



The table below describes the files that were selected to be included as part of this package.

Supplements, such as Figures and Illustrations, will appear as X number of Figures, X number of Illustrations, etc., rather than naming each one.

E158873-A6215-DescriptionUL
Figure-26-Total

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UL TEST REPORT AND PROCEDURE

Standard:	UL 62368-1, 3rd Ed, 2021-10-22 (Audio/video, information and communication technology equipment Part 1: Safety requirements) CAN/CSA C22.2 No. 62368-1:19, 3rd Ed, 2021-10-22 (Audio/video, information and communication technology equipment Part 1: Safety requirements)
Certification Type:	Listing
CCN:	AZOT, AZOT7 (Audio/video, Information and Communication Technology Equipment)
Complementary CCN:	N/A
Product:	NETWORK CAMERA
Model:	PNM-C32083RQZ, PNM-C16083RQZ
Rating:	PoE (55 Vdc), 0.75 A
Applicant Name and Address:	HANWHA VISION CO LTD 6, PANGYO-RO 319BEON-GIL, BUNDANG-GU SEONGNAM-SI GYEONGGI-DO 13488 KOREA

This is to certify that representative samples of the products covered by this Test Report have been investigated in accordance with the above referenced Standards. The products have been found to comply with the requirements covering the category and the products are judged to be eligible for Follow-Up Service under the indicated Test Procedure. The manufacturer is authorized to use the UL Mark on such products which comply with this Test Report and any other applicable requirements of UL LLC ('UL') in accordance with the Follow-Up Service Agreement. Only those products which properly bear the UL Mark are considered as being covered by UL's Follow-Up Service under the indicated Test Procedure.

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UL authorizes the applicant to reproduce the latest pages of the referenced Test Report consisting of the first page of the Specific Technical Criteria through to the end of the Conditions of Acceptability.

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Prepared By: Lawrence Lee / Project Handler Reviewed By: SungIl Kim / Reviewer

Supporting Documentation

The following documents located at the beginning of this Procedure supplement the requirements of this Test Report:

A. Authorization - The Authorization page may include additional Factory Identification Code markings.

B. Generic Inspection Instructions -

- i. Part AC details important information which may be applicable to products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of this Test Report.
- ii. Part AE details any requirements which may be applicable to all products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of each Test Report.
- iii. Part AF details the requirements for the UL Certification Mark which is not controlled by the technical standard used to investigate these products. Products are permitted to bear only the Certification Mark(s) corresponding to the countries for which it is certified, as indicated in each Test Report.

Product Description

NETWORK CAMERA is designed for outdoor or indoor use, wall or ceiling use with mounting brackets.

It is a commercial equipment supplied from UL listed PoE (Power over Ethernet) input and installed by service personnel.

Model Differences

PNM-C32083RQZ is basic model.

PNM-C16083RQZ is identical to basic model except model designation and sensor/lens module specification.

Test Item Particulars

Product group	end product
Classification of use by	Instructed person
Supply Connection	not mains connected: ES1
Supply tolerance	None
Supply connection – type	PoE (Power over Ethernet)
Considered current rating of protective device	N/A
Equipment mobility	wall/ceiling-mounted
Over voltage category (OVC)	OVC I
Class of equipment	Class III
Special installation location	Outdoor location
Pollution degree (PD)	PD 2
Manufacturer's specified Tma (°C)	55 Outdoor: minimum -40
IP protection class	--
Power systems	not AC mains
Altitude during operation (m)	2000 m or less
Altitude of test laboratory (m)	2000 m or less
Mass of equipment (kg)	4.29

Technical Considerations

- ☐ The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of : 55 °C

- ☐ The product is intended for use on the following power systems : No direct connection
- ☐ Considered current rating of protective device as part of the building installation (A) : N/A
- ☐ Mains supply tolerance (%) or absolute mains supply : No direct connection
- ☐ The Risk Group of a lamp or lamp system (including LEDs) is : Exempt
- ☐ The following are available from the Applicant upon request : Installation (Safety) Instructions / Manual
- ☐ The outdoor equipment/enclosure was evaluated for use in an ambient range of : -40 °C to 55 °C

Additional Information

4791312271

- Maximum Normal Load: Continuous operation (Operate the camera through networked equipment with IR LED on and Fan on.)

Additional Standards

The product fulfills the requirements of: IEC 62471:2006

Markings and Instructions

Clause Title	Marking or Instruction Details
Equipment identification marking – Manufacturer identification	Listee's or Recognized Company's name, Trade Name, File Number
Equipment identification marking – model identification	Model Number
Equipment rating marking – ratings	Input Ratings (voltage, current, frequency)
Outdoor enclosure type	"Rainproof", IP66
Hard Copy	A. IMPORTANT or ATTENTION or similar wording B. Please check 'Manuals' from our website, before connecting to the supply. C. Company website URL (https://www.~~) or QR code.
(Website) Manual - 1	This product is intended to be supplied by a UL Listed Power Supply Unit marked "Class 2" or "LPS" or "PS2" and rated from PoE (55 Vdc), 0.75 A.
(Website) Manual - 2	The wired LAN hub providing power over the Ethernet (PoE) in accordance with IEEE 802.3bt shall be a UL Listed device with the output evaluated as a Limited Power Source as defined in UL 60950-1 or PS2 as defined in UL 62368-1.

Special Instructions to UL Representative

N/A

BD1.0	TABLE: Production-Line Testing Requirements					
BD1.1	Electric Strength Test Special Constructions – Refer to Generic Inspection Instructions, Part AC for further information.					
Model	Component	Removable parts	Test probe location	Test V rms	Test V dc	Test Time, s
N/A	N/A	N/A	N/A	N/A	N/A	N/A
BD1.2	Earthing Continuity Test Exemptions – This test is not required for the following models:					
	All model					
BD1.3	Electric Strength Test Exemptions – This test is not required for the following models:					
	All model					
BD1.4	Electric Strength Test Component Exemptions – The following solid-state components may be disconnected from the remainder of the circuitry during the performance of this test.					
	All model					

BE1.0	Sample and Test Specifics for Follow-Up Tests at UL				
Model	Component	Material	Test	Sample (s)	Test Specifics
N/A	N/A	N/A	N/A	N/A	N/A

4.1.2	TABLE: List of critical components					Pass
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Product Category CCN(s)	Mark(s) of conformity	Supplement ID
Enclosure –Case top (Plastic)	LOTTE CHEMICAL CORPORATION	HN-1068(+)(f1)	Min. 1.5 mm thickness, rated Min. V-0, 130 deg. C	QMFZ2	UL (E115797)	
Enclosure –Case top dome cover (Plastic)	MITSUBISHI ENGINEERING- PLASTICS CORP	S-2000V+(f1)	Min. 1.5 mm thickness, rated Min. V-2, 115 deg. C	QMFZ2	UL (E41179)	
Enclosure –IR LED cover (Plastic)	LOTTE CHEMICAL CORPORATION	QC-1220UR (f1)	Min. 1.5 mm thickness, rated Min. V-2, 125 deg. C	QMFZ2	UL (E115797)	
Enclosure –Between case top dome cover and IR LED cover (Metal)	Interchangeable	Interchangeable	Aluminum, Min. 2.5 mm thickness.	-	-	
Enclosure -Top (Metal)	Interchangeable	Interchangeable	Aluminum, Min. 2.5 mm thickness.	-	-	
Enclosure -Bottom (Metal)	Interchangeable	Interchangeable	Aluminum, Min. 2.5 mm thickness.	-	-	
Internal Metal	Interchangeable	Interchangeable	Aluminum, Min. 2.0 mm thickness.	-	-	
Internal Plastic	LOTTE CHEMICAL CORPORATION	HN-1068(+)(f1)	Min. 1.5 mm thickness, rated Min. V-0, 130 deg. C	QMFZ2	UL (E115797)	
Opto-coupler (PC1, PC2)	LITE-ON TECHNOLOGY CORP	LTV-817	Isolation Voltage: 5300. Max. Operation Temperature: 100 deg. C	FPQU2	UL (E113898)	
Opto-coupler (PC1, PC2) - Alternate	RENESAS ELECTRONICS CORPORATION	PS2561DL1-1	Isolation Voltage: 5000. Max. Operation Temperature: 100 deg. C	FPQU2	UL (E72422)	

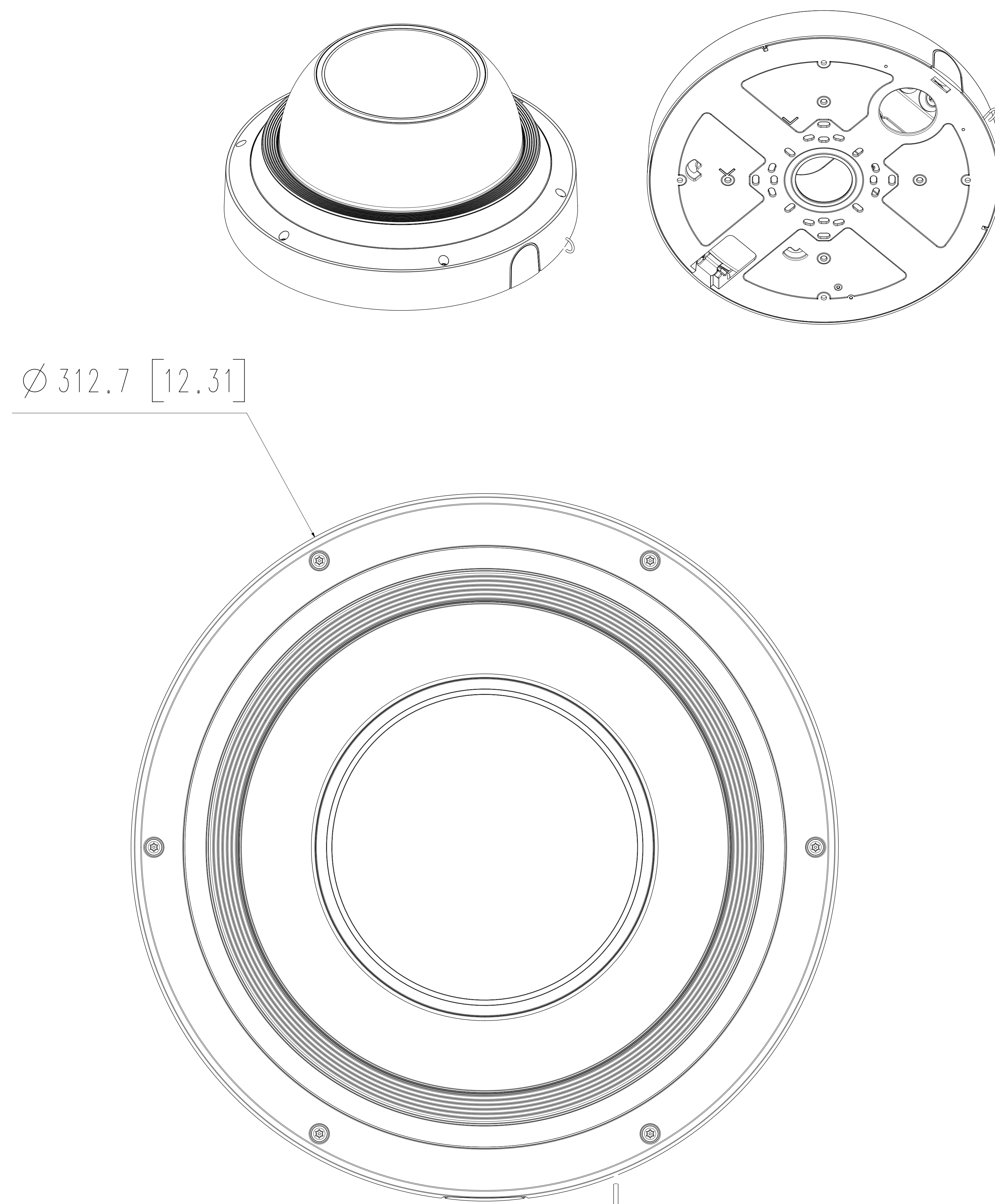
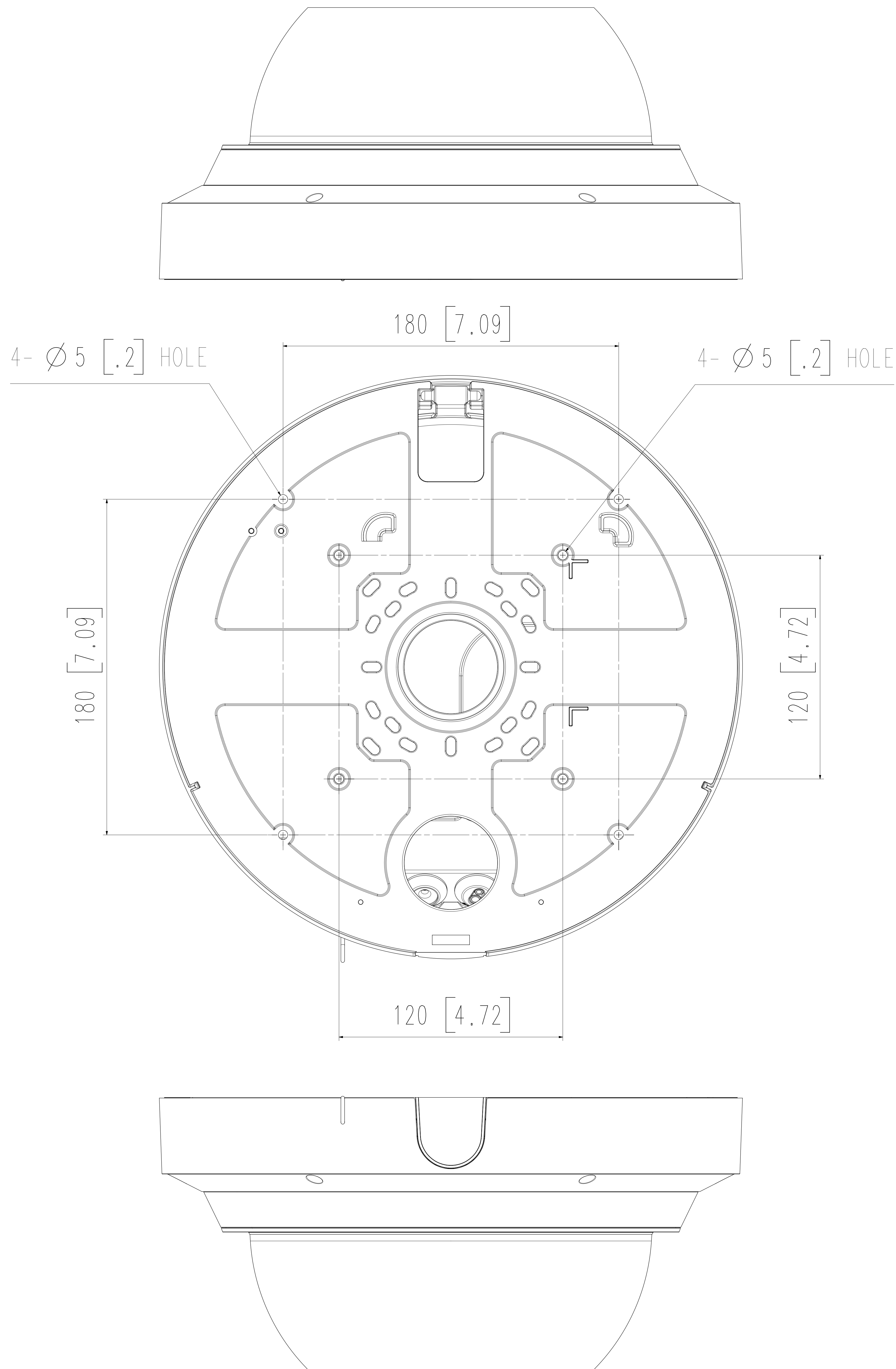
Transformer (T1)	DONG IN SYSTEM CO TLD	UPDH110-T1	130 deg. C, See enclosure for more detail.	-	-	
Transformer (T1) - Alternate	DONG HEUNG ELECTRONICS CO TLD	UPDH110-T1	130 deg. C, See enclosure for more detail.	-	-	
Transformer (L32)	DONG IN SYSTEM CO TLD	UPDH110-L32	130 deg. C, See enclosure for more detail.	-	-	
Transformer (L32) - Alternate	DONG HEUNG ELECTRONICS CO TLD	UPDH110-L32	130 deg. C, See enclosure for more detail.	-	-	
Transformer (CT1)	DONG IN SYSTEM CO TLD	SNP-6320RH-CT1	130 deg. C, See enclosure for more detail.	-	-	
Transformer (CT1) - Alternate	DONG HEUNG ELECTRONICS CO TLD	SNP-6320RH-CT1	130 deg. C, See enclosure for more detail.	-	-	
Line filter (NL1)	TNC CO.,LTD	CV36045USA2	450 uH, 105 deg. C, See enclosure for more detail.	-	-	
Line filter (LF1) - Alternate	TNC CO.,LTD	CH935230S (LLF- 104)	23.0 mH, 120 deg. C, See enclosure for more detail.	-	-	
Heat sink (HS1, HS2)	Interchangeable	Interchangeable	Aluminium, See enclosure for more detail.	-	-	
Lens module (PNM- C32083RQZ)	DongGuan YuTong Optical Technology CO.,Ltd	YTW30033A01DB. IR-PIRIS-JZ- 8MP+H231+IR0507	4.2-5 Vdc	-	-	
Lens module (PNM- C16083RQZ)	DongGuan YuTong Optical Technology CO.,Ltd	LENS SET- YT0W8A03-PIRIS- 5M+H43+IR0902	4.2-5 Vdc	-	-	
Rechargeable battery (BAT41)	SEIKO INSTRUMENTS	ML414H	Lithium, Rechargeable, Max Charging Voltage,	BBCV2	UL (MH15628)	

	INC MICRO-ENERGY DIV		3.4 V dc, Max Charging current: 300 mA			
Lithium Battery Protection Circuit (BAT41)	Interchangeable	Interchangeable	Diode (D41, 80 V, 500 mA) and Resistor (R48, 3.3 Kohm) in series	-	-	
DC Fan (2ea)	SUNONWEALTH ELECTRIC MACHINE INDUSTRY CO LTD	EF5010BX-C05U-GE9	12 Vdc, 160 mA, (N/15000+K/2400 = 0.4201 < 1, N= 6000, K= 48.2747)	GPWV2	UL (E77551)	
Gasket for PoE cover	Namyang Vina	C-VMQ-40-GR	Gasket Test was conducted under E158873-A6034	-	-	
Gasket	Namyang Vina	O-VMQ-30-BK	Gasket Test was conducted under E158873-A6034	-	-	
Thermal pad	KOMOTECH	KGP-1(a)	Min.2.0mm thickness, rated V-0, 150 deg. C	QMFZ2	UL (E245303)	
Thermal pad - Alternate	ATEKS	ATP-20	Min.2.0mm thickness, rated V-0, 150 deg. C	QMFZ2	UL (E513170)	
PWB	EXPRESS ELECTRONICS LTD	14MV0	Min. V-0, 130 deg. C	ZPMV2	UL (E157925)	
PWB - Alternate	Interchangeable	Interchangeable	Min. V-0, 130 deg. c	ZPMV2	UL	
Outdoor Label	Interchangeable	Interchangeable	Suitable for use on each type of surface to which applied, rated for maximum and minimum surface temperature specified, or Min. 55 deg. C to Max -40 deg. C if not specified.	PGDQ2 or PGJI2	UL	
LED Total (16 ea)	Cybright IR LED Technology Co.,Ltd	XB-IR3838EU-I	VF = Max. 2.3 V, IF= Max. 1 A	-	-	

Enclosures

Type	Supplement Id	Description
Photographs	03-01	External View - 1
Photographs	03-02	External View - 2
Photographs	03-04	Internal View - 1
Photographs	03-05	Internal View - 2
Photographs	03-06	IR LED Board - 1
Photographs	03-07	IR LED Board - 2
Photographs	03-08	Main Board - 1
Photographs	03-09	Main Board - 2
Photographs	03-10	Power Board - 1
Photographs	03-11	Power Board - 2
Photographs	03-12	SUB Board
Photographs	03-13	SD Board
Photographs	03-14	DC Fan
Photographs	03-15	Lens Module
Diagrams	04-01	Diagrams
Diagrams	04-02	Heatsink (HS1,HS2)
Manuals	06-01	Manual
Miscellaneous	07-01	Transformer (T1) Specification - DONG IN SYSTEM CO.,LTD.
Miscellaneous	07-02	Transformer (T1) Specification - DONG HEUNG ELECTRONICS CO., LTD
Miscellaneous	07-03	Transformer (L32) Specification - DONG IN SYSTEM CO.,LTD.
Miscellaneous	07-04	Transformer (L32) Specification - DONG HEUNG ELECTRONICS CO., LTD
Miscellaneous	07-05	Transformer (CT1) Specification - DONG IN SYSTEM CO.,LTD.
Miscellaneous	07-06	Transformer (CT1) Specification - DONG HEUNG ELECTRONICS CO., LTD
Miscellaneous	07-07	Line Filter (LF1) Specification
Miscellaneous	07-08	Line Filter (NF1) Specification
Miscellaneous	07-09	Label

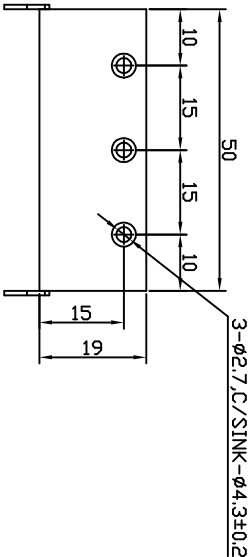
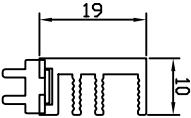
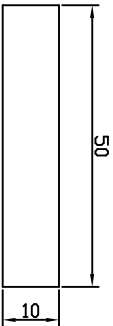
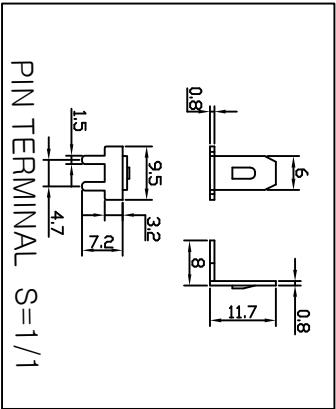
The following Page(s) are related to Diagrams-01. The next supplement, if applicable, will be identified with a new Supplement Page Heading.



3	MODEL 2	
2	PNM-C16083RQZ	'24.05.27
1	PNM-C32083RQZ	'24.05.27
No.	MODEL NAME	DATE
Unit:mm[inch]	SCALE:1/1	Hanwha Vision

The following Page(s) are related to Diagrams-02. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

NO	CHANGE ADDITION	REVISED	APPROVED	DATE



NOTE

- 1.재 질 : KS D 6759 A6063S-T5
- 2.일반 공차 : KS B 0236 1-14급에 준함.
- 3.표면 처리 : CLEAR
- 4.Burr, 균열, 찌그러짐등 제품으로서 유해한 요소가 없을 것.
- 5.기타 의문사항은 설계자와 협의 할 것.

1						
NO	DESCRIPTION(DWG, NAME/VENDOR)	PART NO (DWG, NO/PART NO)	QTY	MATERIAL	REMARK	
APP	GS PARK	UNIT	mm			
CHK	TK OH	SCALE	N/S			
DSN		TOLERANCE	±0.2			
DWG	HS WOO	DATE	2024.01.08			
			REF. NO	A3	ERP Code No.	Sheet No. 1
			DWG. NO	MSP-2023-X001		Revision No. 1.0
TITLE						
HEAT SINK						



MSP

Manufacturing Solution Provide Co., Ltd.

The following Page(s) are related to Manuals-01. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean the contaminated area on the product surface with a soft, dry cloth or a damp cloth.
(Do not use a detergent or cosmetic products that contain alcohol, solvents or surfactants or oil constituents as they may deform or cause damage to the product.)
7. Do not block any ventilation openings, Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/ accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/ apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lighting storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. This product is intended to be supplied by a UL Listed Power Supply Unit marked "Class 2" or "LPS" or "PS2" and rated from PoE (55 Vdc), 0.75 A.
16. This product is intended to be supplied by isolation power.
17. If you use excessive force when installing the product, the camera may be damaged and malfunction.
If you forcibly install the product using non-compliant tools, the product may be damaged.
18. Do not install the product in a place where chemical substances or oil mist exists or may be generated. As edible oils such as soybean oil may damage or warp the product, do not install the product in the kitchen or near the kitchen table.
This may cause damage to the product.
19. When installing the product, be careful not to allow the surface of the product to be stained with chemical substance.
Some chemical solvents such as cleaner or adhesives may cause serious damage to the product's surface.
20. If you install/disassemble the product in a manner that has not been recommended, the production functions/ performance may not be guaranteed.
Install the product by referring to "Installation & connection" in the user manual.
21. Installing or using the product in water can cause serious damage to the product.



22. Screen distortion could occur outside of the subject distance.
23. While encoding, a real time fps fluctuation of ± 1 fps could occur.
24. Although a rapid change in temperature could cause frost inside the dome, there will be no problem with the video.
25. This device has been verified using STP cable. The use of appropriate GND grounding and STP cable is recommended to effectively protect your product and property from transient voltage, thunderstroke, communication interruption.
26. The operating temperature of the product is -40°C to $+55^{\circ}\text{C}$ (-40°F ~ $+131^{\circ}\text{F}$).

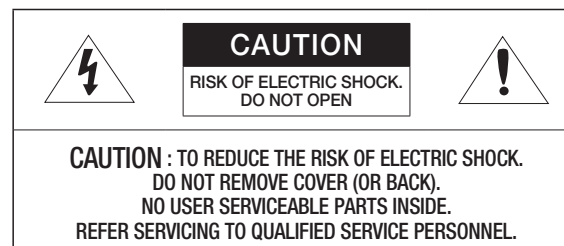
WARNING

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE. DO NOT INSERT ANY METALLIC OBJECT THROUGH THE VENTILATION GRILLS OR OTHER OPENINGS ON THE EQUIPMENT.

Apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.

To prevent injury, this apparatus must be securely attached to the Wall/ceiling in accordance with the installation instructions.

CAUTION



EXPLANATION OF GRAPHICAL SYMBOLS



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

Class I construction

An apparatus with CLASS I construction shall be connected to a MAINS socket outlet with a protective earthing connection.

Battery

Batteries(battery pack or batteries installed) shall not be exposed to excessive heat such as sunshine, fire or the like.

The battery cannot be replaced.

Prohibition of battery abuse

- Do not install and use the wrong type of battery.
- Do not leave the battery in a mechanically crush or cut it because it can explode.
- Do not leave the battery in a high temperature environment.
- Do not leave the battery in a low-pressure environment.

Disconnection Device

Disconnect the main plug from the apparatus, if it's defected. And please call a repair man in your location.

When used outside of the U.S., it may be used HAR code with fittings of an approved agency is employed.

CAUTION

RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.
DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

ATTENTION

IL Y A RISQUE D'EXPLOSION SI LA BATTERIE EST REMPLACÉE PAR UNE BATTERIE DE TYPE INCORRECT.
METTRE AU REBUT LES BATTERIES USAGÉES CONFORMÉMENT AUX INSTRUCTIONS.

These servicing instructions are for use by qualified service personnel only.
To reduce the risk of electric shock do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

Please use the input power with just one camera and other devices must not be connected.

When a new product box is opened (or during the initial use of the product), moisture might build up on the glass of the camera. The built-up moisture disappears naturally within a few hours after powered on.

Do not arbitrarily loosen or tighten the gore valve.

The ITE is to be connected only to PoE networks without routing to the outside plant.

The wired LAN hub providing power over the Ethernet (PoE) in accordance with IEEE 802.3bt shall be a UL Listed device with the output evaluated as a Limited Power Source as defined in UL60950-1 or PS2 as defined in UL62368-1.

Unit is intended for installation in a Network Environment 0 as defined in IEC TR 62102. As such, associated Ethernet wiring shall be limited to inside the building.

Please read the following recommended safety precautions carefully.

- Do not place this apparatus on an uneven surface.
- Do not install on a surface where it is exposed to direct sunlight, near heating equipment or heavy cold area.
- Do not place this apparatus near conductive material.
- Do not attempt to service this apparatus yourself.
- Do not place a glass of water on the product.
- Do not install near any magnetic sources.
- Do not block any ventilation openings.
- Do not place heavy items on the product.
- Please wear protective gloves when installing/removing the camera.
The high temperature of the product surface may cause a burn.
- Do not adjust or move the lens directly with your hands. Doing so could damage the lens or degrade its performance.
- The life expectancy of driving the lens motor is 200 rotations.
- To move the location of your camera, privacy masking needs to be reset.
- When connecting the HPoE injector to the external Internet, use either one of network cable port (LAN) or fiber optic port (SFP) but not both.

User's Manual is a guidance book for how to use the products.

The meaning of the symbols are shown below.

- Reference : In case of providing information for helping of product's usages
- Notice : If there's any possibility to occur any damages for the goods and human caused by not following the instruction

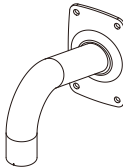
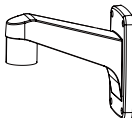
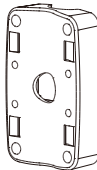
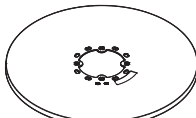
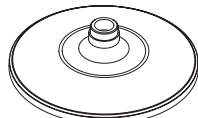
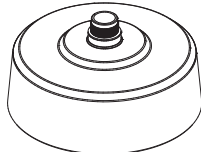
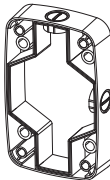
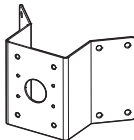
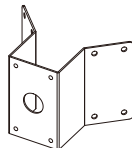
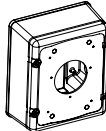
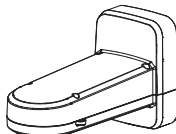
※ Please read this manual for the safety before using of goods and keep it in the safe place.

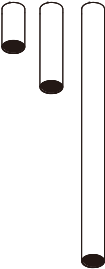
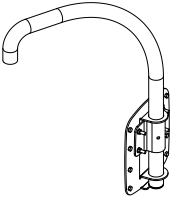
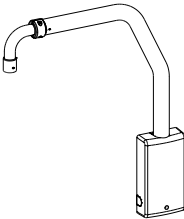
We do not guarantee the quality of third-party products (e.g. lenses, accessories) that you separately purchase.

In particular installation environments, there might be interference in radio communications. When interference of electromagnetic waves occurs between the product and radio communication device, it is recommended to keep a certain distance between the two or change the direction of the receiving antenna.

OPTIONAL ACCESSORIES FOR INSTALLATION

You can purchase appropriate optional accessories available.

Wall Mount and Pole Mount	Mounting Hole Cover	Hanging Mount	Wall Mount Base	Corner Mount	Installation Box
 SBP-300WMW (Wall Mount) * SBP-300PMW2 required for pole installation  SBP-300WMW1 (Wall Mount) * SBP-300PMW2 required for pole installation	 SBP-300PMW2 (Pole Mount)	 SBP-315C  SBP-315HMW  SBP-317HMWP	 SBP-300BW1	 SBP-156KMW  SBP-300KMW1	 SBP-300NBW
 SBP-250WMW  SBP-400WMW					

Ceiling Mount		Parapet Mount
Assembly	Individual Parts	
 SBP-300CMTS (Ball Head)  SBP-300CMTW  SBP-300CMW1 SBP-900CMW  SBP-150CMI SBP-300CMI	 SBP-180CMB  SBP-180CMS (Ball Head)  SBP-140CMB  SBP-150CMP SBP-300CMP SBP-900CMP  SBP-C15P  SBP-C15H	 SBP-300LMW  SBP-156LMW1

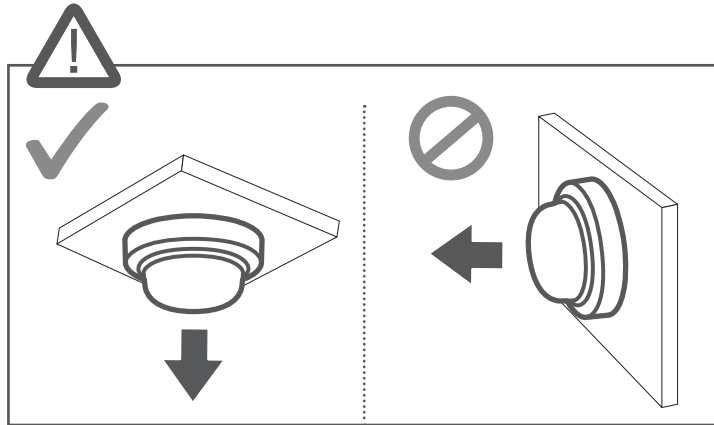
INSTALLATION

-  The camera jack connected to the external cable is not waterproof. You are recommended to install this product below the edge of eaves to prevent the cable from being externally exposed.

Precautions before installation

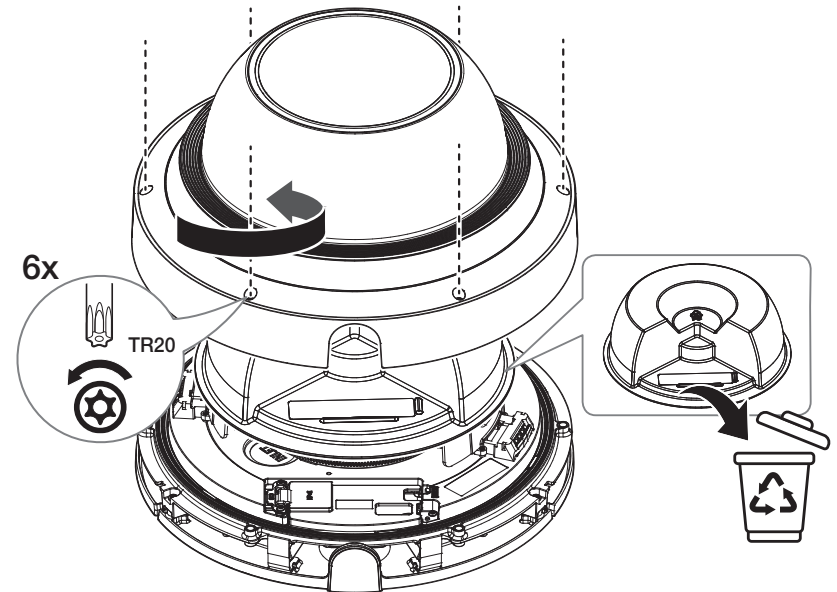
Ensure you read out the following instructions before installing the camera:

- It must be installed on the area (ceiling or wall) that can withstand 5 times the weight of the camera including the installation bracket.
- Stuck-in or peeled-off cables can cause damage to the product or a fire.
- For safety purposes, keep anyone else away from the installation site. And put aside personal belongings from the site, just in case.
- If the product is installed with excessive force, it may cause damage to the camera due to malfunction. Forcing assembly using non-compliant tools may damage the product.

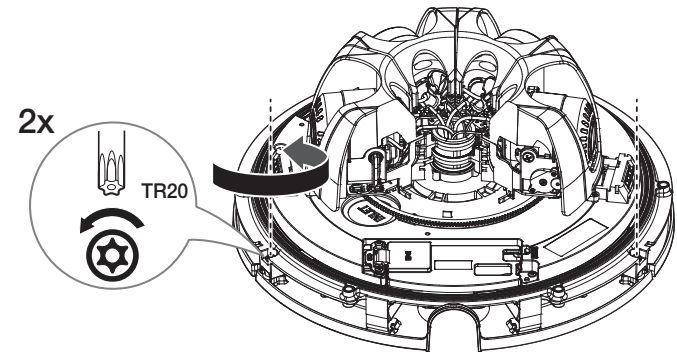


Disassembling

1. Remove the dome cover by turning the dome cover's fastening screws counterclockwise.
 - Note that it is not necessary to loosen the screws completely.
 - Be sure to remove the lens protection case before installation.

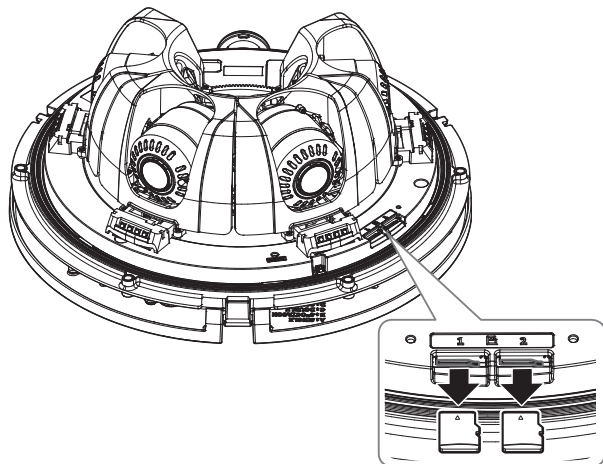


2. Loosen the fastening screw on the camera body.
 - You don't have to completely remove the screws.



Removing a Micro SD card

Gently press down on the exposed end of the Micro SD card as shown in the diagram to eject the Micro SD card from the slot.

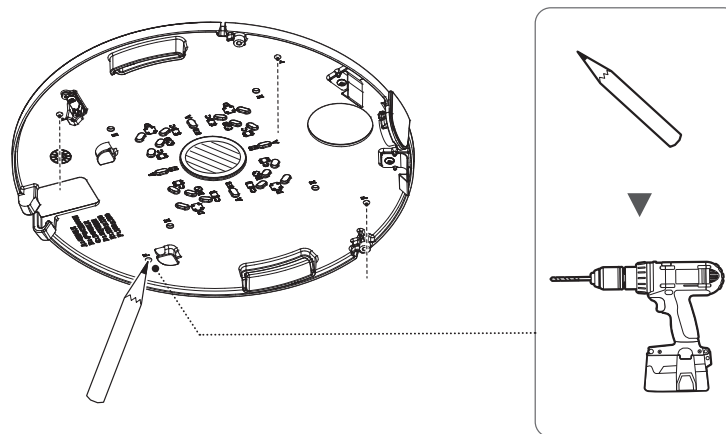


- Before removing the Micro SD card, in <Setup (⚙️)>><Event>><Storage>, set the device to <Off> and press the [Apply] button and turn the camera off.
- If you turn off the camera or remove the Micro SD card that contains data from the product, the data may be lost or damaged.

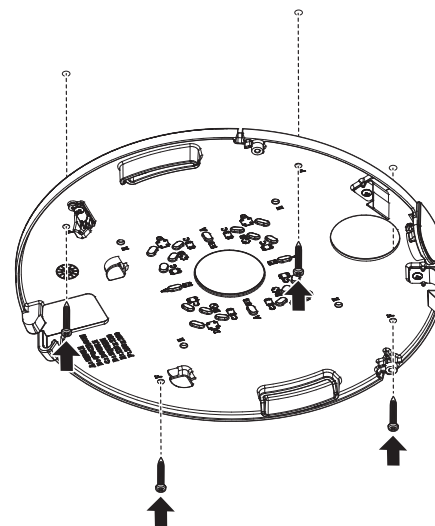
Installation (mount plate)

[Directly installing on ceiling]

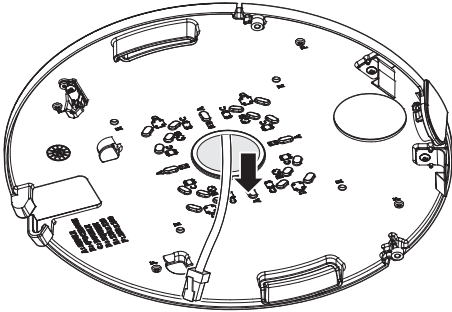
- 1-1. Place the mount plate on the desired location considering the direction to be monitored, mark the locations for the screw holes and cable holes, and then drill the holes.



- 1-2. Fix the mount plate using appropriate screws.



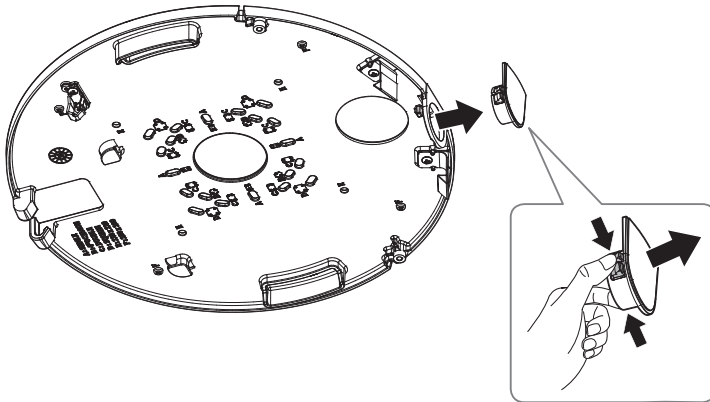
- 1-3. Take out the necessary cables from among the network and alarm cables through the hole of the mount plate.



[Installing using pipe]

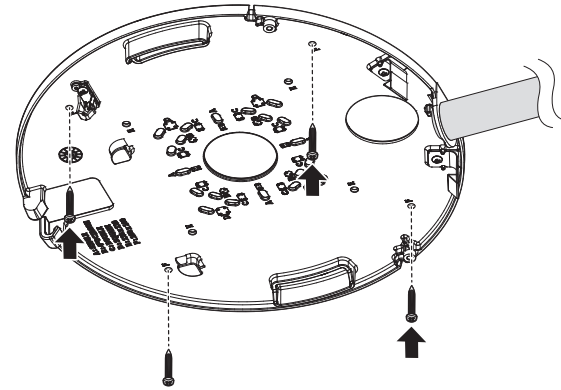
- 2-1. Place the mount plate on the desired location considering the direction to be monitored, mark the locations for the screw holes, and then drill the holes.

- 2-2. Separate the pipe cover of the mount plate by pressing its sides.

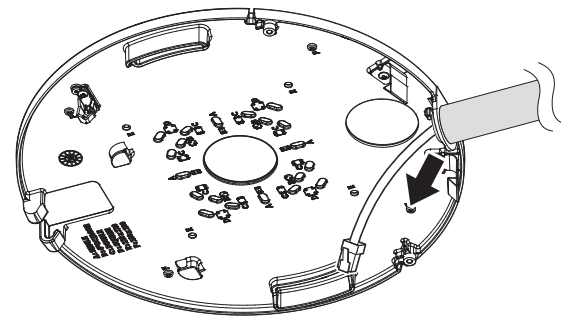


- 2-3. Place the pipe on the mount plate.

- 2-4. Fix the mount plate using appropriate screws.



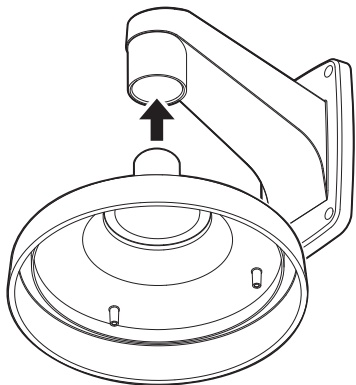
- 2-5. Take out the necessary cables from among the network and alarm cables through the pipe.



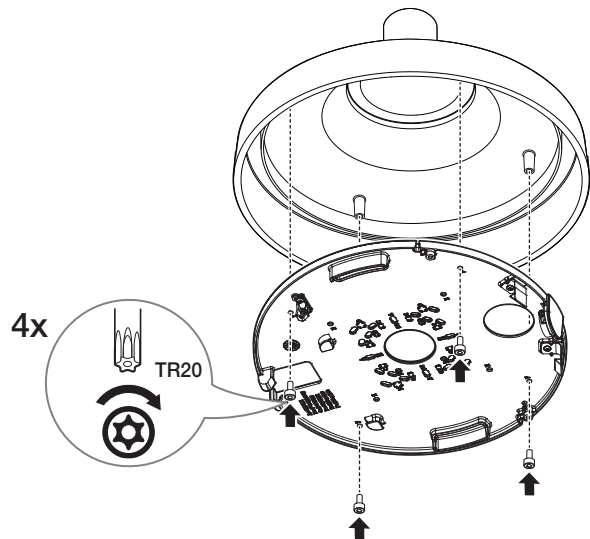
[Attaching to the unbundled adapter]

Choose and purchase a necessary one of the following options (unbundled) that is suitable to the installation site or for your convenience.

- 3-1. Install the hanging mount adapter to the wall mount.
- Wall mounts and hanging mount adapters are sold separately.

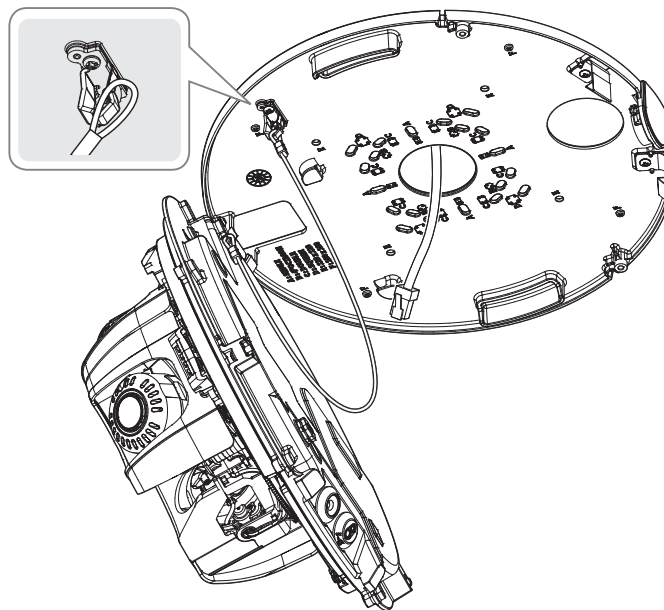


- 3-2. Install the mount plate to the hanging mount using the appropriate screws.

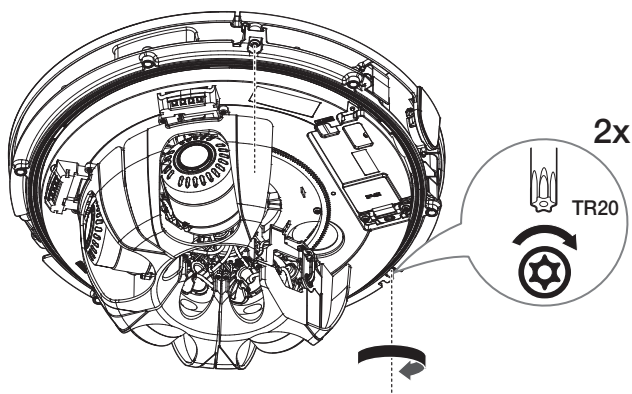


Installation (camera body and dome cover)

1. Connect the safety wire to the mount plate.



15. Fix the camera body by tightening the fastening screws on the camera body.

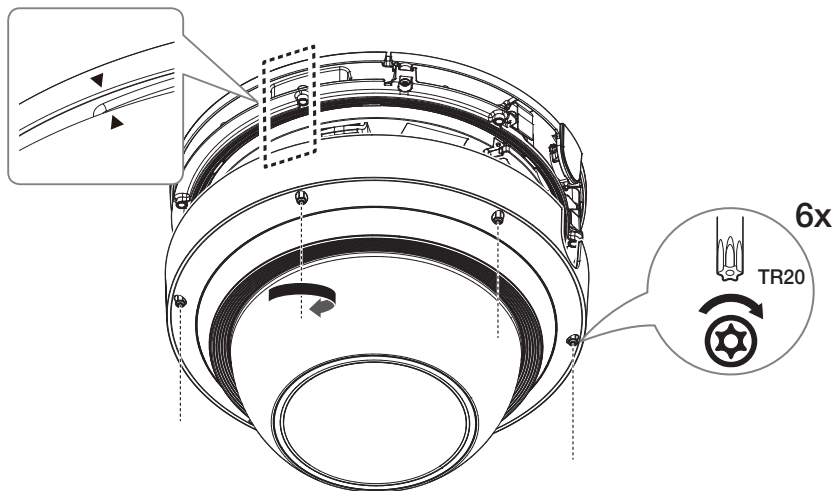


16. Adjust the lens to the desired direction by referring to "Adjusting the monitoring direction for the camera".

- If you tilt the lens, you may need to adjust the lens as this may block the screen.

17. Assemble the dome cover.

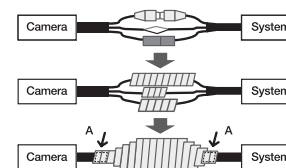
- Assemble the camera and the dome cover by aligning the direction guide on them.
- To ensure there are no issues with waterproofing, tighten the fastening bolts tightly.



Outdoor installation

When you install it outside of the building, please waterproof it with waterproof butyl rubber tape (can be purchased in stores) so that water does not leak from the gap of the cable connected to the outside.

1. Connect network and alarm cables, etc.
2. Wrap the black cable jacket (Area A) and the cable connection area with waterproof (butyl rubber) tape so that more than half of the butyl rubber tape is overlapped.



- If the cable jacket is not waterproofed properly, then it can directly cause leakage. Make sure to protect the cable with a dense layer of taping.
- Waterproof butyl tape is made of butyl rubber that can be stretched to twice its normal length.

The following Page(s) are related to Miscellaneous-01. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

APPROVAL SHEET

DATE

2024. 03. 19

PAGE

OF

CUSTOMER MSP

PART NAME SWITCHING TRANS

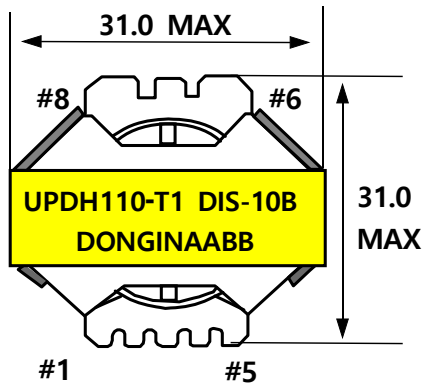
MODEL NO.

PART NO. UPDH110-T1

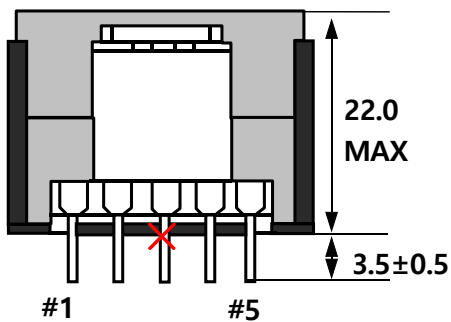
DESCRIPTION

RM10"V"8PIN

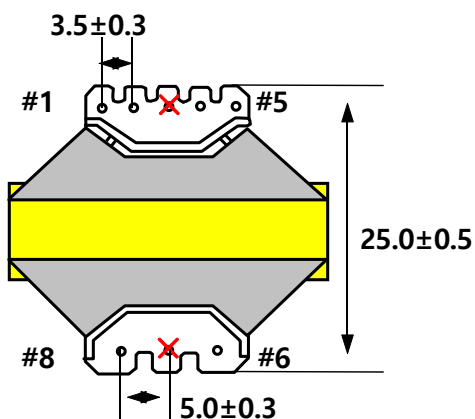
1. DIMENSIONS (UNIT:mm)



TOP VIEW



FRONT VIEW

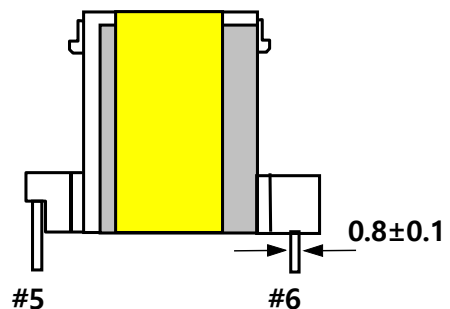


BOTTOM VIEW

* MARKING *

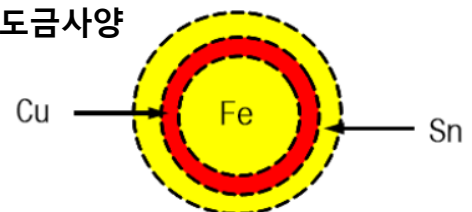
UPDH110-T1 DIS-10B ← PART NO
DONGINAABB ← LOT NO
WEEK
YEAR
MAKER

MARKING	
PART NO.	UPDH110-T1
(LOT NO)	AA : YEAR BB : WEEK
MAKER	DONG IN SYSTEM
DIS-10B	INSULATION SYSTEM



SIDE VIEW

PIN 도금사양



DRAWN BY

CHECK BY

APPR. BY

REVISION

DATE



Safety

DIS

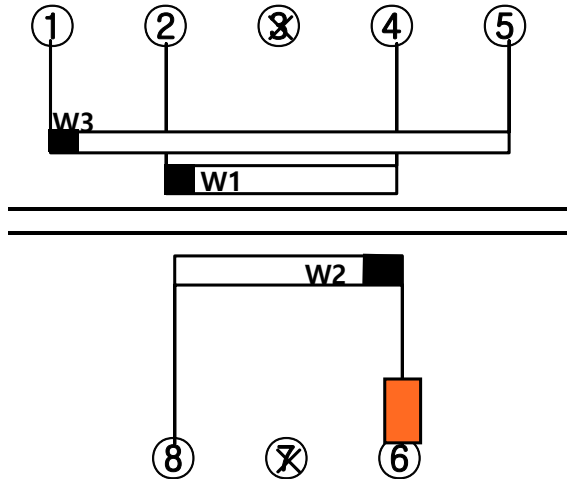
DONG - IN SYSTEM CO.,LTD.

APPROVAL SHEET

DATE 2024. 03. 19
PAGE OF

CUSTOMER	MSP		
PART NAME	SWITCHING TRANS	MODEL NO.	
PART NO.	UPDH110-T1	DESCRIPTION	RM10"V"8PIN

2. CONNECTION (BOTTOM VIEW)



REMOVED PIN	#3,7
CUT PIN	#
N.C PIN	#
P/I TAPE,TUBE	#6
FLUX BAND	#
DOT MARK	■ START OF WINDING

3. WINDING SPECIFICATION

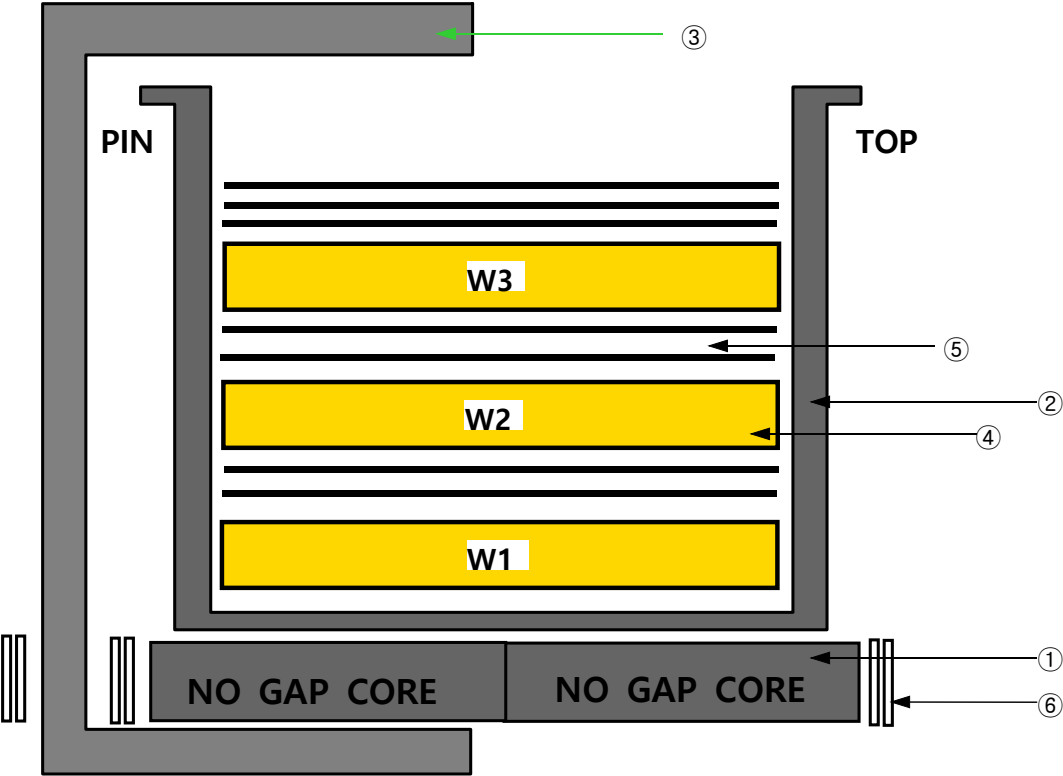
NO	TERMINAL		WIRE	Ts	WINDING METHOD	INSULATION		BARRIER	
	S	F				MATERIAL(t/mm)	Ts	PIN	TOP
W1	2	4	USTC0.10ØX30P	12	SOLENOID	POLYESTER TAPE 0.025 / 10.5	2	-	-
W2	6	8	USTC0.10ØX50PX2P	9	SOLENOID	POLYESTER TAPE 0.025 / 10.5	2	-	-
W2	1	5	USTC0.10ØX30P	12	SOLENOID	POLYESTER TAPE 0.025 / 10.5 (WHITE)	3	-	-
CORE FIXING TAPE				POLYESTER TAPE 0.025 / 7.0(YELLOW)			2		
CORE FIXING TAPE				POLYESTER TAPE 0.025 / 10.0(YELLOW)			2		

W2 #6 고온테이프 감싸줄것

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APPROVAL SHEET			DATE	2024. 03. 19
			PAGE	OF
CUSTOMER	MSP			
PART NAME	SWITCHING TRANS	MODEL NO.		
PART NO.	UPDH110-T1	DESCRIPTION	RM10"V"8PIN	

8. CONSTRUCTION



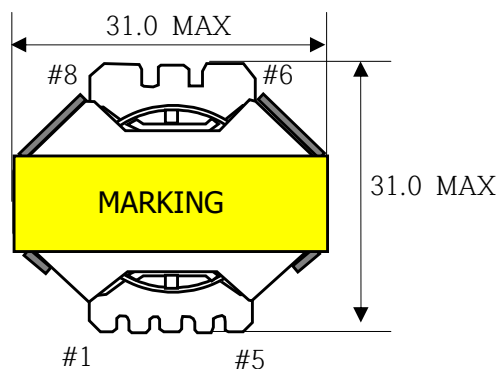
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APPROVAL SHEET				DATE	2024. 03. 19
				PAGE	OF
CUSTOMER		MSP			
PART NAME		SWITCHING TRANS		MODEL NO.	
PART NO.		UPDH110-T1		DESCRIPTION	RM10"V"8PIN
9. MATERIAL LIST					
NO	ITEM	MATERIAL	MANUFACTURER	FILE NO.	
1	CORE	FERRITE CORE RM10 LP-4 OR HX-40 OR PC-40	RING TONG FERRITE CO., LTD. NAN TONG FERRITE CO., LTD. JI SHUN MAGNETICS CO., LTD		
2	BOBBIN	PHENOL 94V-0 RM10 "V" 8PIN	SUMITOMO BAKELITE CO LTD CHANG CHUN PLASTICS CO LTD	E41429 E59481	
3	CAP	P.E.T	E I DUPONT DE NEMOURS & CO INC	E41938	
4	WIRE	POLYURETHANE ENAMELED COPPER WIRE USTC 0.10ØX30P USTC 0.10ØX50P	YANTAI ROME ELECTRONIC CO LTD JIANGSU DARTONG M&E CO LTD SHANDONG SAINT ELECTRONIC CO LTD ZHEJIANG HONFBO TECHNOLOGY CO LTD	E166187 E237377 E194410 E221719	
5	INSULATION TAPE	POLYESTERS TAPE T = 0.025mm,T=0.050mm W =10.5mm W =10.5mm (WHITE)	DUCK SUNG HITECH CO LTD JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	E105147 E165111	
		POLYIMIDE TAPE	Meixin New Material Co Ltd JINGJIANG YAHUA PRESSURE SENSITIVE GLUE	E304309 E165111	
6	CORE FIXING TAPE	POLYESTERS TAPE T = 0.025mm W = 7.0mm (YELLOW) W = 10.0mm (YELLOW)	DUCK SUNG HITECH CO LTD JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	E105147 E165111	
7	PIN TERMINAL	SOLDER COATED COPPER	DAE-A LEAD CO.,LTD.		
8	VARNISH	DVB-2177(@) T4260(a)	NOROO PAINT & COATINGS CO LTD SHZHOU TAIHU ELECTRIC ADVANCED MATERIAL CO LTD	E93947 E228349	
9	ADHESIVE	SK-015B	SEKYE EPOXY RESIN CO., LTD.		
10	SOLDER	Sn99.3 / Cu0.7 or EQV.	ALPHA METALS CO.,LTD or EQV.		
11	MARKING	INK (BON MARQUE) or EQV.	ATL CO.,LTD or EQV.		
DRAWN BY	CHECK BY	APPR. BY	REVISION		DATE

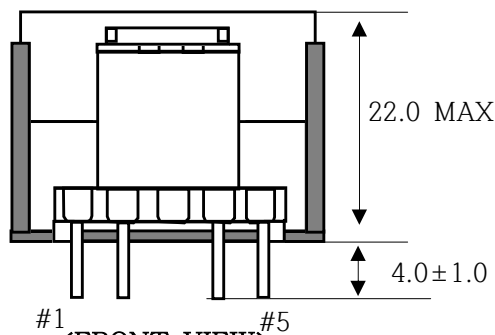
The following Page(s) are related to Miscellaneous-02. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

SPECIFICATION		SHEET NO.	2 OF 15
		D A T E	2024. 01. 08.
PART NAME	S/W TRANS	MODEL NAME	
PART NO.	UPDH110-T1 (CLASS B)	TYPE	RM 10

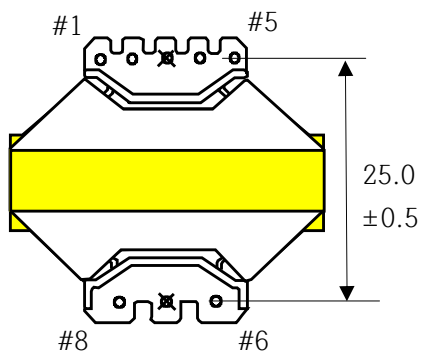
6. DIMENSION (UNIT : mm)



<TOP VIEW>



<FRONT VIEW>



<BOTTOM VIEW>

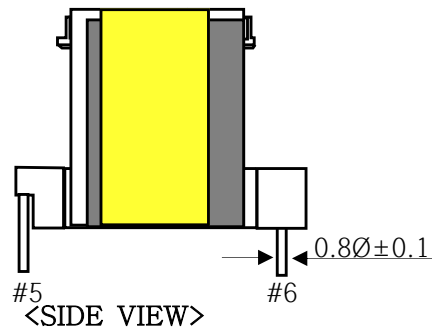
* MARKING

UPDH110-T1 → PART NO.
 DH 0000 DHB-001
 → CLASS B SYSTEM
 → PRODUCTION LINE
 → WEEK
 → YEAR
 → PRODUCTION MAKER

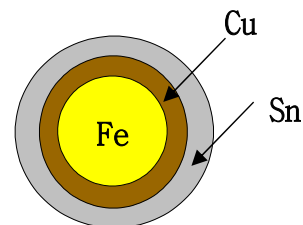
* YEAR
 2 : 2022
 3 : 2023
 4 : 2024
 5 : 2025

* WEEK
 01 : 1'st WEEK OF THE YEAR.
 02 : 2'nd WEEK OF THE YEAR.
 :
 54 : 54'th WEEK OF THE YEAR.

* PRODUCTION LINE
 1. A : CHUN AN
 2. B : BAZHOU
 3. Y : YANTAI
 4. C : WEIHAI



*. PIN PLATING SPEC



* PIN LENGTH : BEFORE SOLDERING

NO	REVISION	DATE	CHECK	DRAWN	CHECKED	APPROVED
1						
2						
3						
4						

SPECIFICATION		SHEET NO.	3 OF 15	
		DATE	2024. 01. 08.	
PART NAME	S/W TRANS	MODEL NAME		
PART NO.	UPDH110-T1 (CLASS B)	TYPE	RM 10	

7. SCHEMATIC DIAGRAM.

* START MARK.
 * P/I TAPE

①
②
③
④
⑤

⑧
⑦
⑥

WINDING	BOTTOM VIEW	C.C.W
REMOVE PIN	#3,7	
N.C PIN		
CUT PIN		
TUBE,P/I TAPE PIN	#6	
BOBBIN INSERT	TOP	

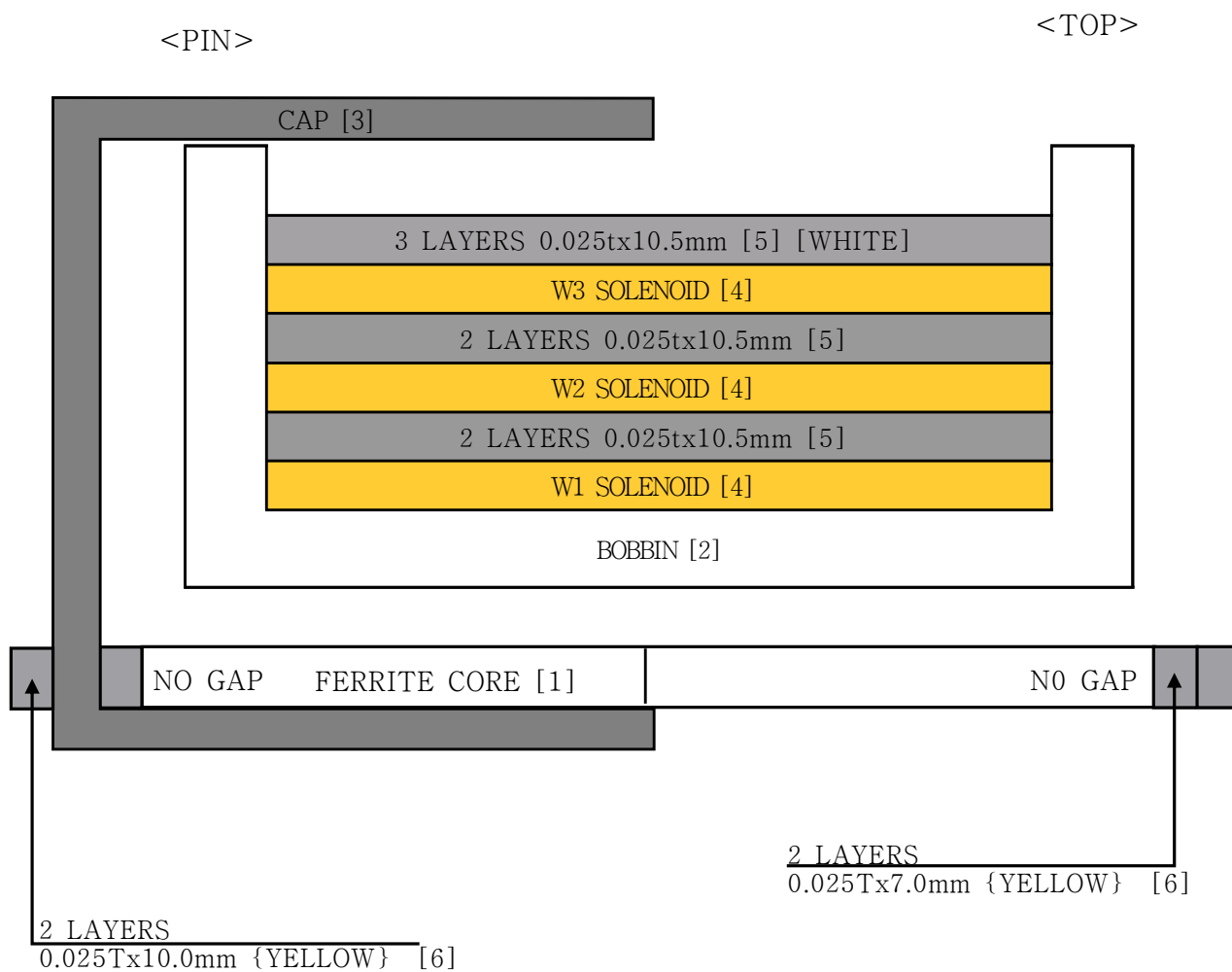
8. WINDING SPECIFICATION

NO	TERMINAL		WIRE	TURNS	WINDING METHOD	INSULATION			BARRIER	
	S	F				MATERIAL	T/W	TS	PIN	TOP
W1	2	4	USTC 0.10Øx30#	12	SOLENOID	POLYESTER TAPE	0.025/10.5	2	-	-
W2	6	8	USTC 0.10Øx50#x2#	9	SOLENOID	POLYESTER TAPE	0.025/10.5	2	-	-
W3	1	5	USTC 0.10Øx30#	12	SOLENOID	POLYESTER TAPE	0.025/10.5{W}	3	-	-
* CORE FIX TAPE						POLYESTER TAPE	0.025/7.0{Y}	2	-	-
* CORE FIX TAPE						POLYESTER TAPE	0.025/10.0{Y}	2	-	-

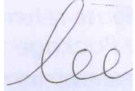
NO	REVISION	DATE	CHECK	DRAWN	CHECKED	APPROVED
1				2/2	lee	J
2						
3						
4						

SPECIFICATION		SHEET NO.	6 OF 15
		D A T E	2024. 01. 08.
PART NAME	S/W TRANS	MODEL NAME	
PART NO.	UPDH110-T1 (CLASS B)	TYPE	RM 10

12. INTERNAL CONSTRUCTION



- * WINDING 
- * P.S TAPE 
- * BARRIER TAPE 

NO	REVISION	DATE	CHECK	DRAWN	CHECKED	APPROVED
1						
2						
3						
4						

SPECIFICATION		SHEET NO.	7 OF 15
		D A T E	2024. 01. 08.
PART NAME	S/W TRANS	MODEL NAME	
PART NO.	UPDH110-T1 (CLASS B)	TYPE	RM 10

13. MATERIAL LIST

NO	I T E M	MATERIALS & DIMENSIONS		MANUFACTURER	REMARK
1	CORE	RM 10	YR28	TONGXIANG YAORUN ELECTRONIC CO LTD	
			DMR40	HENGDIAN GROUP DMEGC MAGNETICS CO LTD	
			KP4	HANGHAI KANGSHUN MAGNETISM COMPONENT CO LTD	
			GP4	NANTONG GUANYOUDA MAGNETIC CO LTD	
2	BOBBIN	RM 10mm 8P(5+3) PHENOL (94V-0)		SUMITOMO BAKELITE CO LTD CHANG CHUN PLASTICS CO LTD	E41429 E59481
3	CAP	P.E.T		E I DUPONT DE NEMOURS & CO INC	E41938
4	W I R E	USTC 0.10 ϕ x30# USTC 0.10 ϕ x50#		Yantai Rommix Electronic CO.,LTD JIANGSU DARTONG M & E CO LTD SHANDONG SAINT ELECTRIC CO LTD ZHEJIANG HONGBO TECHNOLOGY CO LTD	E166187 E237377 E194410 E221719
5	INSULATION TAPE	POLYESTER TAPE 0.025t x 10.5mm 0.025t x 10.5mm {WHITE}		DUCK SUNG HITECH CO LTD JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	E105147 E165111
		POLYIMIDE TAPE		Meixin New Material Co Ltd JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	E304309 E165111
6	CORE FIXING TAPE	POLYESTER TAPE 0.025t W=7.0mm {YELLOW} 0.025t W=10.0mm {YELLOW}		DUCK SUNG HITECH CO LTD JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	E105147 E165111
7	VARNISH	DVB-2177(@) T-4260(a)		NOROO PAINT & COATINGS CO LTD SUZHOU TAIHU ELECTRIC ADVANCED MATERIAL CO LTD	E93947 E228349
8	SOLDER	Sn98/Cu2.0		SAMWOO ALLOY METAL CO LTD TIANJIN SONGBENENVIRONMENTAL SCIENCE&TECH CO LTD	
9	INK & LASER	MS-6853 JP-K12,K33 JP-K72 TH-TYPE A JP-K72 W89		WUHAN LEADJET SCIENCE AND TECHNOLOGY DEVELOPMENT CO LTD HITACHI INDUSTRIAL EQUIPMENT CO LTD TIANJIN LIANJIIEZHUORUIPENGMAKEJI YOUXIANGONGSI	
10	FLUX	8EB34 L-8EB34		KAIFENG SONGQING ELECTRONIC MATERIALS CO LTD TIANJIN QINGHE SCIENCE-TECH DEVELOPMENT CO LTD	

NO	REVISION	DATE	CHECK	DRAWN	CHECKED	APPROVED
1				2/1/2	lee	J
2						
3						
4						

The following Page(s) are related to Miscellaneous-03. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

APPROVAL SHEET

DATE

2024. 03. 19

PAGE

OF

CUSTOMER MSP

PART NAME SWITCHING TRANS

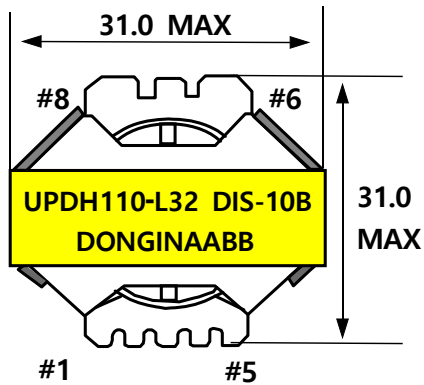
MODEL NO.

PART NO. UPDH110-L32

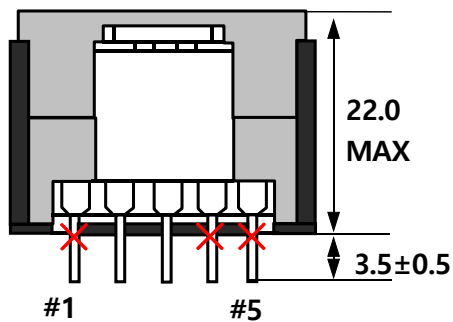
DESCRIPTION

RM10"V"8PIN

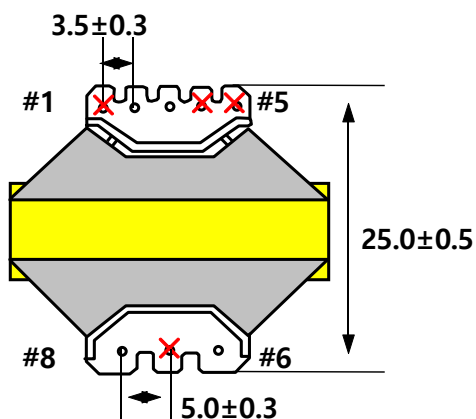
1. DIMENSIONS (UNIT:mm)



TOP VIEW



FRONT VIEW

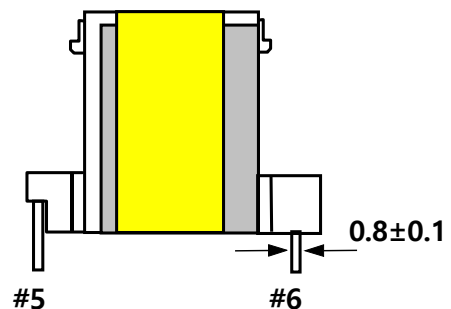


BOTTOM VIEW

* MARKING *

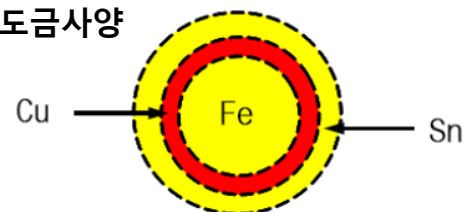
UPDH110-L32 DIS-10B ← PART NO
DONGINAABB ← LOT NO
WEEK
YEAR
MAKER

MARKING	
PART NO.	UPDH110-L32
(LOT NO)	AA : YEAR BB : WEEK
MAKER	DONG IN SYSTEM
DIS-10B	INSULATION SYSTEM



SIDE VIEW

PIN 도금사양



DRAWN BY

CHECK BY

APPR. BY

REVISION

DATE



Safety

DIS

DONG - IN SYSTEM CO.,LTD.

APPROVAL SHEET

DATE

2024. 03. 19

PAGE

OF

CUSTOMER

MSP

PART NAME

SWITCHING TRANS

MODEL NO.

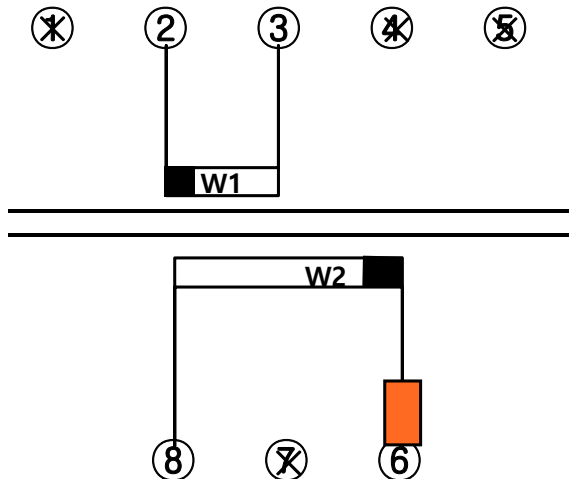
PART NO.

UPDH110-L32

DESCRIPTION

RM10"V"8PIN

2. CONNECTION (BOTTOM VIEW)



REMOVED PIN	#1,4,5,7
CUT PIN	#
N.C PIN	#
P/I TAPE,TUBE	#6
FLUX BAND	#
DOT MARK	■START OF WINDING
SK-015B CORE면 90%이상 도포	

3. WINDING SPECIFICATION

NO	TERMINAL		WIRE	Ts	WINDING METHOD	INSULATION		BARRIER	
	S	F				MATERIAL(t/mm)	Ts	PIN	TOP
W1	2	3	USTC0.10ØX30PX2P	9	SOLENOID	POLYESTER TAPE 0.025 / 10.5	3	2.0	2.0
W2	6	8	USTC0.10ØX160P	7	SOLENOID	POLYESTER TAPE 0.025 / 10.5 (WHITE)	3	-	-
CORE FIXING TAPE				POLYESTER TAPE 0.025 / 7.0(YELLOW)			2		
CORE FIXING TAPE				POLYESTER TAPE 0.025 / 10.0(YELLOW)			2		

W2 #6 고온테이프 감싸줄것

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REVISION

DATE



Safety

DIS

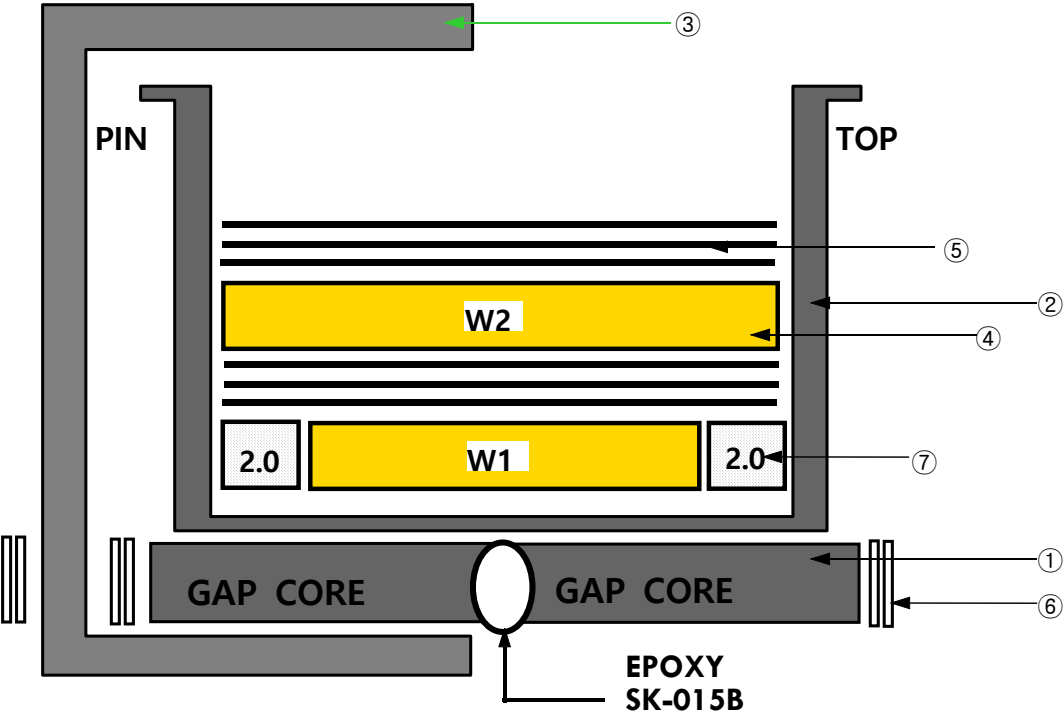
DONG - IN SYSTEM CO.,LTD.

OF

RM10"V"8PIN

APPROVAL SHEET			DATE	2024. 03. 19
			PAGE	OF
CUSTOMER	MSP			
PART NAME	SWITCHING TRANS	MODEL NO.		
PART NO.	UPDH110-L32	DESCRIPTION	RM10"V"8PIN	

8. CONSTRUCTION



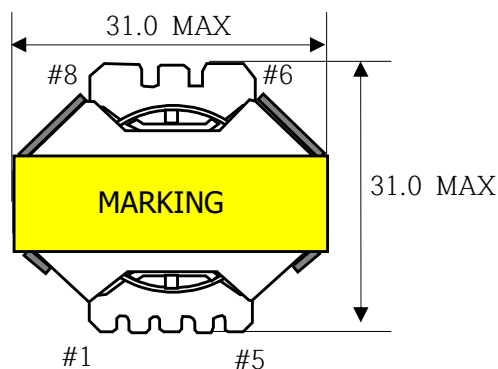
DRAWN BY	CHECK BY	APPR. BY	REVISION		DATE

APPROVAL SHEET				DATE	2024. 03. 19
				PAGE	OF
CUSTOMER		MSP			
PART NAME		SWITCHING TRANS		MODEL NO.	
PART NO.		UPDH110-L32		DESCRIPTION	RM10"V"8PIN
9. MATERIAL LIST					
NO	ITEM	MATERIAL	MANUFACTURER	FILE NO.	
1	CORE	FERRITE CORE RM10 LP-4 OR HX-40 OR PC-40	RING TONG FERRITE CO., LTD. NAN TONG FERRITE CO., LTD. JI SHUN MAGNETICS CO., LTD		
2	BOBBIN	PHENOL 94V-0 RM10 "V" 8PIN	SUMITOMO BAKELITE CO LTD CHANG CHUN PLASTICS CO LTD	E41429 E59481	
3	CAP	P.E.T	E I DUPONT DE NEMOURS & CO INC	E41938	
4	WIRE	POLYURETHANE ENAMELED COPPER WIRE USTC0.10ØX30P USTC0.10ØX160P	YANTAI ROME ELECTRONIC CO LTD JIANGSU DARTONG M&E CO LTD SHANDONG SAINT ELECTRONIC CO LTD ZHEJIANG HONFBO TECHNOLOGY CO LTD	E166187 E237377 E194410 E221719	
5	INSULATION TAPE	POLYESTERS TAPE T = 0.025mm,T=0.050mm W =10.5mm W =10.5mm (WHITE)	DUCK SUNG HITECH CO LTD JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	E105147 E165111	
		POLYIMIDE TAPE	Meixin New Material Co Ltd JINGJIANG YAHUA PRESSURE SENSITIVE GLUE	E304309 E165111	
6	CORE FIXING TAPE	POLYESTERS TAPE T = 0.025mm W = 7.0mm (YELLOW) W = 10.0mm (YELLOW)	DUCK SUNG HITECH CO LTD JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	E105147 E165111	
7	BARRIER TAPE	P.N W W=2.0mm			
8	PIN TERMINAL	SOLDER COATED COPPER	DAE-A LEAD CO.,LTD.		
9	VARNISH	DVB-2177(@) T4260(a)	NOROO PAINT & COATINGS CO LTD SHZHOU TAIHU ELECTRIC ADVANCED MATERIAL CO LTD	E93947 E228349	
10	ADHESIVE	SK-015B	SEKYE EPOXY RESIN CO., LTD.		
11	SOLDER	Sn99.3 / Cu0.7 or EQV.	ALPHA METALS CO.,LTD or EQV.		
12	MARKING	INK (BON MARQUE) or EQV.	ATL CO.,LTD or EQV.		
DRAWN BY	CHECK BY	APPR. BY	REVISION		DATE
					

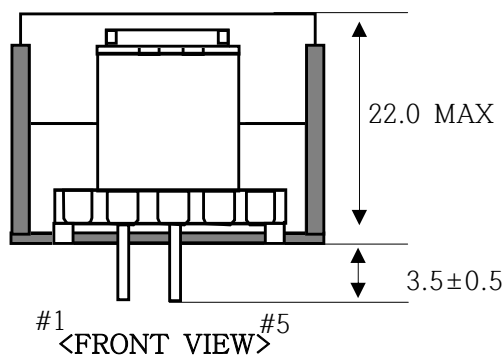
The following Page(s) are related to Miscellaneous-04. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

SPECIFICATION		SHEET NO.	2 OF 16
		D A T E	2024. 01. 18.
PART NAME	PFC TRANS	MODEL NAME	
PART NO.	UPDH110-L32 (CLASS B)	TYPE	RM 10

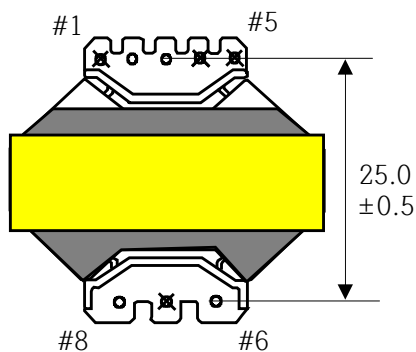
6. DIMENSION (UNIT : mm)



<TOP VIEW>



<FRONT VIEW>



<BOTTOM VIEW>

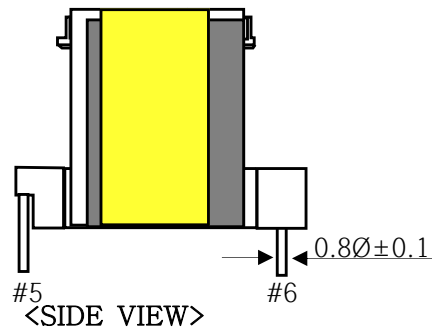
* MARKING

UPDH110-L32 → PART NO.
 DH 0000 DHB-001
 → CLASS B SYSTEM
 → PRODUCTION LINE
 → WEEK
 → YEAR
 → PRODUCTION MAKER

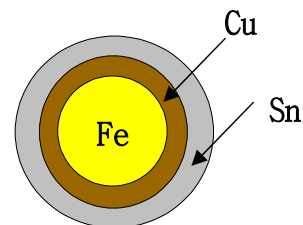
※ YEAR
 2 : 2022
 3 : 2023
 4 : 2024
 5 : 2025

※ WEEK
 01 : 1'st WEEK OF THE YEAR.
 02 : 2'nd WEEK OF THE YEAR.
 :
 54 : 54'th WEEK OF THE YEAR.

※ PRODUCTION LINE
 1. A : CHUN AN
 2. B : BAZHOU
 3. Y : YANTAI
 4. C : WEIHAI



*. PIN PLATING SPEC



* PIN LENGTH : BEFORE SOLDERING

NO	REVISION	DATE	CHECK	DRAWN	CHECKED	APPROVED
1						
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SPECIFICATION		SHEET NO.	3 OF 16	
		DATE	2024. 01. 18.	
PART NAME	PFC TRANS	MODEL NAME		
PART NO.	UPDH110-L32 (CLASS B)	TYPE	RM 10	

7. SCHEMATIC DIAGRAM.

* [black square] START MARK.
* [orange square] P/I TAPE

WINDING	BOTTOM VIEW	C.C.W
REMOVE PIN	#1,4,5,7	
N.C PIN		
CUT PIN		
TUBE,P/I TAPE PIN	#6	
BOBBIN INSERT	TOP	

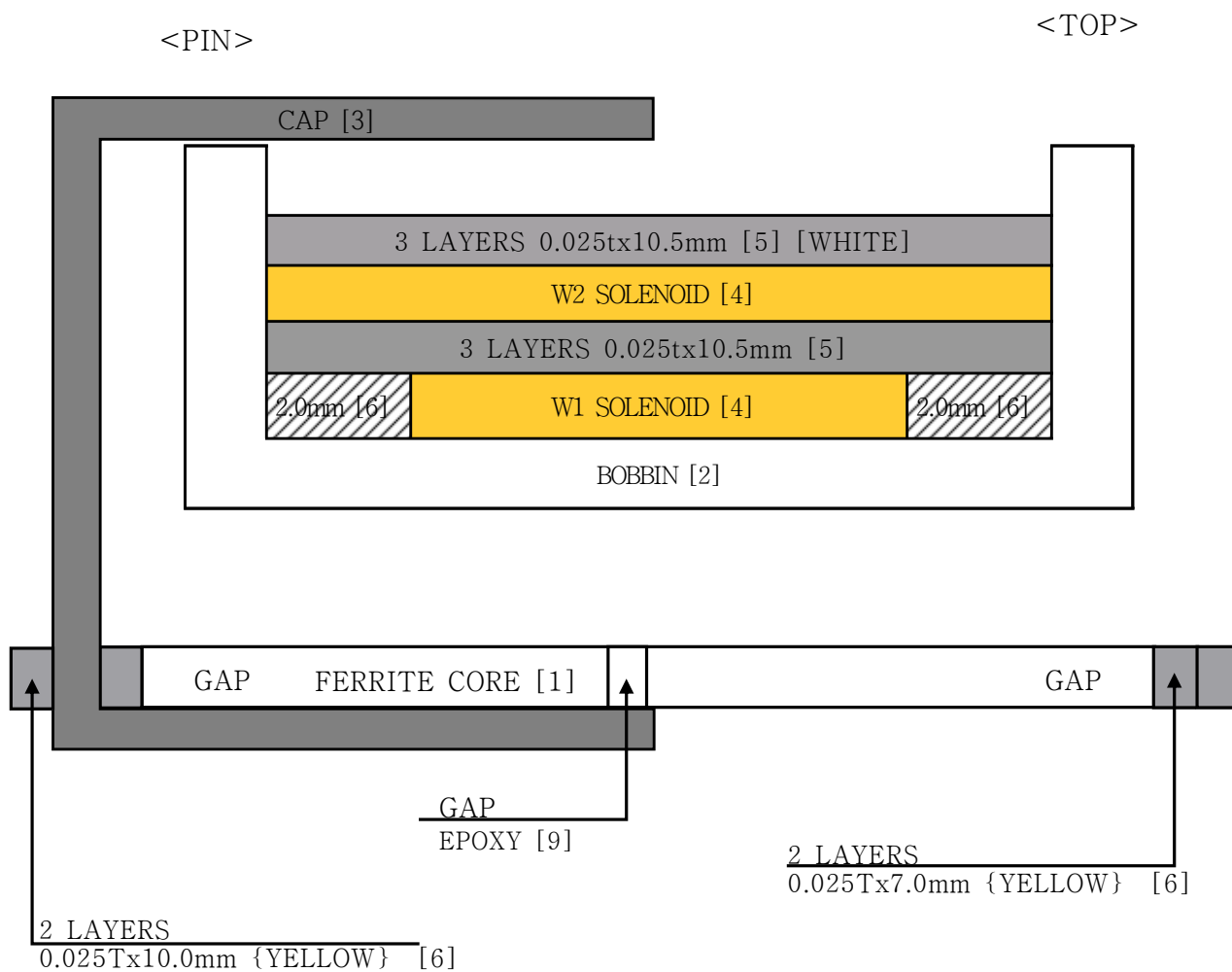
8. WINDING SPECIFICATION

NO	TERMINAL		WIRE	TURNS	WINDING METHOD	INSULATION			BARRIER	
	S	F				MATERIAL	T/W	TS	PIN	TOP
W1	2	3	2UEW 0.30 $\varnothing$ x2#	9	SOLENOID	POLYESTER TAPE	0.025/10.5	3	2.0	2.0
W2	6	8	USTC 0.10 $\varnothing$ x160#	7	SOLENOID	POLYESTER TAPE	0.025/10.5{W}	3	-	-
* CORE FIX TAPE						POLYESTER TAPE	0.025/7.0{Y}	2	-	-
* CORE FIX TAPE						POLYESTER TAPE	0.025/10.0{Y}	2	-	-

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SPECIFICATION		SHEET NO.	6 OF 16
		D A T E	2024. 01. 18.
PART NAME	PFC TRANS	MODEL NAME	
PART NO.	UPDH110-L32 (CLASS B)	TYPE	RM 10

12. INTERNAL CONSTRUCTION



- * WINDING 
- * P.S TAPE 
- * BARRIER TAPE 

NO	REVISION	DATE	CHECK	DRAWN	CHECKED	APPROVED
1				29/2		
2						
3						
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SPECIFICATION		SHEET NO.	7 OF 16
		D A T E	2024. 01. 18.
PART NAME	PFC TRANS	MODEL NAME	
PART NO.	UPDH110-L32 (CLASS B)	TYPE	RM 10

13. MATERIAL LIST

NO	I T E M	MATERIALS & DIMENSIONS		MANUFACTURER	REMARK
1	CORE	RM 10	YR28	TONGXIANG YAORUN ELECTRONIC CO LTD	
			DMR40	HENGDIAN GROUP DMEGC MAGNETICS CO LTD	
			KP4	HANGHAI KANGSHUN MAGNETISM COMPONENT CO LTD	
			GP4	NANTONG GUANYOUDA MAGNETIC CO LTD	
2	BOBBIN	RM 10mm 8P(5+3) PHENOL (94V-0)		SUMITOMO BAKELITE CO LTD CHANG CHUN PLASTICS CO LTD	E41429 E59481
3	CAP	P.E.T		CELANESE INTERNATIONAL CORP	E41938
4	W I R E	2UEW 0.30Ø USTC 0.10Øx160#		Yantai Rommix Electronic CO.,LTD JIANGSU DARTONG M & E CO LTD SHANDONG SAINT ELECTRIC CO LTD ZHEJIANG HONGBO TECHNOLOGY CO LTD	E166187 E237377 E194410 E221719
5	INSULATION TAPE	POLYESTER TAPE 0.025t x 10.5mm 0.025t x 10.5mm {WHITE}		DUCK SUNG HITECH CO LTD JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	E105147 E165111
		POLYIMIDE TAPE		Meixin New Material Co Ltd JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	E304309 E165111
6	CORE FIXING TAPE	POLYESTER TAPE 0.025t W=7.0mm {YELLOW} 0.025t W=10.0mm {YELLOW}		DUCK SUNG HITECH CO LTD JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	E105147 E165111
7	BARRIER TAPE	P.N.W TAPE W=2.0mm			
8	VARNISH	DVB-2177(@) T-4260(a)		NOROO PAINT & COATINGS CO LTD SUZHOU TAIHU ELECTRIC ADVANCED MATERIAL CO LTD	E93947 E228349
9	EPOXY	UNI-BOND #812 SK-015B H-907 SERIES SW-860		GREENSTAR CO LTD SE KYE CHEMICAL CO LTD QINGDAO THREE-DIMENSIONAL POLYMERS NEW MATARIAL CO LTD SUNGWOO CHEMICAL CO LTD	
10	SOLDER	Sn98/Cu2.0		SAMWOO ALLOY METAL CO LTD TIANJIN SONGBENENVIRONMENTAL SCIENCE&TECH CO LTD	
11	INK & LASER	MS-6853 JP-K12,K33 JP-K72 TH-TYPE A JP-K72 W89		WUHAN LEADJET SCIENCE AND TECHNOLOGY DEVELOPMENT CO LTD HITACHI INDUSTRIAL EQUIPMENT CO LTD TIANJIN LIANJIJIEZHUORUIPENGMAKEJI YOUXIANGONGSI	
12	FLUX	8EB34 L-8EB34		KAIFENG SONGQING ELECTRONIC MATERIALS CO LTD TIANJIN QINGHE SCIENCE-TECH DEVELOPMENT CO LTD	

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1				2/1/2	lee	J
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The following Page(s) are related to Miscellaneous-05. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

APPROVAL SHEET

DATE

2014. 11. 07

PAGE

OF

CUSTOMER

M S P

PART NAME

LINE FILTER

MODEL NO.

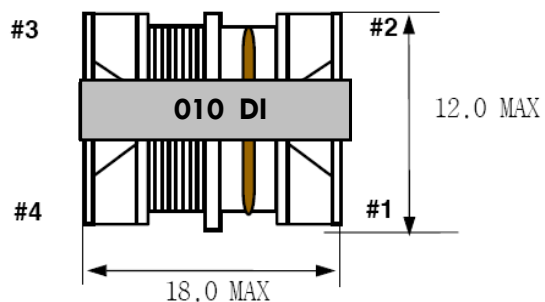
PART NO.

SNP-6320RH-CT1

DESCRIPTION

UU1014"V"4PIN

1. DIMENSIONS (UNIT:mm)



TOP VIEW

* MARKING *

010 DI

← PART NO

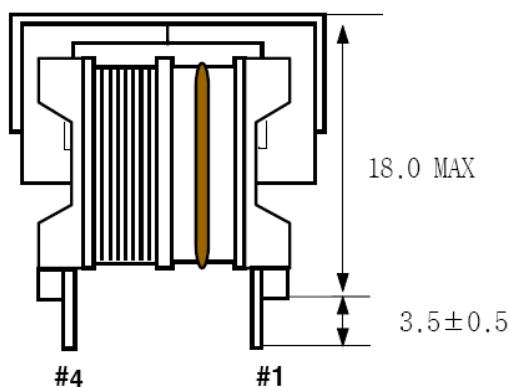
MARKING

PART NO.

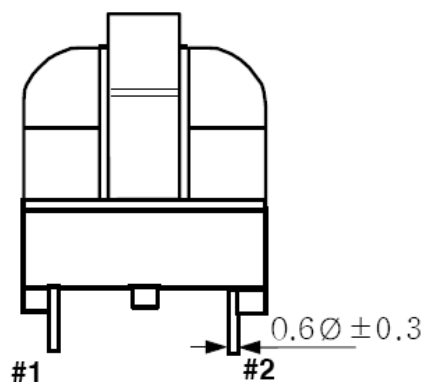
010

MAKER

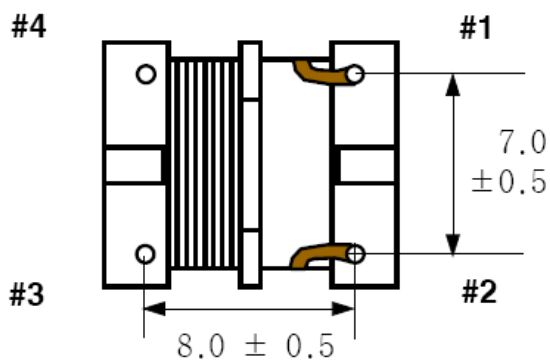
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SIDE VIEW

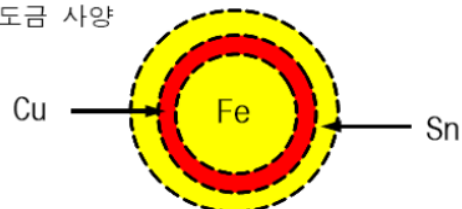


FRONT VIEW



BOTTON VIEW

★. PIN 도금 사양



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APPR. BY

REVISION

DATE



Safety

DIS

DONG - IN SYSTEM CO.,LTD.

APPROVAL SHEET

DATE

2014. 11. 07

PAGE

OF

CUSTOMER

M S P

PART NAME

LINE FILTER

MODEL NO.

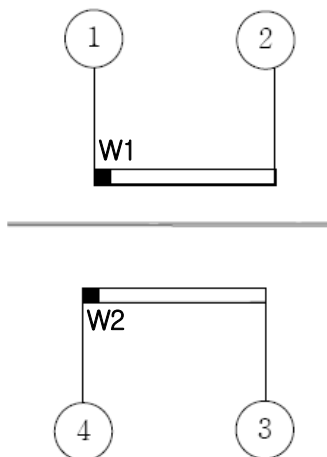
PART NO.

SNP-6320RH-CT1

DESCRIPTION

UU1014"V"4PIN

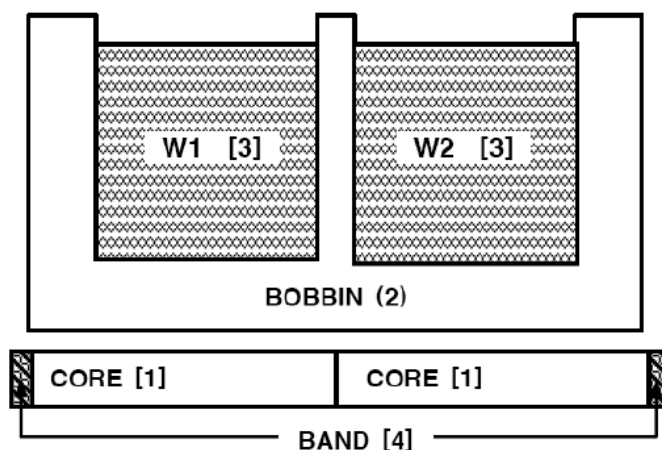
2. CONNECTION



3. WINDING SPECIFICATION

NO	TERMINAL		WIRE	Ts		WINDING METHOD	INSULATION	
	S	F					MATERIAL (t / mm)	Ts
W1	1	2	UEW 0.80Ø	1 TS				
W2	4	3	UEW 0.25Ø	70 TS (ref)				

4. CONSTRUCTION



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APPR. BY

REVISION

DATE



Safety

DIS

DONG - IN SYSTEM CO.,LTD.

APPROVAL SHEET

DATE

2014. 11. 07

PAGE

OF

CUSTOMER

M S P

PART NAME

LINE FILTER

MODEL NO.

PART NO.

SNP-6320RH-CT1

DESCRIPTION

UU1014"V"4PIN

5. ELECTRICAL CHARACTERISTICS

NO	ITEM	TERMINAL	SPEC	REMARK
1	INDUCTANCE	1 - 2	0.5uH MIN	LCR METER AG 4304 HP-4274A at 1KHz 1V
		4 - 3	4.0 mH MIN	
2	DC RESISTANCE (20℃)	1 - 3 6 - 4	3.0 ohm MAX 1.0 ohm MAX	WHEATSTONE BRIDGE HIOKI 3540 (mΩ METER)
3	WITHSTANDING VOLTAGE	COIL - CORE	AC 1.5 KV RMS 1 SEC. CC=10mA	KIKUSUI TOS-5050 , TOS-8750
		COIL - COIL	AC 1.5 KV RMS 1 SEC. CC=10mA	
4	INSULATION RESISTANCE	COIL - COIL COIL - CORE	100 Mohm MIN at DC 500V	MEGOHM METER (SM-5E)

6. MATERIAL LIST

NO	ITEM	MATERIAL	MANUFACTURER	FILE NO.
1	CORE	SM-100 UU1014 R10K UU1014 P12K UU1014	SAM WHA CORPORATION. JI SHUN MAGNETIC CO.,LTD. NANTONG HUAXING MAGNETIC MATERIAL CO.,LTD	
2	BOBBIN	PHENOL 94V-0 UU1014 "V" TYPE 4PIN	SUMITOMO BAKELITE CO., LTD.	E41429
3	WIRE	POLYURETHANE ENAMELED COPPER WIRE 2UEW 0.80Ø 2UEW 0.25Ø	DONG YANG ELECTRONICS IND CO LTD.	E102761
4	PIN TERMINAL	SOLDER COATED COPPER	DAE-A LEAD CO.,LTD.	
5	VARNISH	SR-337A,B	SEKYE CHEMICAL CO.,LTD.	E257443
6	SOLDER	Sn99.3 / Cu0.7 or EQV.	ALPHA METALS CO.,LTD or EQV.	
7	MARKING	INK (BON MARQUE) or EQV.	ATL CO.,LTD or EQV.	

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CHECK BY

APPR. BY

REVISION

DATE



Safety

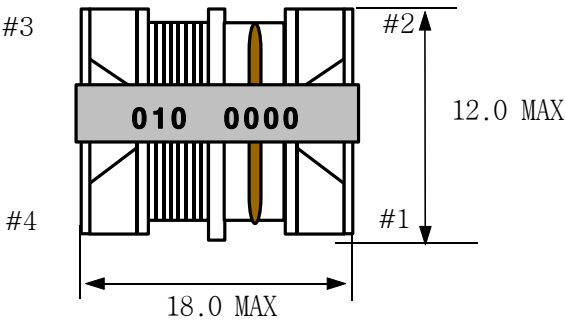
DIS

DONG - IN SYSTEM CO.,LTD.

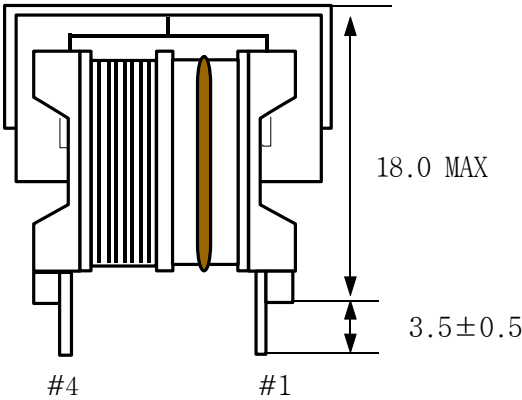
The following Page(s) are related to Miscellaneous-06. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

SPECIFICATION		SHEET NO.	2 OF 12
		DATE	2024. 01. 08
PART NAME	LINE FILTER	MODEL NAME	SNP-6320RH-CT1
CODE NO.	LFU10-0104R5	DESCRIPTION	UU 10x14

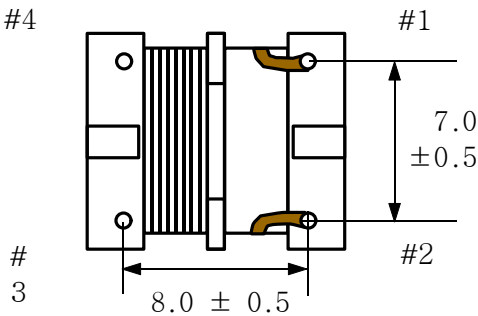
6. APPEARANCE & DIMENSION (UNIT:mm)



- TOP VIEW -



- SIDE VIEW -



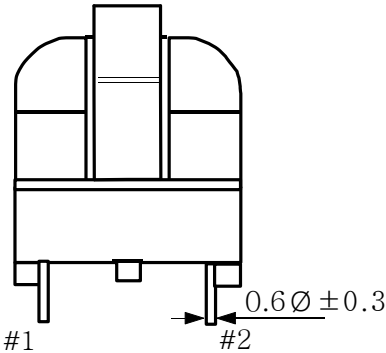
※ MARKING (BLACK)

010 0000

PRODUCTION LINE
WEEK
YEAR

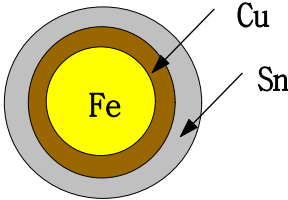
※ PRODUCTION LINE

A : CHUN AN
B : BAZHOU
Y : YANTAI
C : WEIHAI



- FRONT VIEW -

※. PIN PLATING SPEC

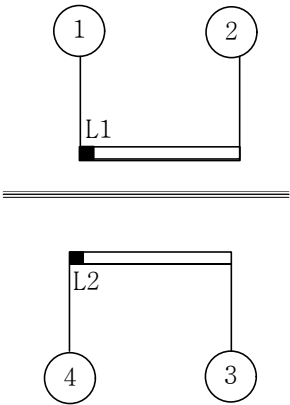


※ PIN LENGTH : BEFORE SOLDERING

NO	REVISION	DATE	CHECK	DRAWN	CHECKED	APPROVED
1				2/2	lee	j
2						
3						
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SPECIFICATION		SHEET NO.	3 OF 12
		DATE	2024. 01. 08
PART NAME	LINE FILTER	MODEL NAME	SNP-6320RH-CT1
CODE NO.	LFU10-0104R5	DESCRIPTION	UU 10x14

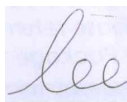
7. SCHEMATIC DIAGRAM





WINDING	BOTTOM VIEW	C.C.W
REMOVED PIN		
CUT PIN		
TUBE		

8. WINDING SPECIFICATION					
WINDING ORDER	NAME	TERMINAL NO. (S - F)	W I R E	TURN S	WINDING METHOD
W1	L1	1 - 2	UEW 0.80Ø	1Ts	SOLENOID WINDING
W2	L2	4 - 3	UEW 0.25Ø	70Ts REF.	SOLENOID WINDING

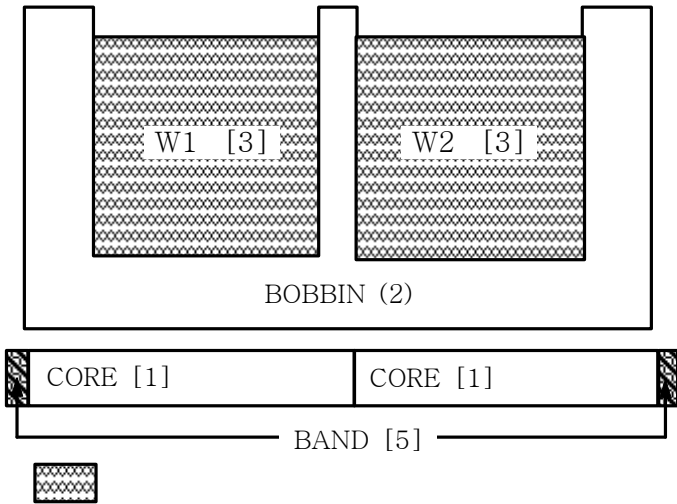
NO	REVISION	DATE	CHECK	DRAWN	CHECKED	APPROVED
1						
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SPECIFICATION		SHEET NO.	5 OF 12
		DATE	2024. 01. 08
PART NAME	LINE FILTER	MODEL NAME	SNP-6320RH-CT1
CODE NO.	LFU10-0104R5	DESCRIPTION	UU 10x14

11. ELECTRICAL CHARACTERISTICS

NO.	CLOSURE	TERMINAL	ELECTRICAL CHARACTERISTICS	TOLERANCE	TEST CONDITION
1	INDUCTANCE	1 - 2 4 - 3	0.5 [uH] 4.0 [mH]	MIN MIN	HP-4284A at 1KHz, 1Vrms
2	DC RESISTANCE	1 - 2 4 - 3	3.0 [Ω] 1.0 [Ω]	MAX MAX	WHEATSTONE BRIDGE YEW TYPE 2755 HIOKI TYPE RM3544
3	LAYER SHORT	AC 1.5KV, 60 Hz			
4	WITHSTANDING VOLTAGE	AC 1.2KV, 1 MINUTE. 5mA (PRIMARY TO SECONDARY) AC 1.2KV, 1 MINUTE. 5mA (COIL TO CORE)			
5	INSULATION RESISTANCE	DC 500V, 100M OHM MIN. (COIL TO COIL, ANY COIL TO CORE)			

12. INTERNAL CONSTRUCTION



NO	REVISION	DATE	CHECK	DRAWN	CHECKED	APPROVED
1						
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CUSTOMER : Manufacturing Solution Provide CO., Ltd.

SPECIFICATION		SHEET NO.	6 OF 12
		DATE	2024. 01. 08
PART NAME	LINE FILTER	MODEL NAME	SNP-6320RH-CT1
CODE NO.	LFU10-0104R5	DESCRIPTION	UU 10x14

13. INTERNAL CONSTRUCTION

NO	I T E M	MATERIALS & DIMENSIONS	MANUFACTURER	REMARK
1	C O R E	UU10x14mm SM-100,R10K,R12K,TS-10,A10 or Equiv.	SAM HWA ELECTRONICS CO., LTD. ZHEJING DONGYANG DMEGC MAGNETIC CO.,LTD ZIBO YANGGUANG ELECTRONICS CO., LTD TDG HOLDING CO., LTD. ACME CO.,LTD or Equiv.	
2	BOBBIN	UU 10 x 14mm [4P] PHENOL (94V - 0)	MOMENTIVE SPECIALTY CHEMICALS GMBH. SUMITOMO BAKELITE CO., LTD. CHANG CHUN PLASTICS CO LTD.	E61040 E41429 E59481
3	W I R E	UEW 0.25Ø UEW 0.80Ø	DONG YANG ELECTRONICS IND CO.,LTD. SHANDONG PENGTAI STOCK CO., LTD. ZHEJIANG XIANDENG ELECTRICAL APPLIANCES CO., LTD JIANGSU DARTONG M&E CO.,LTD HANGZHOU WEIFENG ELECTRONIC CO LTD	E102761 E166187 E218270 E237377 E229341
4	IMPREGNATION	SR-337A, SR-337B 319-5	SE KYE CHEMICAL CO., LTD. JIANG CITY DENGFENG ELETRICAL METERIAL CO., LTD.	E257443 E236421
5	B A N D	UU 10 x 14mm STAINLESS STEEL	DAE HEUNG CO., LTD. BOO KYOUNG ELECTRONICS CO.,LTD. ZIBO YANGGUANG ELECTRONICS CO., LTD SUNG WOO BOBBIN CO., LTD. or Equiv.	

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The following Page(s) are related to Miscellaneous-07. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

SPECIFICATIONS	ITEM	LINE FILTER	Rev
	TNC SPEC NO	CH935230S(LLF- 104)	1

2. ELECTRICAL CHARACTERISTIC

NO	ITEM	TERMINAL	SPECIFICATION			REMARKS
1	RATED VOLTAGE	LINE TO LINE	AC 300V			
2	RATED CURRENT	START-FINISH	3.5A			
3	INDUCTANCE	START-FINISH	16KHz	23.0mH	+ 50%, -30%	HP-4194A 1V (25℃±2℃)
4	TEMPERATURE RISE	AT RATED CURRENT	55℃ MAX			
5	DC RESISTANCE	START-FINISH	99.0 mΩ MAX			HIOKI 3540 (25℃±2℃)
6	WITHSTANDING VOLTAGE	LINE TO LINE	AC 1,500V 1 MINUTE.			TOS-5101 CUT OFF CURRENT (5mA)
7	INSULATION RESISTANCE	LINE TO COVER	DC 500V, 300MΩ MIN.			TOS-8850

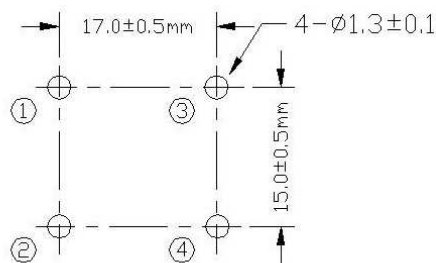
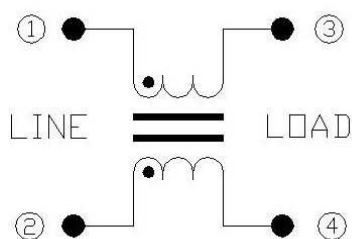
3. OPERATING TEMPERATURE RANGE

-40℃ TO +120℃ INCLUDING TEMPERATURE RISE.

4. KEEP TEMPERATURE RANGE

-40℃ ~ +120℃.

5. CIRCUIT DIAGRAM



PCB layout requirements

※PCB LAYOUT is strictly required..

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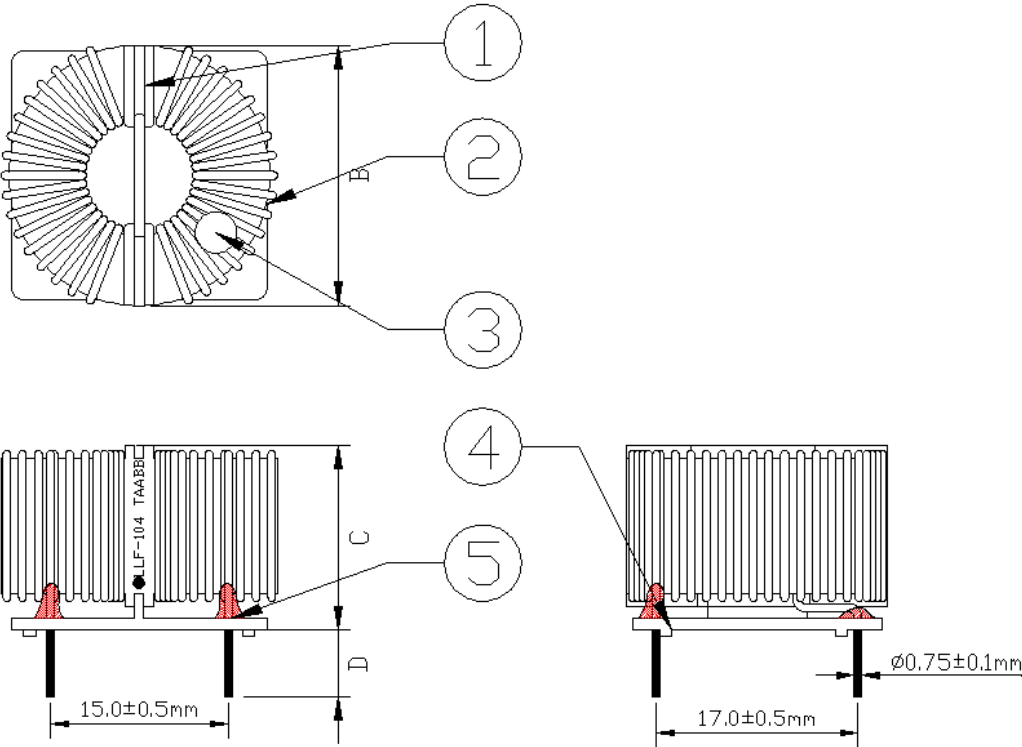
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SPECIFICATIONS	ITEM	LINE FILTER	Rev
	TNC SPEC NO	CH935230S(LLF- 104)	1

6. WINDING SPECIFICATION

NO	TERMINAL		WIRE	TURNS	WINDING METHOD	UNBALANCE SPECIFICATION
	START	FINISH				
L1	1	3	UEW 0.75Φ	52 ±3Ts	HANDMADE	BETWEEN L1 AND L2 (0.4mH MAX)
L2	2	4				

7. SHAPE AND DIMENSION



DIMENSION	A	B	C	D
	25.0mm MAX	24.0mm MAX	22.0mm MAX	Not include solder fillet 3.6 ± 0.5mm

SPECIFICATIONS	ITEM	LINE FILTER	Rev
	TNC SPEC NO	CH935230S(LLF- 104)	1

8. MATERIAL LIST

No.	NAME	SPECIFICATION		MANUFACTURER	UL No.
1	Core Cover	PBT LUPOX GP2156F(#)		LG CHEM LTD	E67171
		PBT 4130-104XV		CHANG CHUN PLASTICS CO LTD	E59481
		PBT 1500GN-(k)		SAMYANG CORPORATION	E121254
2	Enamel Wire	UEW 0.75Φ / 52±3T	UEW	SIAM PACIFIC ELECTRIC WIRE & CABLE CO.,LTD	E142108
			UEW	ZHEJIANG HONGBO TECHNOLOGY CO LTD	E221719
3	Ferrite Core	M10K T19X13X11 BH10 T19X13X11		SUZHOU TIANMING MAGNETICS TECHNOLOGY CO.,LTD BAICI ELECTRONIC	
4	Coil Base	PBT LUPOX GP2306F(#)		LG CHEM LTD	E67171
		PBT 1500GN-30		SAMYANG CORPORATION	E121254
5	Epoxy	EPOXY RESIN	EMR301/ EMH301	JUNG DO E&P CO LTD	
			8757W-2	SUZHOU ROUTEN ELECTRONICS CO., LTD	

9. MARKING

MODEL	LABEL
CH935230S(LLF-104)	●LLF-104 TAABB

●LLF-104 TAABB
 WEEK (1'st week : 01)
 YEAR (2020 : 20)
 COMPANY CODE (T : TNC)

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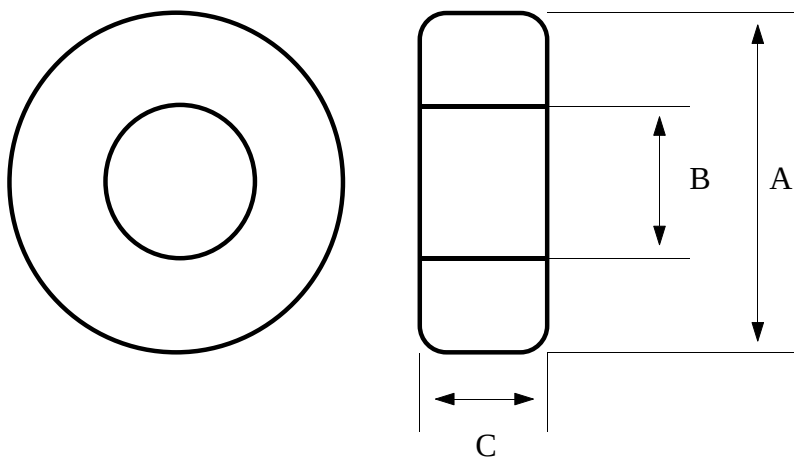
SPECIFICATIONS	ITEM	LINE FILTER	Rev
	TNC SPEC NO	CH935230S(LLF- 104)	1

14. FERRITE CORE SPECIFICATION

- Characteristics

Symbol	Unit	BH10 T19X13X11	M10K T19X13X11
μi	—	10,000±30%	10,000±30%
Bms	mT	400	380
Hcms	A/m	7.2	6.0
Bms	mT	120	120
Tc	℃	>125	>120
TANδ /μiac	$\times 10^{-6}$	<10.0	<20.0
$\alpha \mu r$	$\times 10^{-6} / ^\circ C$	-0.5~1.5	-0.5~1.5
ρ	$\Omega.m$	0.15	0.2
d	g/cm ³	4.95	4.9

- Dimension



A: 19.0 ±0.4

B: 13.0 ±0.4

C: 11.0 ±0.3

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SPECIFICATIONS	ITEM	LINE FILTER	Rev
	TNC SPEC NO	CV36045USA2	1

2. ELECTRICAL CHARACTERISTIC

NO	ITEM	TERMINAL	SPECIFICATION			REMARKS
1	RATED VOLTAGE	LINE TO LINE	AC 300V			
2	RATED CURRENT	START-FINISH	7.5A			
3	INDUCTANCE	START-FINISH	160KHz	450uH	+ 50%, -30%	HP-4194A 1V (25℃±2℃)
4	TEMPERATURE RISE	AT RATED CURRENT	60℃ MAX			
5	DC RESISTANCE	START-FINISH	19.0 mΩ MAX			HIOKI 3540 (25℃±2℃)
6	WITHSTANDING VOLTAGE	LINE TO LINE	AC 1,500V 1 MINUTE			TOS-5101 CUT OFF CURRENT (5mA)

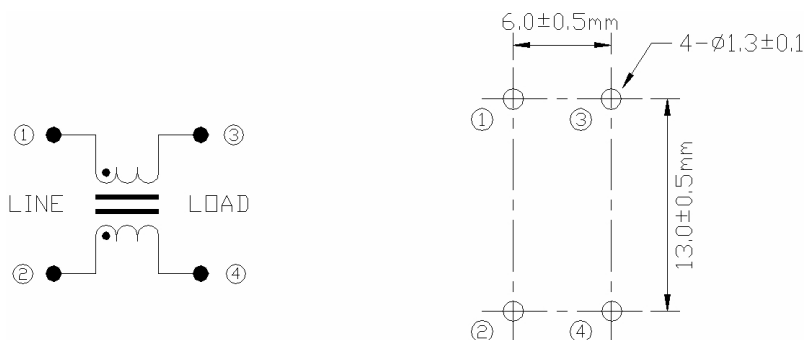
3. OPERATING TEMPERATURE RANGE

-30℃ TO +105℃ INCLUDING TEMPERATURE RISE.

4. KEEP TEMPERATURE RANGE

-30℃ ~ +60℃.

5. CIRCUIT DIAGRAM



Minimum PCB Piercing HOLE

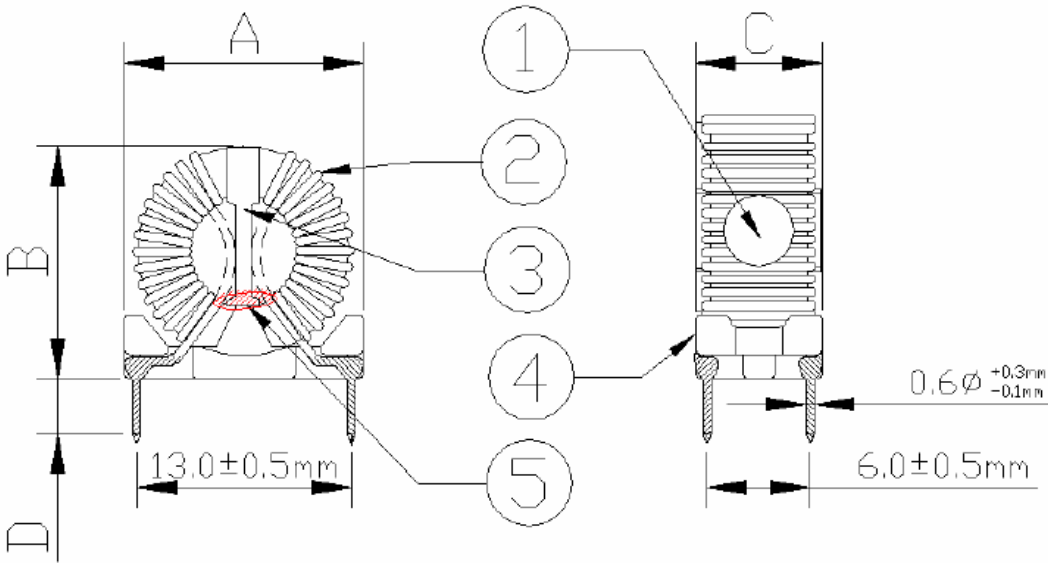
TNC TNC CO.,LTD	DESIGN	CHECK	APPROVAL	PAGE
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SPECIFICATIONS	<i>ITEM</i>		<i>LINE FILTER</i>	<i>Rev</i>
	<i>TNC SPEC NO</i>		<i>CV36045USA2</i>	<i>1</i>

6. WINDING SPECIFICATION

NO	TERMINAL		WIRE	TURNS	WINDING METHOD	UNBALANCE SPECIFICATION
	START	FINISH				
L1	1	3	UEW 0.7Φ	9 ±1Ts	HANDMADE	BETWEEN L1 AND L2 (52.78uH MAX)
L2	2	4				

7. SHAPE AND DIMENSION



DIMENSION	A	B	C	D
	18.0mm MAX	18.5mm MAX	10.0mm MAX	Not include solder fillet 3.6±0.5mm

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	RYU.H.E R&D	KANG.S.W R&D	KOO.J.H R&D	4/13

SPECIFICATIONS	ITEM	LINE FILTER	Rev
	TNC SPEC NO	CV36045USA2	1

8. MATERIAL LIST

No.	NAME	SPECIFICATION		MANUFACTURER	COLOR	UL No.
1	Ferrite Core	MA100 R-13/7/5 R10KF TR13X7X5C		JFE Ferrite Corp LAIWU CHAINWELL ELECTRONIC&MATERIAL CO.,LTD Equal.	GRAY	
2	Enamel Wire	UEW 0.7Φ / 9±1Ts	UEW	Hwa Il Electronics Co.,Ltd	YELLOW	E140246
			UEW	SHANDONG PENGTAI STOCK CO LTD Equal.	YELLOW	E166187
3	Coil Separator	LCP L304T40		TORAY Industries INC	BLACK	E41797
		NYLON A 50H1(r3)(f2)		SOLVAY ENGINEERING PLASTICS GBU	BLACK	E44716
4	Coil Base	Phenolic (PF 2736(a)(b)) UL 94 V-0 Class		Hexion GmbH	BLACK	E61040
		Phenolic (T375HF) UL 94 V-0 Class		Chang chun Plastics LTD	BLACK	E59481
5	Epoxy	EPOXY RESIN	NA-010	ND Chemical	WHITE	
			EA610A / EA610B	Chem Tech	Transparent	

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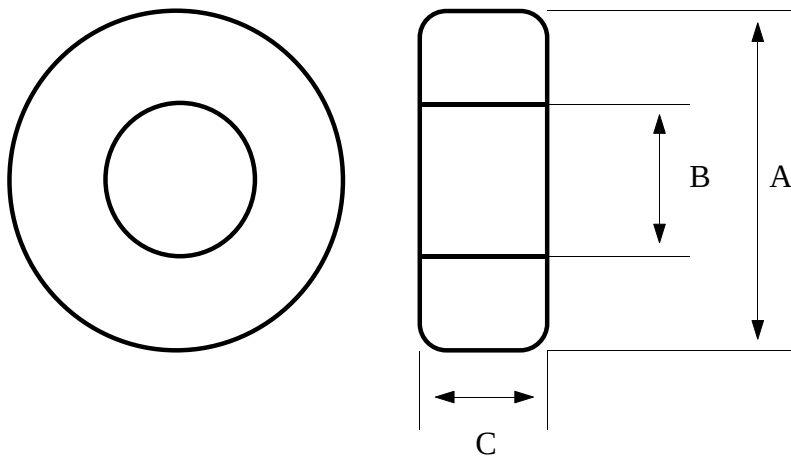
SPECIFICATIONS	ITEM	LINE FILTER	Rev
	TNC SPEC NO	CV36045USA2	1

14. FERRITE CORE SPECIFICATION

- Characteristics

Symbol	Unit	MA100 R- 13/7/5	R10KF TR13X7X5C
μi	-	10,000±25%	10,000±30%
Bms	mT	415	390
Hcms	A/m	3.0	7.0
Bms	mT	76	100
Tc	℃	>115	>120
TANδ /μiac	*10 ⁻⁶	<1.9	<7.0
$\alpha\mu r$	*10 ⁻⁶ /℃	-0.5~2.0	0~1.5
ρ	Ω.m	0.1	0.15
d	g/cm ³	5.0	4.8

- Dimension (before coating)



A: 13.0 ±0.35

B: 7.0 ±0.3

C: 5.0 ±0.3

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NETWORK CAMERA, PNM-C32083RQZ

PoE(55V ) 0.75A

M/C: PNM-C32083RQZ/KEX Fac.ID:D



2024.05 S/N: Serial No.

MAC ADDRESS: XX-XX-XX-XX-XX-XX

CAN ICES-3(A)/NMB-3(A)

Manufacture for Hanwha Vision Co., Ltd.

MADE IN KOREA



Rainproof/ Étanche

IP66



