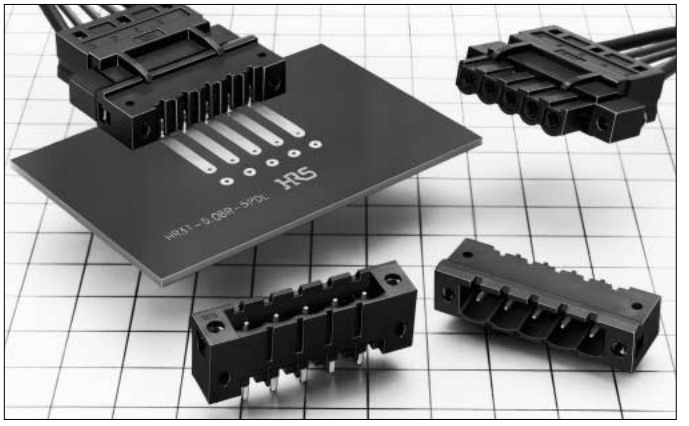
NEW

INTERFACE CONNECTORS FOR FACTORY AUTOMATION NETWORK

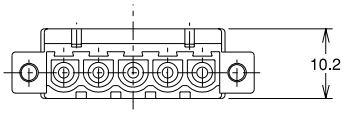
HR31 Series

DEVICE NET COMPLIANT

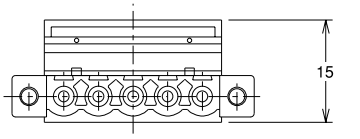


Comparison of plug height (Actual size)

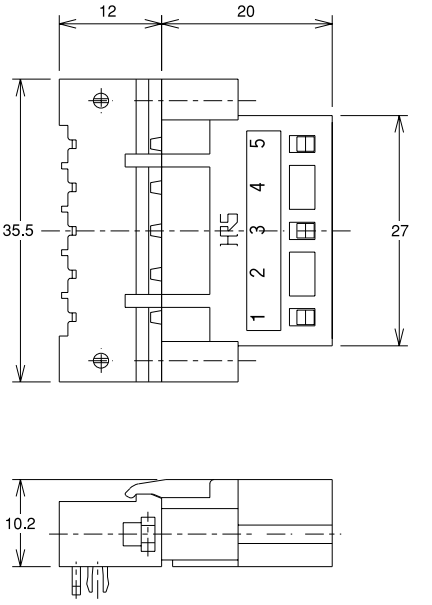
●Hirose's HR31



●Other manufacturer's product



Total space occupied by mated assemblies



■Features

1. Device net compliant
Complies with requirements of factory automation network specification.

2 Easy contact replacement
Crimp removable contacts allow easy contact replacement with a simple contact removable pin.

3. Prevents deformation of contact portion
Engagement area is fully protected, avoiding possible damage during insertion, removal of terminated conductor.

4. Allows use of a general-purpose tool
Termination of the conductor is accomplished with existing JIS C 9711 termination tool.

5. Provided with snap lock mechanism
Audible click when fully mated confirms correct mating of both assemblies.

6. Provided with full locking mechanism
Permanently attached self aligned screws(on plug) and threaded inserts(on receptacle) assure permanent engagement of both assemblies.

7 Enables high density mounting
Low height of 10.2 mm allows higher density mounting.

8. Prevents incorrect wiring
Individual contact positions are identified with molded-in numbers.

9. Prevents creepage of a board
Compliant board retention brackets(optional) securely holds board mounting receptacle.

■Applications

Power supply units and communication units of factory automation related equipments

■Product Specifications

Rating	Rated current Rated voltage	12 A (2.5mm² wire) 10 A (1.5mm² wire) AC250V,DC350V	Operating temperature Storage temperature	-40℃～+100℃ -40℃～+85℃

Item	Requirements	Conditions
1.Contact resistance	5 mΩ or less	Measured at DC 1 A
2.Insulation resistance	1000 MΩ or more	Measured at DC 500 V
3.Voltage proof	No flashover or breakdown	AC 2000 V, one minute
4.Impulse voltage proof	No flashover or breakdown	Standard waveform of 4 k V, positive/negative, 3 times each
5.Vibration	No electrical discontinuity for 10 μs or more	Frequency 10 Hz to 55 Hz to 10 Hz: 5 min Amplitude of 0.75 mm in 3 directions, 10 cycles each
6.Durability (Mating/Unmating)	Contact resistance 10 mΩ or less	100 times (Engagement area: 1000 times for a gold-plated product)
7.Rapid change of temperature	Insulation resistance 1000 MΩ or more	-40℃: 30 min -> Room temperature: 10 to 15 min -> +100℃: 30 min -> Room temperature: 10 to 15 min, 5 cycles
8.Damp heat	Insulation resistance : 10 MΩ or more (during high humidity) 100 MΩ or more (during dry)	Temperature 40℃, humidity 90 to 95%, 96 h

■Materials and finishes

Item		Material	Finish	Notes
Plug	Insulator	PBT resin	Black	UL94V-0 (Flammability rating)
	Screw	Steel	Zinc plating	
Crimp contacts	Crimp socket contacts	Engagement area: Phosphor bronze Termination area: Copper	Engagement area: Solder plating Termination area: Tin plating	Available with gold plating on engagement area
Receptacle	Insulator	PBT resin	Black	UL94V-0(Flammability rating)
	Pin contacts	Brass	Engagement area: Solder plating Termination area: Tin plating	The products with gold plated engagement area are also available.
	Threaded insert	Steel	Zinc plating	
	Board lock bracket	Phosphor bronze	Solder plating	Board temporary fixing pin

■Product Number Structure

●Connector

HR31 - 5.08 P - 5 S C (01)

❶ ❷ ❸ ❹ ❺ ❻ ❼

❶ Series name: HR31	❻ Termination method: C =Crimping DL=Right angle dip D =Straight dip
❷ Contact pitch (mm): 5.08	
❸ Connector type : P=Plug R=Receptacle	❼ For different specifications, a two-digit serial numbers (01, 02, ...) are added for classification.
❹ Number of contacts: 5	
❺ Contact type : S=Female contact P=Male contact	

●Crimp socket contact

HR31 - SC - 1 1 3

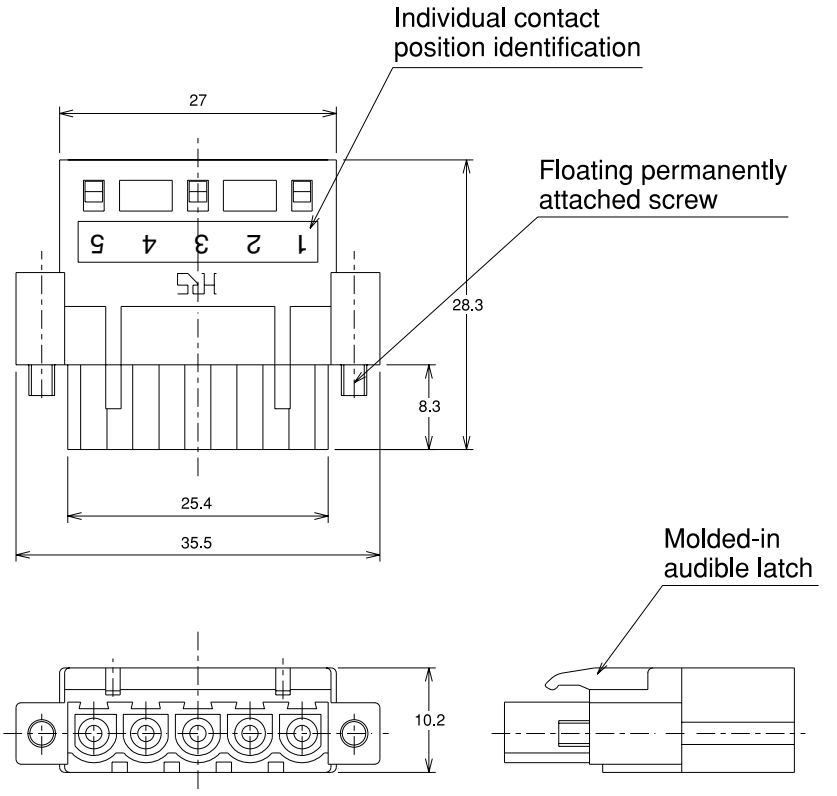
❽ ❾ ❿ ⓫ ⓬

❽ Series name: HR31	⓬ Classification of engagement area plating: 3=Solder plating 1=Gold plating
❾ Shape of contact SC: Female contact	
❿ Form of contact 1: Single contact	
⓫ Classification of change of shape : 1=Applicable electric wire size is 1.04 to 2.63mm² 2=Applicable electric wire size is 0.25 to 1.65mm²	

■Plug

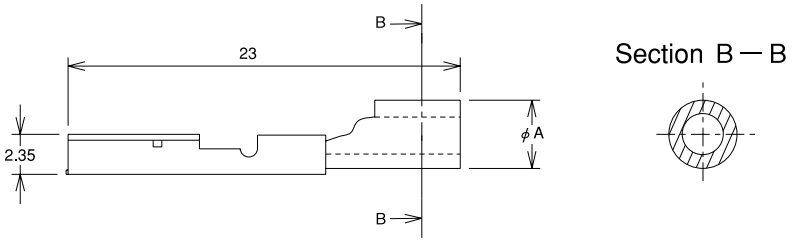
HR31-5.08P-5SC

Shown with terminated contacts fully inserted



HRS No.	Product No.	Weight	Notes
CL131-0002-2	HR31-5.08P-5SC	8g	———

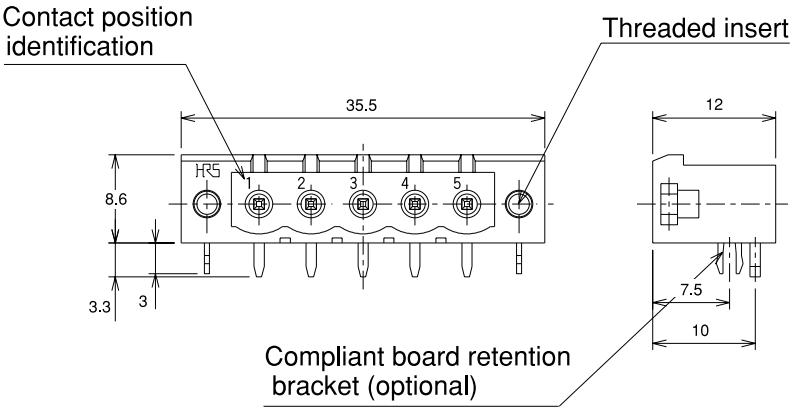
■Crimp Contact



HRS No.	Product No.	ϕA	Weight	Notes	Applicable electric wire
CL131-0006-3	HR31-SC-113	4.0	1g	Engagement area is solder plating.	1.04～2.63mm²
CL131-0007-6	HR31-SC-123	3.3		Engagement area is solder plating.	0.25～1.65mm²
CL131-0004-8	HR31-SC-111	4.0		Engagement area is gold plating.	1.04～2.63mm²
CL131-0005-0	HR31-SC-121	3.3		Engagement area is gold plating.	0.25～1.65mm²

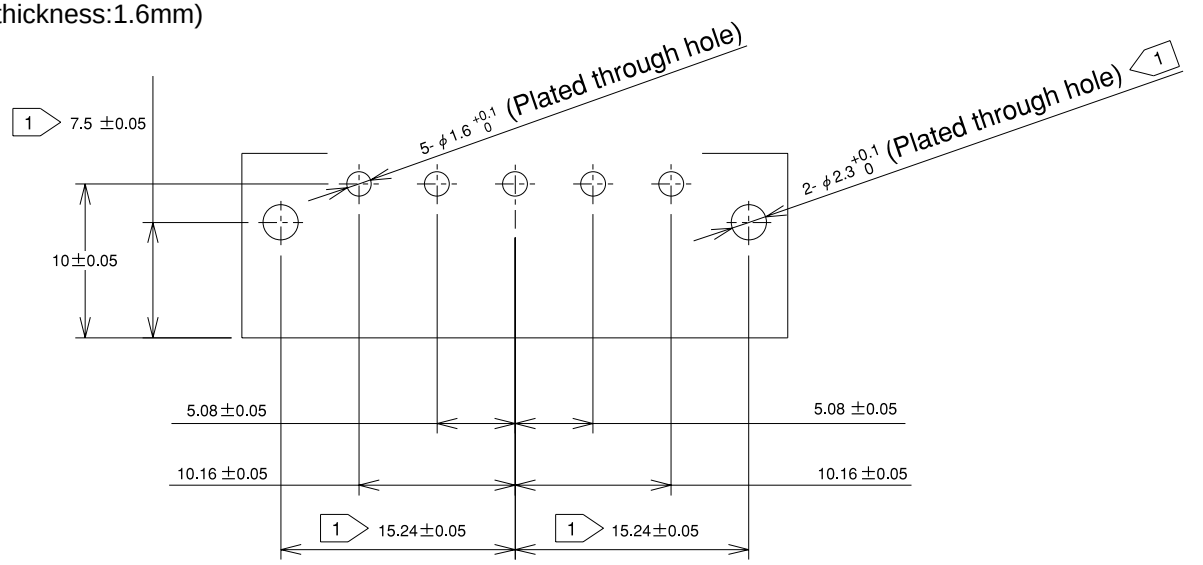
■Receptacle (Right Angle Dip)

HR31-5.08R-5PDL



◆Recommended Mounting Hole Pattern

(Board thickness:1.6mm)

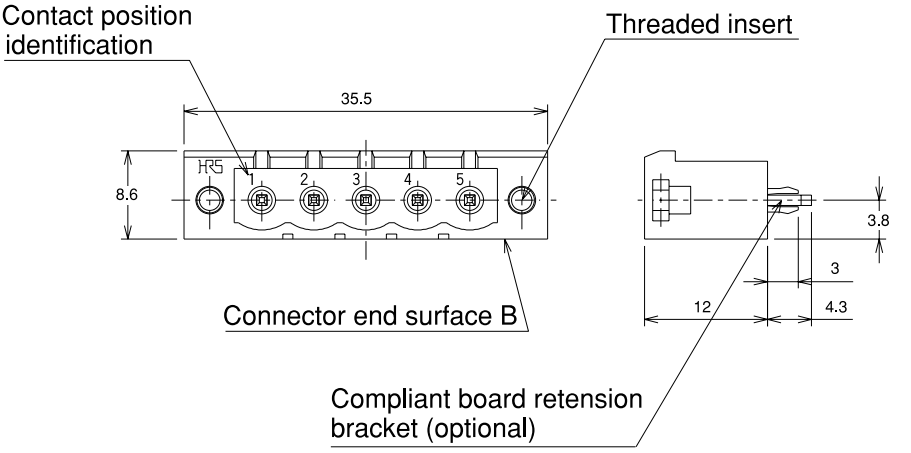


1 For receptacles with optional compliant retension brackets

HRS No.	Product No.	Weight	Notes
CL131-0001-0	HR31-5.08R-5PDL	4g	Engagement area is solder plating.
CL131-0001-0-01	HR31-5.08R-5PDL (01)		Engagement area is gold plating.
CL131-0001-0-02	HR31-5.08R-5PDL (02)		Without a board temporary fixing pin. Engagement area is solder plating.
CL131-0001-0-03	HR31-5.08R-5PDL (03)		Without a board temporary fixing pin. Engagement area is gold plating.

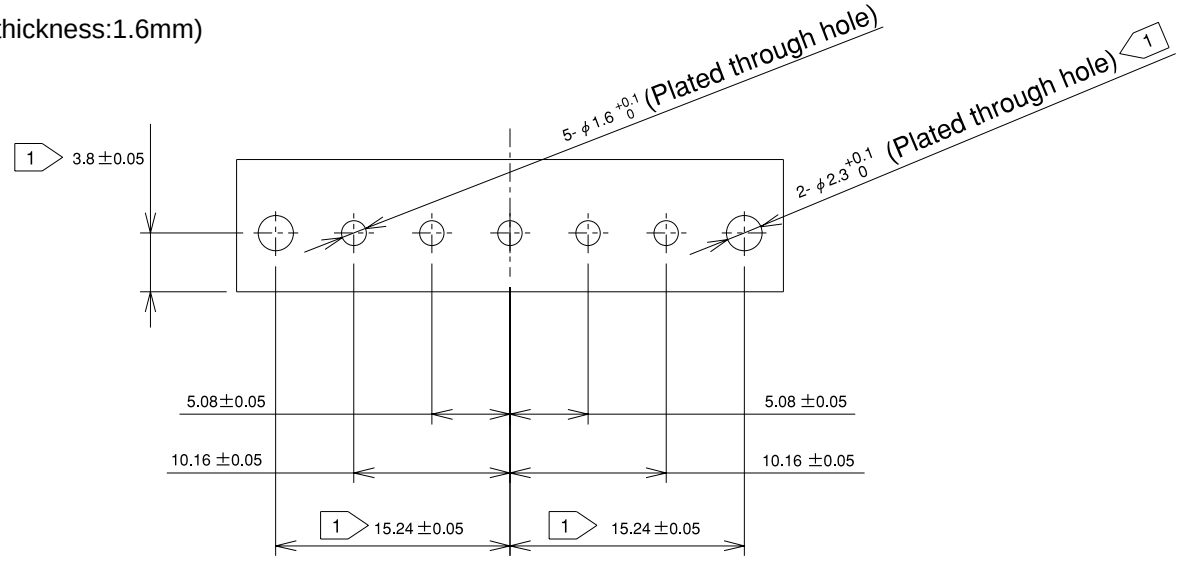
■Receptacle (Straight Dip)

HR31-5.08R-5PD



◆Recommended Mounting Hole Pattern

(Board thickness:1.6mm)



1 For receptacles with optional compliant retension brackets

HRS No.	Product No.	Weight	Notes
131-003-5	HR31-5.08R-5PD	4g	Engagement area is solder plating.
131-0002-2-01	HR31-5.08R-5PD (01)		Engagement area is gold plating.
131-0002-2-02	HR31-5.08R-5PD (02)		Without a board temporary fixing pin. Engagement area is solder plating.
131-0002-2-03	HR31-5.08R-5PD (03)		Without a board temporary fixing pin. Engagement area is gold plating.

■Applicable Tools

Type	HRS No.	Product No.
Manual crimp tool	CL150-0217-7	HR31-TC-01
Drawing tool	CL150-0215-1	HR31-SC-TP

Manual contact crimp tool

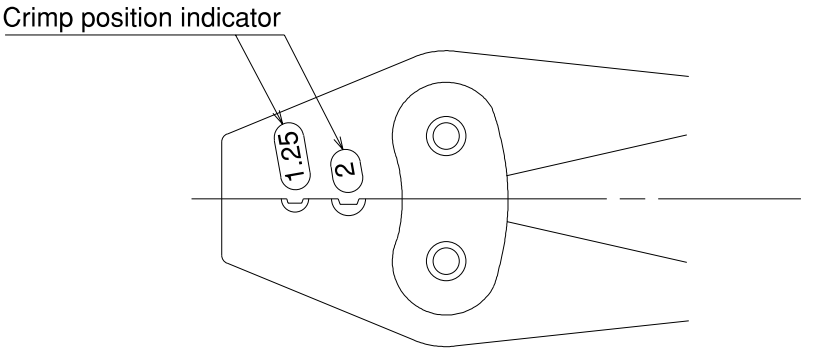
Contact removal pin

● Application procedure of tools

1. Manual contact crimp tool

The tool will terminate all specified crimp contacts. Placement of correct contact in corresponding crimp position on the tool is critical. The positions are clearly indicated on the tool as (2) and (1.25).The exposed conductor strip length is 5mm.

Crimp position indicator	Applicable socket crimp contact
Indicated as (2)	HR31-SC-113 or HR31-SC-111
Indicated as (1.25)	HR31-SC-113 or HR31-SC-121



2. Contact removal pin

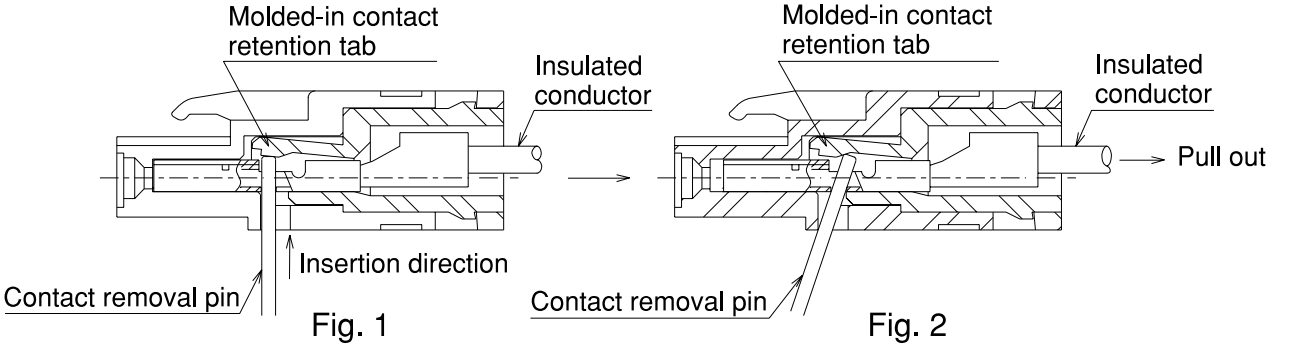
Contact removal pin provides easy method of contact removal from plug assembly.

Contact removal procedure

A. Fully insert the long end of the contact removal pin into the opening in the insulator.(Fig.1)

B. Move the pin forward, in the direction of the mating face.
This will cause the terminated contact to move in opposite direction.(Fig.2)

C. Pull out the conductor, with the crimped contact.(Fig.2)

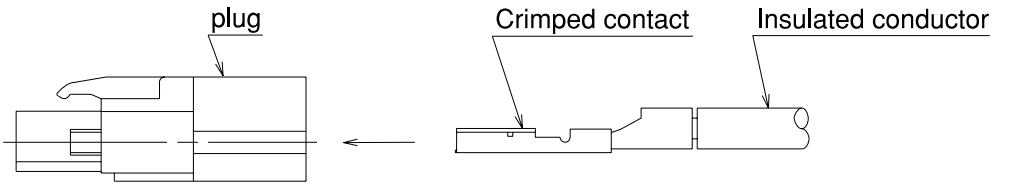


◆Usage Precautions

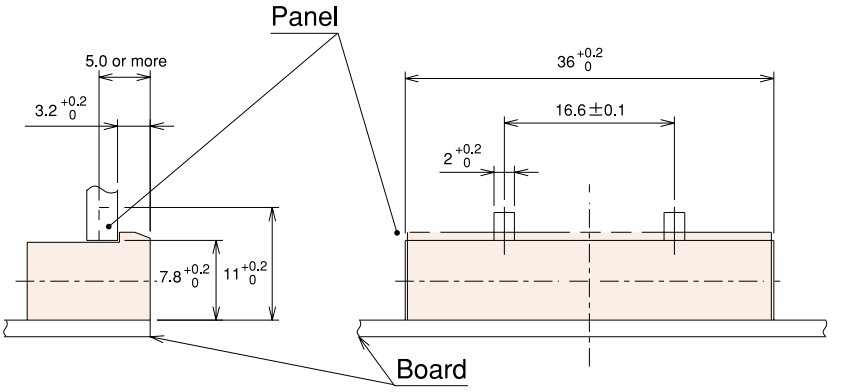
1. Contact insertion procedure

   Insert the crimped contact into the plug as shown until "click" is heard.

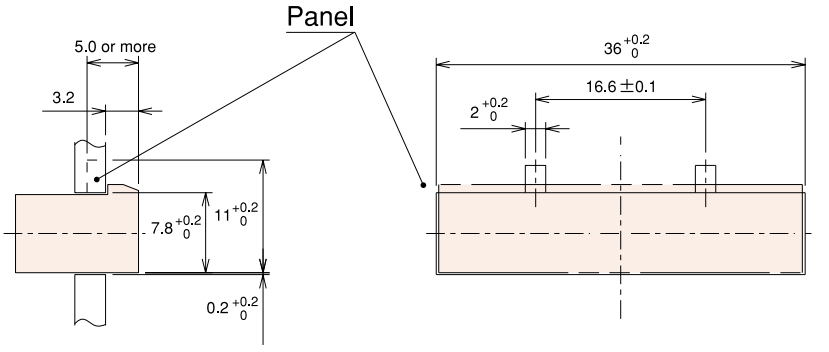
   Verify the correct seating by slightly pulling the conductor.

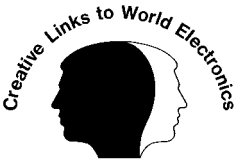


2. Recommended mounting panel dimensions (Right Angle Dip Termination Product No. : HR31-5.08R-5PDL)



3. Recommended mounting panel dimensions (Straight Dip Termination Product No. : HR31-5.08R-5PD)





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