ANHYUP
Safety Beam Sensors

Optoelectronic safety device

Safety light curtain

AH-NSP00 series

User's manual

CATALOG NUMBER AHLC-1012A

1. Product name : Press and shearing machine protection device

2. Use : This product is the press and shearing machine protection device and the purpose of installing this product is to protect the human body from dangerous machine.

3. Maintenance and Method : Do not use thinner, benzene, acetone, and oil for cleaning the head and controller. In case of large dust or mote adhere to the filter of the front head, please remove it with blower brush(for camera lens). Do not blow with your mouth. Wash small dust and mote whit a soft cloth(lens cleaner) soaked a small amount of alcohol carefully. Do not wash strongly. If the filter is damaged, it will cause error. When the protective device occurred abnormality symptom, please call our company and get help from a professional. Never disassemble and handle the product discretionally.

4. Product Constitution

	Single	Double
Head (the part of the sensor)	Projector×1 photo-receiver×1	Projector×2 photo-receiver×2
Controller (the part of the control)	Single Controller×1	Double Controller×1
Component	Projector cable×1 (4P connector, black) photo-receiver cable×1 (5P connector, grey) Power cable×1 (4P connector, 흑색) Fixed mold for single 1set User's guide	Projector cable×2 (4P connector, black) photo-receiver cable×1 (5P connector, grey) Power cable×1 (4P connector, 흑색) Fixed mold for Double 1set User's guide

5. Installation of the product

5.1. You have to set up the location and install the light projector and the optical receiver to secure the safety distance

5.2. Install the mounting bracket to FRAME. (When you install using the stanchion)

5.3. Fix the light projector and the optical receiver to the FRAME or fix it to the stanchion temporarily

5.4. Check the control box's power is OFF, then connect power cable and control cable.

5.5. Turn on the control box's power

5.5.1 Check whether the power lamp of the control box is turn on a light.

5.5.2 Check whether the risk lamp is turn on a light on the control box panel.

5.6. Move the light projector and the optical receiver top and bottom and right and left then adjust the optical axis.,

5.7. If all the optical axis of the light projector and the optical receiver become incident light, the optical axis indicate LED turn on a light and the confirmation lamp of the control box turn on a light and turn off the risk lamp of the control box.

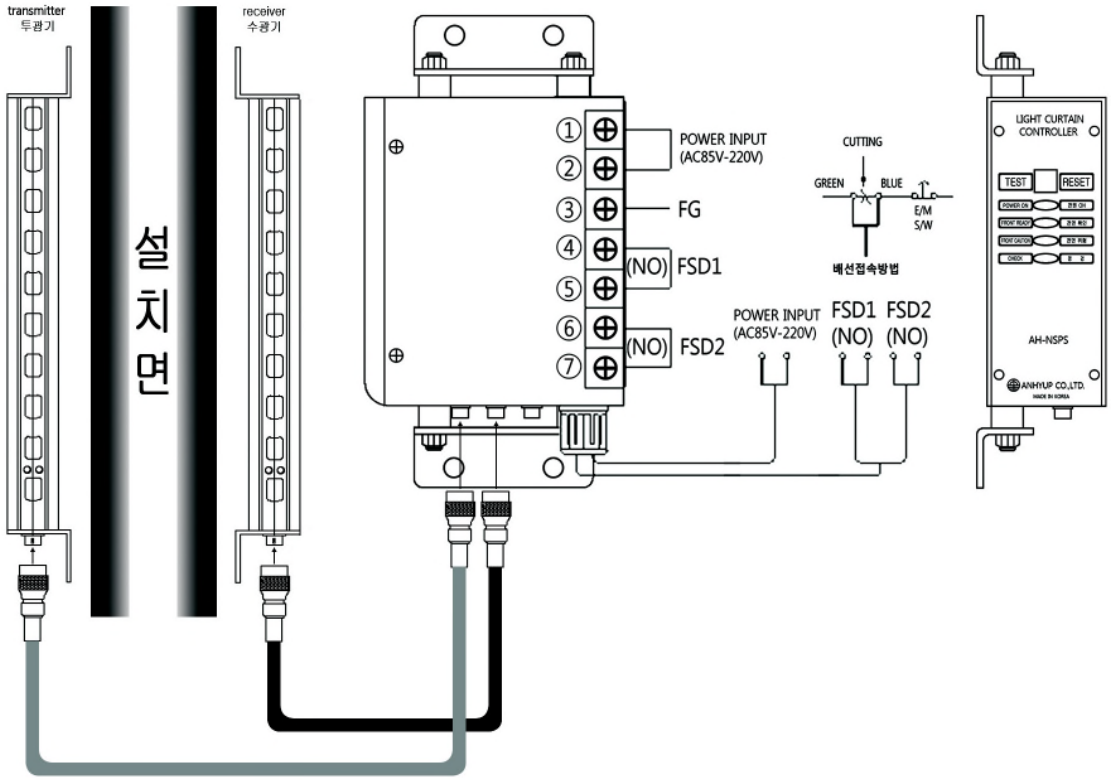
5.8. Check the lighting range of the confirmation lamp by moving the light projector and the optical receiver left and right. Then fix each fixed element completely.

5.9. Pres the operation switch. (At this time, you must not put the tools or the part of the body on the risk place).

5.9.1 When the state of shade the light, the slide must not descend.
(the protection device output is Off).

5.9.2 When the light pass, the slide must descend. (the protection device is ON).

※ You must use TEST/RESET S/W when you restart the device or clear the check mode.



6. Safety distance estimate equation

Please secure the safety distance(S) between sensor and risk part. There are fears you may be wounded because the machine doesn't stop.

The safety distance is the minimum distance between NSP and risk part to stop the risk part before the human body or objects reach the dangerous part of the machine. When the human body irrupt into the NSP's detection area, the safety distance is calculated in the following way.

Safety distance(S) = invasion speed to detection area(K) x the machine and sensor's total response time(T) + calculated additional distance from minimum detection of the sensor object diameter(C)

7. 사양

Ratings/Specifications											
Single type	AH-NSP□□										
Number of beams	08	12	16	20	24	28	32	36	40	44	48
Double type	AH-NSPD□□										
Number of beams	08	12	16	20	24	28	32	36	40	44	48
Protective height(mm)	140	220	300	380	460	540	620	700	780	860	940
Operating range	0.3 ~ 5m										
Response time	ON→OFF : 15ms max., OFF→ON : 25ms max.										
Startup waiting time	1.0s max.										
Beam gap	20mm										
Lens diameter	Effective 12mm × 8mm single convex lens										
Detection capability	Diameter 30mm Opaque objects										
Light source	Infrared LED (880nm wavelength)										
Effective aperture angle	Within±5° for the transmitter and receiver at a detection distance of at least 3m to KCS										
Safety outputs	Relay output × 2 (5A AC220V, DC28V)										
Power supply voltage	AC 85V ~ AC 220V										
Current consumption (no load)	transmitter	08 to 48 beams : 51mA max.									
	Receiver	08 to 48 beams : 49mA max.									
Outputs	Relay Output Load current 5A max., Residual voltage AC250V max.										
Output operation mode	Safety outputs : ON when receiving light										
Response time	20ms max.										
Indicators	Power(red LED), Check (red LED), Ready (green LED×2), Caution (red LED×2)										
Test function	Self-test(After power ON, and during operation)										
Degree of protection	IP54										
Ambient light intensity	Sunlight : receiving-surface light intensity of 10,000 lx max., Incandescent lamp : receiving-surface light intensity of 3,000 lx max.										
Ambient temperature	During operation : -10 to 55℃(without freezing), During storage : -20 to 70℃										
Ambient humidity	During operation : 30 to 80%RH(no condensation), During storage 35 to 95%RH										
dielectric strength voltage	AC 1000V 50/60Hz for 60sec										
Vibration resistance	10 ~ 55Hz, Multiple amplitude of 1.5mm, 2h in X, Y and Z directions										
Material	Casing : Aluminum, Optical cover : PMMA resin (acrylic), Cable : Oil resistant PVC										
Connection method	Connector method (transmitter 4-pin, receiver 5-pin, controller 4-pin) ※ Cable extension length page.26										
Accessories	user's manual, top and bottom mounting brackets, cable connectors										

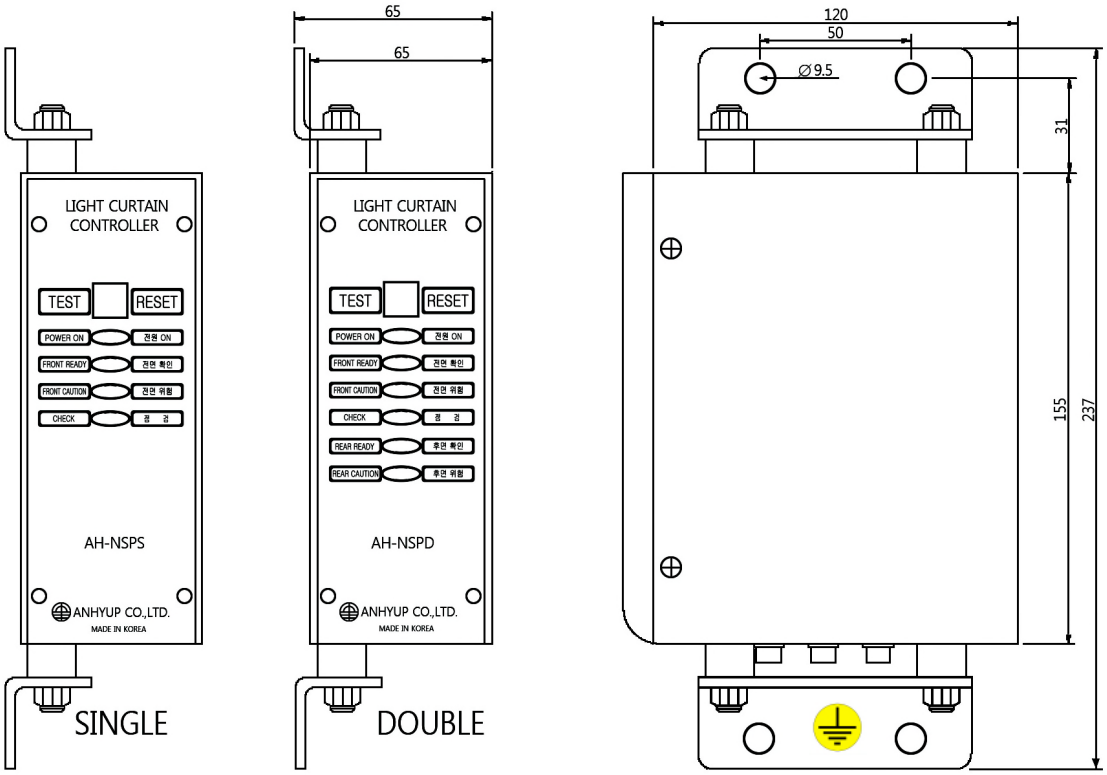
※ In the model names in this table, the □□ contain the 2 digits indicating the number of beams.

※ This specification can be changed without prior notification for improvement of quality.

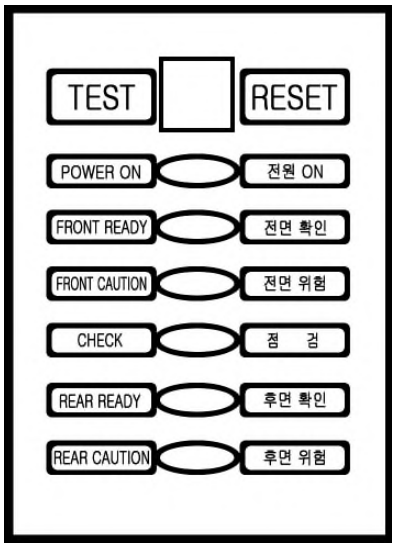
※ There is a AH-NSPD□□ type for the front and rear side installation for the amplifier separation type.

8. name / function / size

8.1. controller

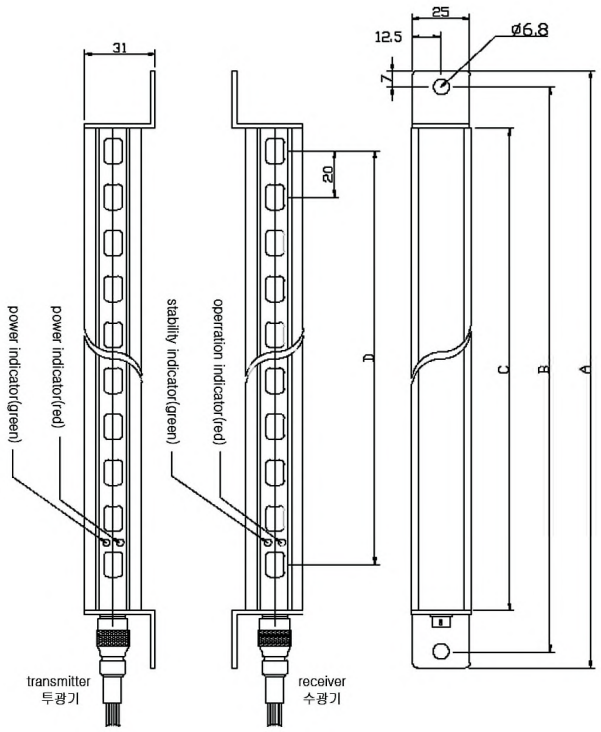


8.1.1. front side of the controller



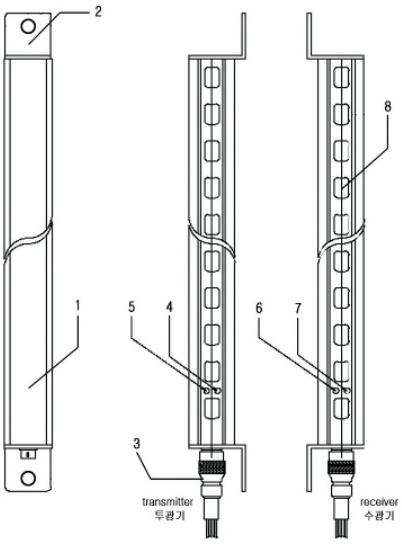
name	function
RESET	Press the button once when you restart it or cancel release the check mode.
power supply ON	Lights on when the power supply is input.
check front side	The front sensor light on when the light passes through the optical axis. The output is ON.
front side danger	Lights on when the front sensor blocked. The lights flicker when it is check mode.
Check	If the relay is deposition condition or not inserted, it becomes check mode. The danger/check LED's light flicker on and off, it maintains the output OFF condition. After solving the problem, press the RESET switch once then, it starts again.
The reverse side check	the back of the sensor's lights on when the light passes through the optical axis The output is ON
The reverse side dange	Lights on when the sensor of the back side is blocked. The lights flicker when it is check mode. The output is OFF.

8.2. sensor unit



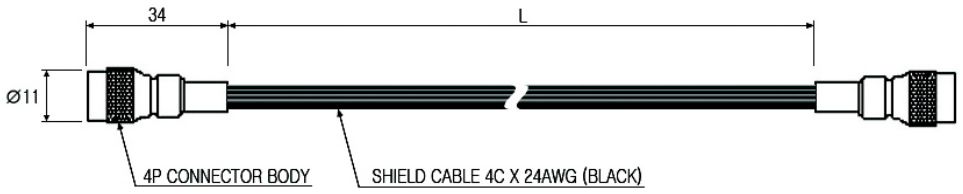
MODEL	A	B	C	D
AH-NSP08	220	206	170	140
AH-NSP12	300	286	250	220
AH-NSP16	380	366	330	300
AH-NSP20	460	446	410	380
AH-NSP24	540	526	490	460
AH-NSP28	620	606	570	540
AH-NSP32	700	686	650	620
AH-NSP36	780	766	730	700
AH-NSP40	860	846	810	780
AH-NSP44	940	926	890	860
AH-NSP48	1020	1006	970	940

8.2.1. sensor unit

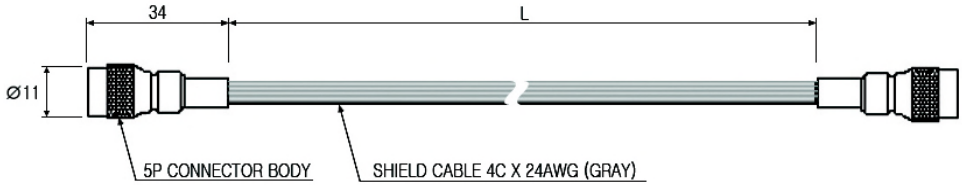


Names	Functions
1. Head unit case	Transmitter, Receiver body case
2. Body B/K	It fixes equipment to the support device.
3. Connecter	It connects equipment with outside control line and power
4. Power indicator	Turns ON while the power is ON.
5. Operation indication LED	Turns ON while the power is ON.
6. Operation indication LED	It shows the operation of the projector
7. Stabilization LED	It indicates all states of the optical axes of the projector
8. Lens	8∅ single convex lens

9.3 cable



Transmitter cable



Receiver cable

Transmitter cable connector			Receiver cable connector		
Formality	Specifications	L	Formality	Specifications	L
NSP-TSC7	4P connector-shield cable 4c (black)	7m	NSP-RSC3	4P connector-shield cable 4c (gray)	3m
NSP-TSC5		5m	NSP-RSC10		10m

standard component	
Single type	Double type
NSP-TSC7 1EA, NSP-RSC3 1EA	NSP-TSC7 1EA, NSP-TSC5 1EA, NSP-RSC3 1EA, NSP-RSC10 1EA

10. Warranty / Responsibility limit

When you order our Press Protection device, if there's nothing significant to report in estimate sheet, contract, specification, etc, we apply the warranty, the responsibility limit, the condition of the fitness use. Check below the information and order and use our products please.

10.1. Warranty

10.1.1 the term of guarantee

The term of guarantee of our product is one year after purchasing it or delivering it to the appointed place

10.1.2 The range of guarantee

During the term of guarantee, if there are some errors of this product due to the responsibility of our company, we offer fungible goods or repair the broken product

free at the place where you purchase it. . However, if the cause of failure correspond to the following cases, we exclude from the scope of this warranty

10.1.2.1 In case of the condition, environment, handle and use apart from the contents written in the catalog or instruction manual

10.1.2.2 In case of the cause except our product

10.1.2.3 In case of you remodel or repair it at the other place except our company

10.1.2.4 In case of if you use it except the way of the original use

10.1.2.5 In case of could not be determined with our science, technology level. This warranty means unit product and we exclude the damage due to the failure of this product from the guarantee

10.2. Responsibility limit

10.2.1 We will not have any responsibility in case of the conditions caused by this product such as special damages, consequential damages or passive damage

10.2.2 We will not have any responsibility in case of other person carry out the program except the person from our company or the result due to this.

11. The point about the safety

11.1. about the installation environment

11.1.1 Do not use when you are in flammable, explosive gas environment.

11.1.2 To ensure the safety of the operation and maintenance, install the device away from high voltage apparatus or power machine.

11.1.3 Do not block the vent when you install the main body.

11.2. About the power supply and wiring

11.2.1 Do not short circuit

11.2.2 Do not short circuit the load of the open collector output

11.2.3 PPlease separate the high-tension wire and the power line from the wiring of our product. If you do same wire line or wire same duct, it may cause incorrect operation or get damaged.

11.2.5 Please use the specified power supply.

11.2.6 Please avoid high voltage power supply.

11.3. Etc..

11.3.1 Do not disassemble, repair and remodel this product.

11.3.2 When you discard it, please handle it by industrial waste.

11.3.3 Do not fall the product

11.3.4 Please connect exclusive use equipment. If you use non genuine product, it may cause incorrect operation or error.

11.3.5 In case of functional abnormality occurs during use, stop your work immediately, and turn off power supply. Please request counsel to our Sales Department or branch office.

⚠ Warning

※ Before install and use this product, please be fully aware of an instruction manual surely and install and use it.

1) Stick by the rated voltage and don't change it randomly.

2) Never change the circuit of the protection device and structure.

3) Do not let the materials such as oil or foreign substance go into this device.

4) After changing the mold, adjust the height of the protection device and install. At this time the protection device must go down to the bottom than the top surface of the mold

5) Protect the wiring of the sensor and the wiring of the control in order not to get damaged by tools.

6) Please use a proper form fuse(2A).

※ Check list before using the PRESS

1) Check the sensor of the light projector and the optical receiver is setting correctly.

2) Check whether the protection device operate or not many times when you shade the light the sensor by hand.

3) Check whether the PRESS stops or not immediately if you shade the light the sensor while the Press operating,

4) Check the state of the relay contact. If there are some errors, exchange it.

12. Regular check-up repair record sheet

Date	the content of the error	the content of the measure	Worker		Administration confirmation
			company	Name	

※ In case of functional abnormality occurs during use, stop your work immediately, and contact our Sales Department.

-MEMO-

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Manual revision record

The manual revision sign marks at the last part of the catalog number that recorded under the cover.

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↑
revision mark

revision mark	Revision date and time	revision date and time
A	2013. 01 .22	first edition