

Plastic-Shelled Waterproof Connectors for Outdoor Use

HR41 Series



■Features

1. Weather-resistant and waterproof connectors for outdoor use

Lightweight, outdoor, waterproof connectors that utilize stout plastic shells that are also resistant to corrosive weather.

2. Waterproof ability

With its IP68 rating, it is guaranteed to ensure a waterproof seal while in the mated state.

3. Operator-friendly bayonet-locking system

Single action locking mechanism, its bayonet-lock makes it easier to complete the connection even in the dark.

4. Field wire connection applicable

Wire crimping type is operator-friendly and has an easy-to-assemble structure suited for wire connecting work in the field.

5. Compatible with general-purpose tools

Crimp terminals can be connected to wire using crimping tools in accordance with JIS C 9711.

6. Specialized sequence structure

3-step sequence structure design for 5-pin plugs protects the system in case of hot plugging.

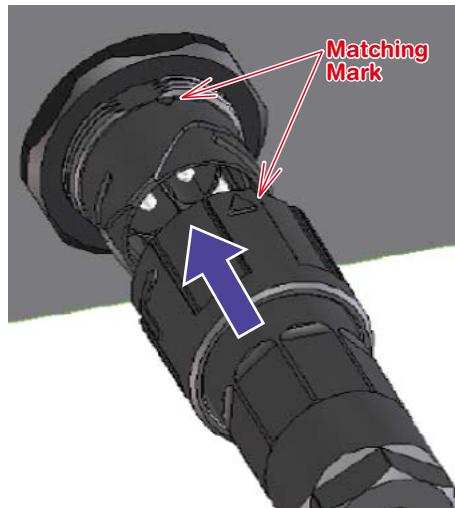
7. Gold plated contacts

Gold plated terminal contacts provide a reliable connection.

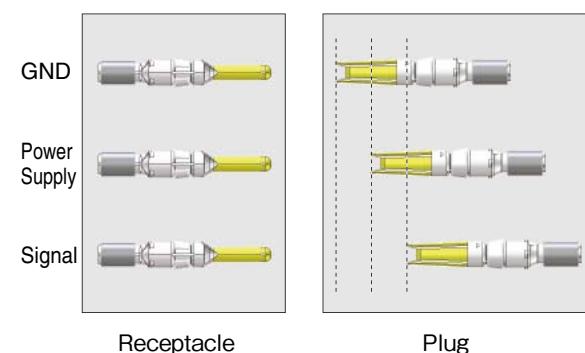
8. Safety standards

Certifications pending on various safety standards.

Bayonet Lock



Sequence Structure (5-Pin)



Note* Waterproof performance

IPx8: Immersion in water 2m deep for 14 days.

IPx7: Immersion in water 1m deep for 30 minutes.

■Product specification

Rating	Rated current	3-pin: 20A 5-pin: 10A	Service temperature range	-40°C to +85°C
	Rated voltage	3-pin: AC 400V, DC 400V 5-pin: AC 600V, DC 400V	Storage temperature range	-10°C to +60°C
Item		Specification	Condition	
1. Contact resistance		2mΩ or lower	Measure at DC 1A	
2. Insulation resistance		5,000MΩ or higher	Measure at DC 500V	
3. Voltage resistance		No flashover or breakdown	3-pin: AC 4,260V × 1 min 5-pin: AC 2,200V × 1 min	
4. Vibration resistance		No temporary electric interruption for 10μs or longer	Frequency 10-500-10Hz/cycle Half amplitude 0.75mm, 5 min/cycle 10 cycles each in 3 axis directions	
5. Impact resistance		No temporary electric interruption for 10μs or longer	Acceleration 490m/s ² , duration 11ms, 3 cycles each in 3 axis directions	
6. Repeated motions		Contact resistance 4mΩ or lower	50 cycles of repeated motions	
7. Temperature cycle		Insulation resistance 5,000MΩ or higher	-55°C × 30 min → room temp. × 2-3 min → 85°C × 30 min → room temp. × 2-3 min × 5 cycles	
8. Salt water spray		No functional problem	Exposure to 5% salt water spray × 1,000 hours in a mated condition	
9. Humidity resistance (in steady state)		Insulation resistance: 50MΩ or higher (at high temperatures), 500MΩ or higher (in dry conditions)	Temperature 40°C, Humidity 90-95%RH × 96 hours	
10. Water pressure resistance		No water seepage into the connector	Immersed in water 2m deep for 14 days in a mated condition	

■Materials

Item	Material	Treatment	Remarks
Insulator	Polyamide resin, PBT resin	—	UL94V-0
Terminal	Copper alloy	Partially gold plated	—
O-ring, gasket	Silicon rubber	—	—

■Product Number Structure

Type codes imbedded in a part number will tell you about the product specifications.

●Connectors

HR41 – 25 W B P A – 3 S C (*)**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

●Crimp terminals

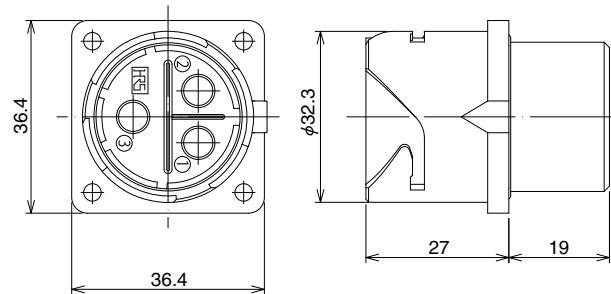
HR41 – S C – 1 2 1 (*)**

① ⑧ ⑨ ⑪ ⑫ ⑬ ⑩

① Series name: HR41	⑧ Terminal shape S: female terminal, P: male terminal
② Shell size: 25	⑨ Terminal connection type C: crimping
③ Special property W: waterproof type	⑩ List additional specifications following (01), (02)...
④ Lock mechanism B: bayonet lock	⑪ Terminal form 1: pin terminal
⑤ Shell type P: plug, R: receptacle, J: jack	⑫ Shape 2: distinguish between different terminal shapes in the same size by 1, 2, 3...
⑥ Serial code	⑬ Plating on contacts 1: gold plating
⑦ Pole No.: 3, 5	

■3-Pin Type

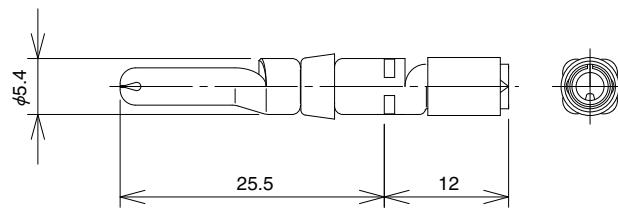
●Receptacle (Screw-fastened Type)



Product No.	HRS No.	Pole No.
HR41-25WBR-3PC	CL141-0006-0	0

*Note: The above product can be mated with male terminals.

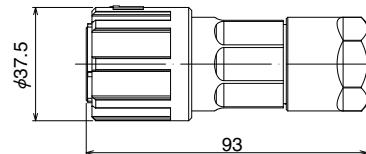
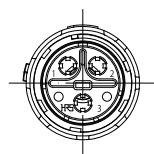
●Male terminals



Type	Product No.	HRS No.	Thickness of gold plating on contacts	Applicable wires (to satisfy the requirements 1, 2, 3)
Pin terminal	HR41-PC-111	CL141-0002-0	0.2μm	1) Conductor cross sectional area: 3.3-5.5mm ² 2) Conductor diameter: 3.1mm or smaller 3) Covered wire diameter: 6mm or smaller (AWG #10-#12)
	HR41-PC-111(01)	CL141-0002-0-01	0.76μm	
	HR41-PC-121	CL141-0004-5	0.2μm	1) Conductor cross sectional area: 1.3-2.5mm ² 2) Conductor diameter: 2.0mm or smaller 3) Covered wire diameter: 6mm or smaller (AWG #14-#16)
	HR41-PC-121(01)	CL141-0004-5-01	0.76μm	

*One pack contains 3 connectors.

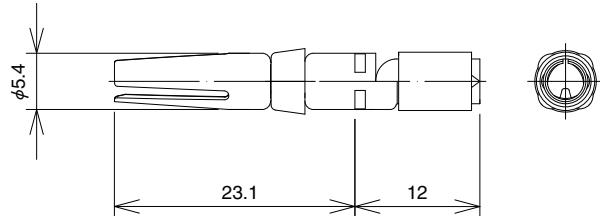
●Plug



Product No.	HRS No.	Pole No.	Applicable cable	Remarks
HR41-25WBPD-3SC	CL141-0023-0	3	$\phi 9.0 \pm 0.6$	—
HR41-25WBPE-3SC	CL141-0024-2	3	$\phi 10.1 \pm 0.6$	—
HR41-25WBPF-3SC	CL141-0026-8	3	$\phi 13.5 \pm 0.7$	—

*Note: The above products can be mated with female terminals.

●Female terminals



Type	Product No.	HRS No.	Thickness of gold plating on contacts	Applicable wires (to satisfy the requirements 1, 2, 3)
Pin terminal	HR41-SC-111	CL141-0001-7	0.2μm	1) Conductor cross sectional area: 3.3-5.5mm ² 2) Conductor diameter: 3.1mm or smaller 3) Covered wire diameter: 6mm or smaller (AWG #10-#12)
	HR41-SC-111(01)	CL141-0001-7-01	0.76μm	1) Conductor cross sectional area: 1.3-2.5mm ² 2) Conductor diameter: 2.0mm or smaller 3) Covered wire diameter: 6mm or smaller (AWG #14-#16)
	HR41-SC-121	CL141-0003-2	0.2μm	1) Conductor cross sectional area: 5.5-6.5mm ² 2) Conductor diameter: 3.4mm or smaller 3) Covered wire diameter: 6mm or smaller (AWG #10)
	HR41-SC-121(01)	CL141-0003-2-01	0.76μm	1) Conductor cross sectional area: 5.5-6.5mm ² 2) Conductor diameter: 3.4mm or smaller 3) Covered wire diameter: 6mm or smaller (AWG #10)
	HR41-SC-141	CL141-0008-6	0.2μm	1) Conductor cross sectional area: 5.5-6.5mm ² 2) Conductor diameter: 3.4mm or smaller 3) Covered wire diameter: 6mm or smaller (AWG #10)
	HR41-SC-141(01)	CL141-0008-6-01	0.76μm	1) Conductor cross sectional area: 5.5-6.5mm ² 2) Conductor diameter: 3.4mm or smaller 3) Covered wire diameter: 6mm or smaller (AWG #10)

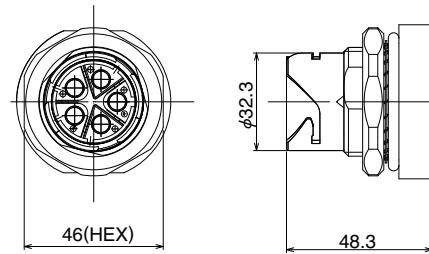
*One pack contains 3 connectors.

**Note: HR41-SC-151 has a different terminal structure than the following connectors, HR41-SC-111, HR41-SC-121, and HR41-SC-141.

Please pay attention to the combined use of these connectors.

■5-Pin Type

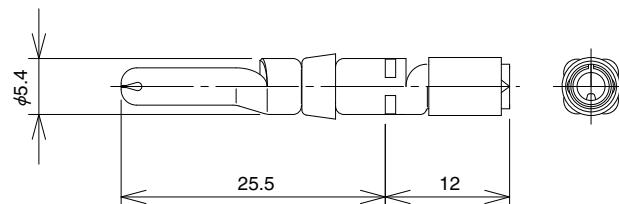
●Nut-fastened back mount type



Product No.	HRS No.	Pole No.
HR41-25WBRA-5PC	CL141-0010-8	5

*Note: The above product can be mated with male terminals.

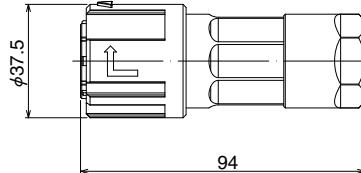
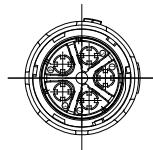
●Male terminal



Type	Product No.	HRS No.	Thickness of gold plating on contacts	Applicable wires (to satisfy the requirements 1, 2, 3)
Pin terminal	HR41-PC-151	CL141-0012-3	0.2μm	1) Conductor cross sectional area: 0.75-2.5mm ² 2) Conductor diameter: 2.4mm or smaller 3) Covered wire diameter: 6mm or smaller (AWG#14-#18)

*One pack contains 5 connectors.

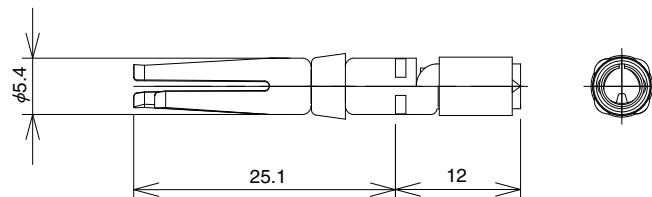
●Plug



Product No.	HRS No.	Pole No.	Applicable cable	Remarks
HR41-25WBP-5SC	CL141-0009-9	5	$\phi 11 \pm 0.3$	3-step sequence

*Note: The above product can be mated with female terminals.

●Female terminal



Type	Product No.	HRS No.	Thickness of gold plating on contacts	Applicable wires (to satisfy the requirements 1, 2, 3)
Pin terminal	HR41-SC-151	CL141-0011-0	0.2 μ m	1) Conductor cross sectional area: 0.75-2.5mm ² 2) Conductor diameter: 2.4mm or smaller 3) Covered wire diameter: 6mm or smaller (AWG #14-#18)

*One pack contains 5 connectors.

**Note: HR41-SC-151 has a different terminal structure than the following connectors, HR41-SC-111, HR41-SC-121, and HR41-SC-141.

Please pay attention to the combined use of these connectors.

■Tool

Type	Product name	HRS No.
Terminal extracting tool	HR41-TP	CL150-0256-9



●Recommended crimping tools

◆Manual-type crimping tools

Tool maker	Product No.
Hozan Tool Industrial Co., Ltd.	P-75
LOBTEX Co., Ltd.	AK15A
NICHIFU Co., Ltd.	NH11



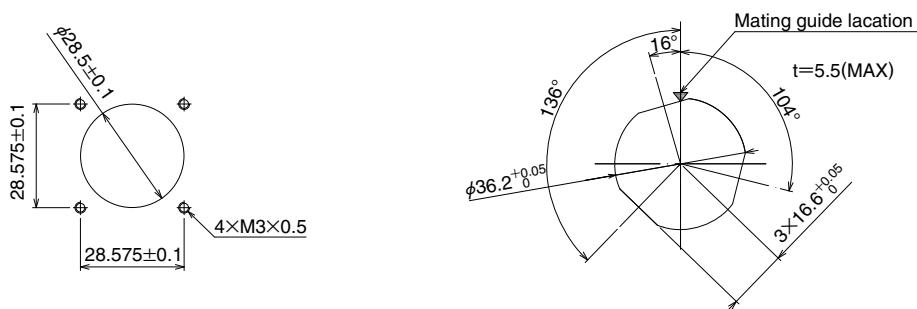
◆Air-type crimping tool

Tool maker	Product No.
Izumi Products Company	AC-5N.D. Dies: No.1 head



*Note: Please maintain your crimping tools in accordance with the manufacturer's instruction manuals.

■Dimensional drawing for receptacle panel mounting holes



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