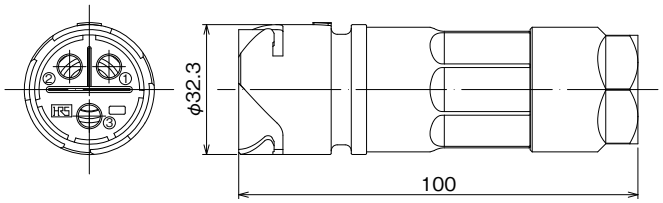


Part No.	HRS No.	No. of Pos.	Purchase Unit
HR41-25WBR-3PC	CL0141-0006-0-00	3	10pcs per bag (Note 1)

Note 1 : Orders are accepted in multiples of 10pcs.
Note 2 : Male contacts are assembled into the above product.

● Jack





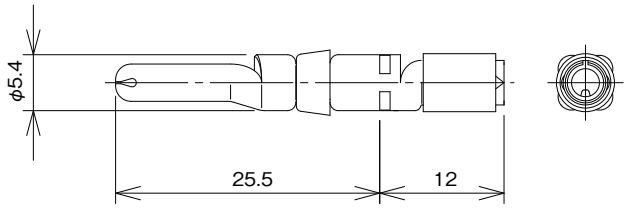
Part No.	HRS No.	No. of Pos.	Applicable Cable	Purchase Unit
HR41-25WBJB-3PC	CL0141-0017-7-00	3	φ 11.8 ± 0.4	10pcs per bag (Note 1)
HR41-25WBJE-3PC	CL0141-0038-0-00		φ 10.1 ± 0.6	
HR41-25WBJF-3PC	CL0141-0019-2-00		φ 13.5 ± 0.7	

Note 1 : Orders are accepted in multiples of 10pcs.
Note 2 : Male contacts are assembled into the above product.

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● Male Contact





Type	Part No.	HRS No.	Plating Thickness of Contact Portion	Applicable Cable (Meets all of conditions 1, 2, and 3)	Purchase Unit
Loose Contacts	HR41-PC-111	CL0141-0002-0-00	0.2 μm	1. Conductor Cross-section : 3.3 to 5.5mm^2 2. Conductor Outer Dia. : φ 3.1 Max. 3. Jacket Outer Dia. : φ 6 Max. (10 to 12 AWG)	3pcs per bag (Note)
	HR41-PC-111(01)	CL0141-0002-0-01	0.76 μm		
	HR41-PC-121	CL0141-0004-5-00	0.2 μm	1. Conductor Cross-section : 1.3 to 2.5mm^2 2. Conductor Outer Dia. : φ 2.0 Max. 3. Jacket Outer Dia. : φ 6 Max. (14 to 16 AWG)	
	HR41-PC-121(01)	CL0141-0004-5-01	0.76 μm		

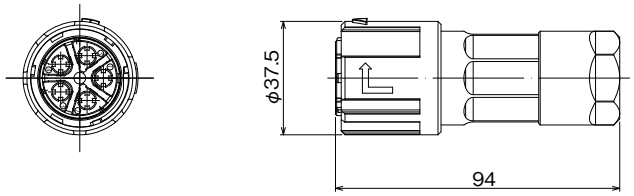
Note : Orders are accepted based on bag increments.

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5pos. Type

● Plug



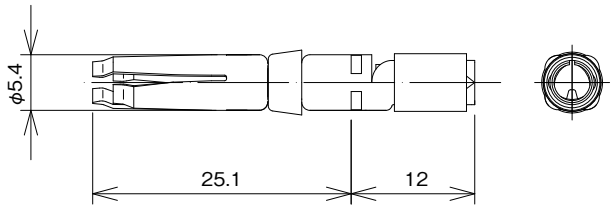


Part No.	HRS No.	No. of Pos.	Applicable Cable	Remarks	Purchase Unit
HR41-25WBP-5SC	CL0141-0009-9-00	5	ϕ 11.0 ± 0.3	3 Stage Sequential Mating	10pcs per bag (Note 1)

Note 1 : Orders are accepted in multiples of 10pcs.
Note 2 : Female contacts are assembled into the above product.

● Female Contact



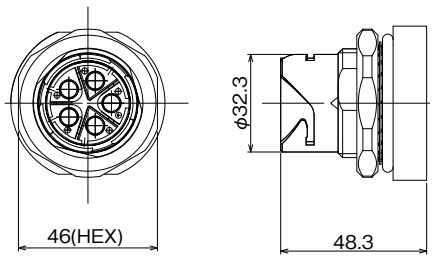


Type	Part No.	HRS No.	Plating Thickness of Contact Portion	Applicable Cable (Meets all of conditions 1, 2, and 3)	Purchase Unit
Loose Contacts	HR41-SC-151	CL0141-0011-0-00	0.2 μ m	1. Conductor Cross-section : 0.75 to 2.5mm^2 2. Conductor Outer Dia. : ϕ 2.4 Max. 3. Jacket Outer Dia. : ϕ 6 Max. (14 to 18 AWG)	5pcs per bag (Note 1)

Note 1 : Orders are accepted based on bag increments.
Note 2 : The contact design of HR41-SC-151, HR41-SC-111, HR41-SC-121, and HR41-SC-141 differ, so be careful when assembling for use.

● Receptacle (Bulkhead Type)





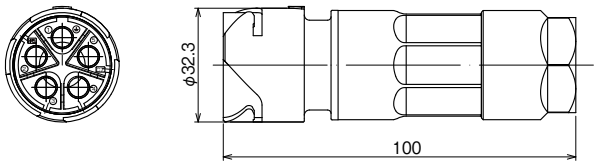
Part No.	HRS No.	No. of Pos.	Purchase Unit
HR41-25WBRA-5PC	CL0141-0010-8-00	5	10pcs per bag (Note 1)

Note 1 : Orders are accepted in multiples of 10pcs.
Note 2 : Male contacts are assembled into the above product.

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● Jack



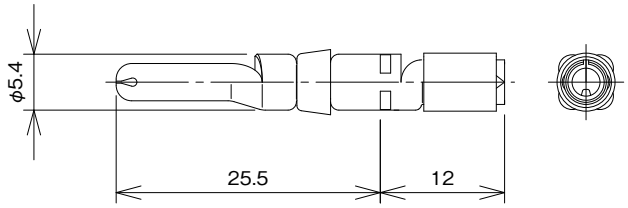


Part No.	HRS No.	No. of Pos.	Applicable Cable	Purchase Unit
HR41-25WBJ-5PC	CL0141-0040-0-00	5	ϕ 11.0 ± 0.3	10pcs per bag (Note 1)
HR41-25WBJG-5PC	CL0141-0029-6-00		ϕ 12.4 ± 0.6	

Note 1 : Orders are accepted in multiples of 10pcs.
Note 2 : Male contacts are assembled into the above product.

● Male Contact





Type	Part No.	HRS No.	Plating Thickness of Contact Portion	Applicable Cable (Meets all of conditions 1, 2, and 3)	Purchase Unit
Loose Contacts	HR41-PC-151	CL0141-0012-3-00	0.2 μ m	1. Conductor Cross-section : 0.75 to 2.5mm^2 2. Conductor Outer Dia. : ϕ 2.4 Max. 3. Jacket Outer Dia. : ϕ 6 Max. (14 to 18 AWG)	5pcs per bag (Note)

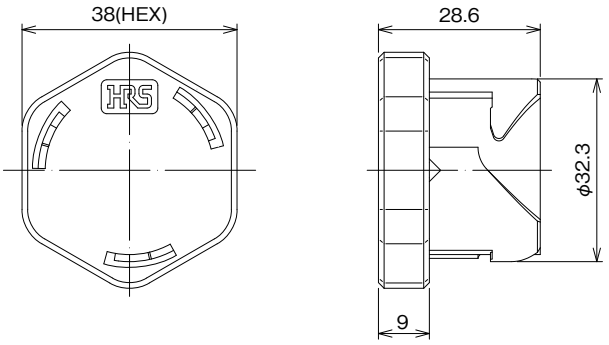
Note : Orders are accepted based on bag increments.

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Cap

● Plug Cap



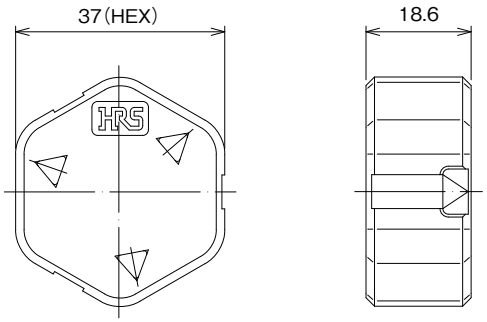


Part No.	HRS No.	Applicable Connector	Purchase Unit
HR41-25WBP-C	CL0141-0021-4-00	HR41-25WBPD-3SC HR41-25WBPE-3SC HR41-25WBPF-3SC HR41-25WBPG-3SC HR41-25WBP-5SC	50pcs per bag (Note)

Note : Orders are accepted in multiples of 50pcs.

● Receptacle/Jack Cap

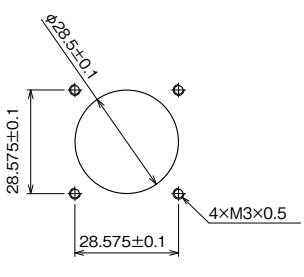




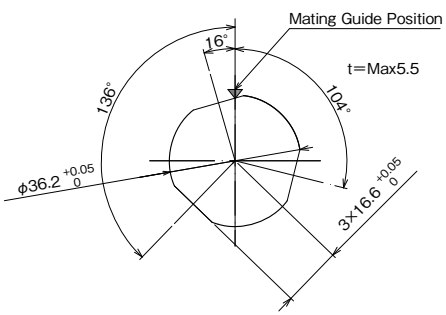
Part No.	HRS No.	Applicable Connector	Purchase Unit
HR41-25WBR-C	CL0141-0022-7-00	HR41-25WBR-3PC HR41-25WBRA-5PC HR41-25WBJB-3PC HR41-25WBJE-3PC HR41-25WBJF-3PC HR41-25WBJ-5PC HR41-25WBJG-5PC	50pcs per bag (Note)

Note : Orders are accepted in multiples of 50pcs.

Receptacle Panel Cutout Dimensions



Flange Type
(Usage Example : HR41-25WBR-3PC)



Bulkhead Type
(Usage Example : HR41-25WBRA-5PC)

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Applicable Tool

● Contact Extraction Tool



Type	Part No.	HRS No.	Purchase Unit
Contact Extraction Tool	HR41-TP	CL0150-0256-9-00	20pcs per bag

● Manual Crimp Tools



Tool Maker	Part No.
HOZAN TOOL IND.CO.,LTD.	P-75
Lobtex CO., LTD	AK15A
NICHIFU Co.,Ltd.	NH1

● Pneumatic Crimp Tool



Tool Maker	Part No.
Maxell Izumi Co., Ltd.	AC-5N.D Dice : Head No.1

Note : Perform maintenance in accordance with the tool manufacturer's instruction manual.

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Connector Usage Precautions

1. Assembly and installation of connectors and components should be done in reference to the specified assembly procedures and with the proper amount of tightening torque.
   If the torque is too low or too strong it may result in loosening or damage. (Please contact your Hirose representative for the correct procedures.)
2. After mating a connector, pull on the cable slightly to confirm mating and that the connector is firmly in place.

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While Taking into Consideration

Specifications mentioned in this catalog are reference values.
When considering to order or use this product, please confirm the Drawing and Product Specifications sheets.
Use an appropriate cable when using the connector in combination with cables.
If considering usage of a non-specified cable, please contact your sales representative.
If assembly process is done by jigs & tools which are not identified by Hirose, assurance will not be given.
If considering usage for below mentioned applications, please contact your sales representative.
In cases where the application will demand a high level of reliability, such as automotive, medical instruments, public infrastructure, aerospace/ defense etc. Hirose must review before assurance of reliability can be given.

HIROSE ELECTRIC CO.,LTD. 2-6-3,Nakagawa Chuoh,Tsuzuki-Ku,Yokohama-Shi 224-8540,JAPAN
https://www.hirose.com

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