WmaxVision

Fixed Mount Smart Code Reader

User Manual V1.0.0

VS110R Series



Please read this manual before using the code reader to achieve optimal performance.
Please keep this manual properly for easy reference at any time.

- Symbols

The following symbols alert you to important messages. Be sure to read these messages carefully.

DANGER	Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
WARNING	Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
CAUTION	Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
NOTICE	Indicates a situation which, if not avoided, could result in product damage as well as property damage.
Important	Indicates cautions and limitations that must be followed during operation.
Point	Indicates additional information on proper operation.
Reference	Indicates caution and limitations that must be followed during operation.

Indicates the reference pages in this manual or the reference pages in separate manuals.

- abstract

This manual describes the connection, wiring, configuration methods and precautions for the barcode reader VS110R, etc.

Contents

Contents

1 Check the package contents before use 3
1-1 Check the package contents 3
1-2 Device Body 3
1-3 System Configuration Connection and Setup 4
2 Connection and Wiring 6
2-1 Device Wiring 6
2-2 Sensor and Switch Wiring 8
3 Check the installation conditions 9
3-1 Ensure that there is no interference from external ambient light: 9
3-2 Check if the beam of the code reader is blocked by foreign objects: 9
4 specifications of the products 11
4-1 Technical Parameters 11
4-2 Outline Dimensions 12
4-3 ASCII Code 13
4-4 Software License 14
4-5 Copyright Notice 15

1 Check the package contents before use

Note: Appearance here is for reference only. Refer to the device's specification for detailed dimension information

1-1 Check the package contents

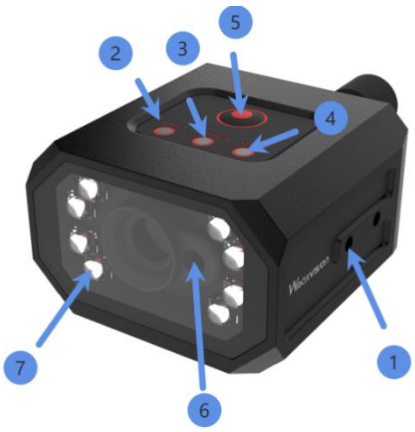
- Standard Packing List

Model	Name	Contents	Nunber	Appearance
VS110R	1D/2D barcode reader (fixed)	Device	1	
		24V source	1	
		cable	1	

- Optional accessory

Model	Name	Contents	Nunber	Appearance
V1	Bracket V1	bracket	1	/
		screw	4	

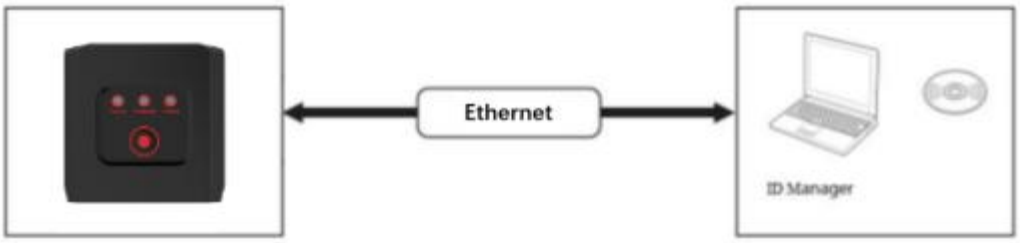
1-2 Device Body



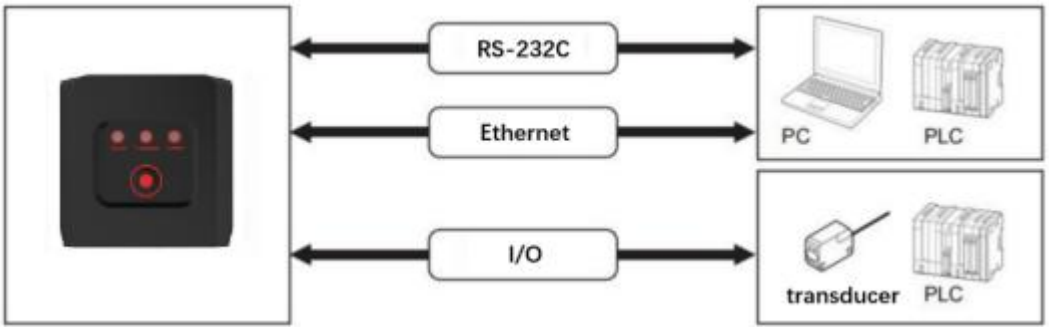
No.	Name	Description
1	Screw Hole	M3 screw holes for installing and fixing the code reader, total 4 screws holes with 2 at each side
2	LNK Indicator	The green light is on when the network connection is successful, the yellow light is on for upper computer connection - debug mode, and the green light flashes for upper computer connection - working mode.
3	Decoding Indicator	A green light illuminates when decoding is successful, and a red light illuminates when decoding fails.
4	Power Indicator	It is power indicator. It will be on once the device is powered and working
5	Trigger Button	Press this button will trigger the device once
6	Laser Aimer	Laser aimer is used for assisting camera to capture the target
7	Internal Illumination	The device contains internal illumination to illuminate the target. Some model has polarizer on the window, but not all.

1-3 System Configuration Connection and Setup

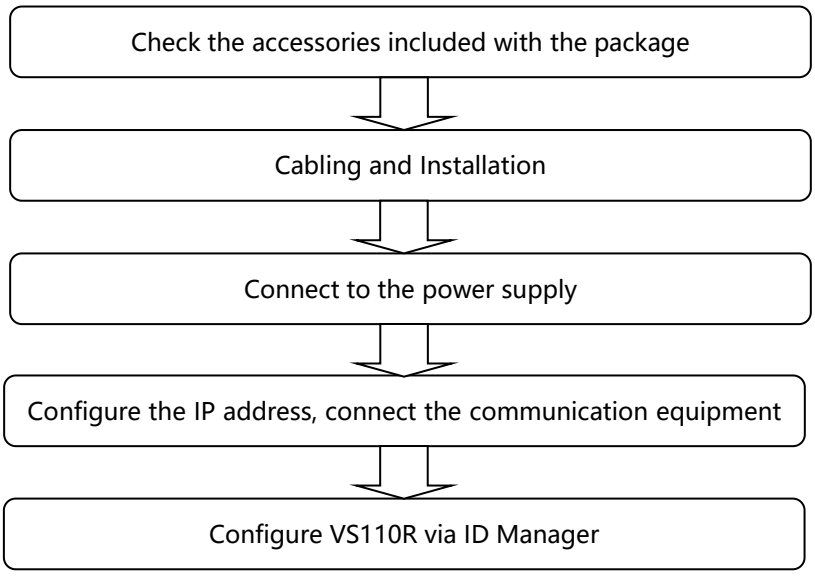
- When configuring the device, use ethernet cable to connect the device to the PC.



- When using the device, use RS-232C, Ethernet or I/O to connect the device to PC/PLC.



- Configuration Process.

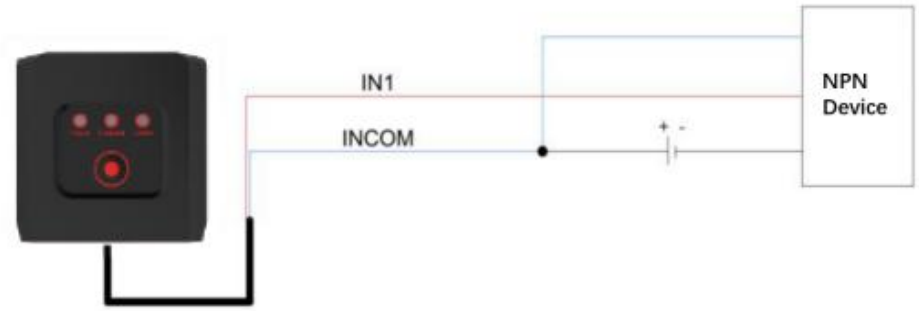


2 Connection and Wiring

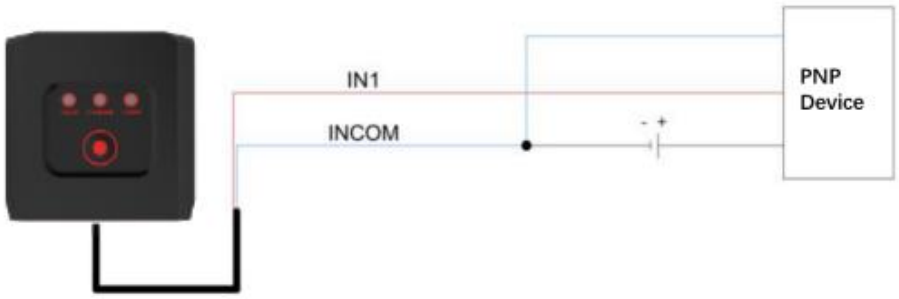
2-1 Device Wiring

- Input Signal

NPN Wiring

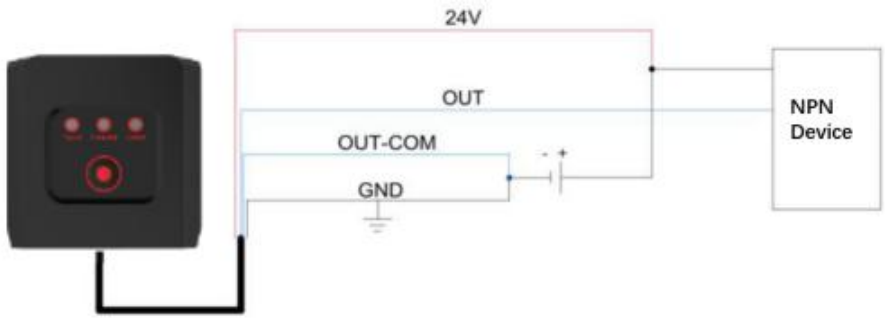


PNP Wiring

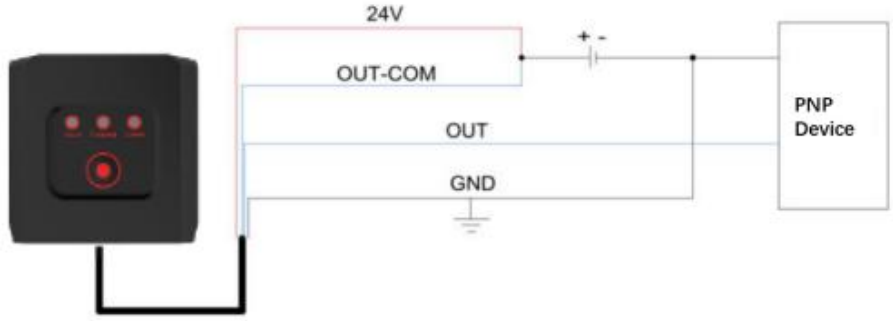


- Output Signal

NPN Wiring



PNP Wiring



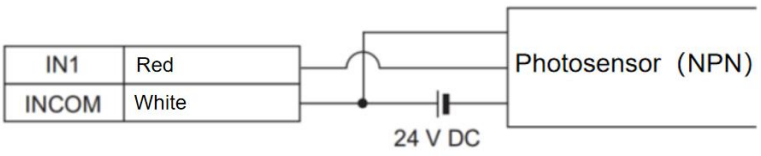
- Cable Wire Sequence Table

DB15 Male		DB9 Female	RJ45 Male	I/O	Power
TP	1		1		
24V_TERM	2			6 (Brown)	VCC
IN1	3			1 (Red)	
IN_COM	4			2 (White)	
OUT1	5			3 (Green)	
NC	6				
OUT2	7			4 (Black)	
NC	8				
OUT_COM	9			5 (Yellow)	
GND	10	5		7 (Blue)	GND
TN	11		2		
TXD	12	2			
RP	13		3		
RXD	14	3			
RN	15		6		

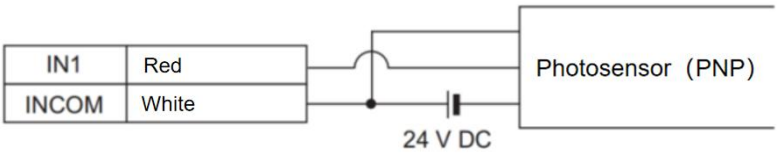
2-2 Sensor and Switch Wiring

- Optoelectronic sensor wiring example diagram

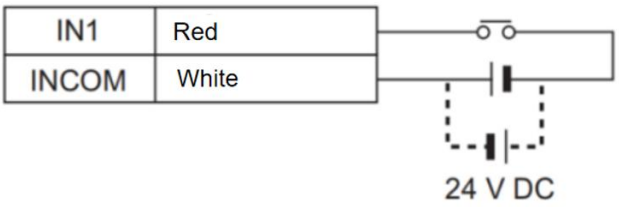
NPN



PNP



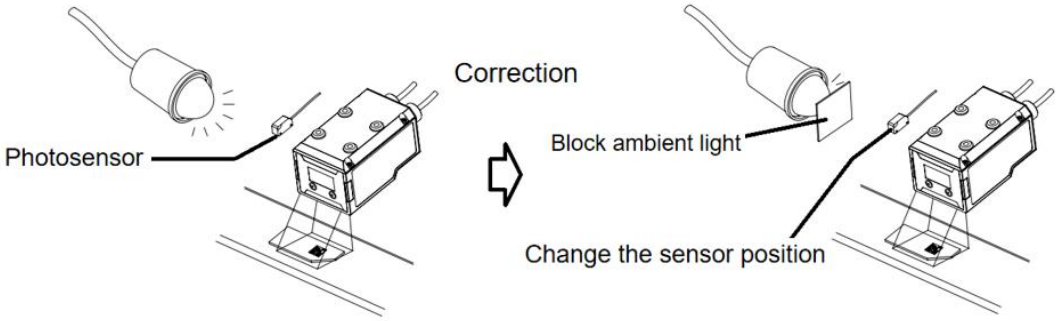
- Example Diagram of Switch Wiring



3 Check the installation conditions

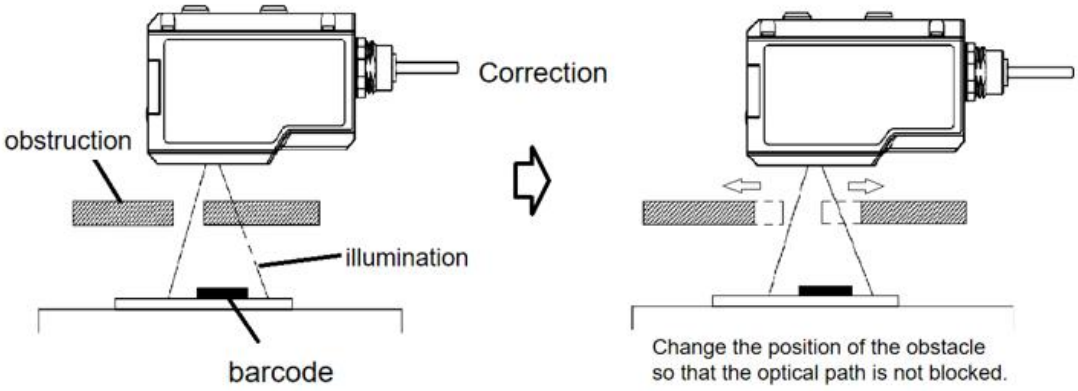
3-1 Ensure that there is no interference from external ambient light:

Please avoid stray light such as sunlight, other lighting, and photoelectric sensors from entering the light-receiving area of the code reader. Otherwise, it may lead to unstable reading or reading errors.



3-2 Check if the beam of the code reader is blocked by foreign objects:

If the light beam is blocked, the barcode may not be detected.



3-3 Installation Precautions:

During the installation and use of the equipment, please be sure to take proper precautions against electromagnetic interference. Otherwise, phenomena such as abnormal decoding and false triggers may occur, and in severe cases, the equipment will fail to operate normally.

- When installing the product, if you cannot ensure that the product itself and all connected devices are properly grounded, you should choose to isolate the product with an insulating bracket.
- To avoid the accumulation of static electricity, make sure the device is well grounded to protect the internal electrical components.
- The power cable, data cable, signal cable, etc. of device must be wired separately. Make sure to ground them if the wiring groove is used to separate the wiring and the wiring groove is metal.
- During the installation and use of the device, high voltage leakage must be avoided.
- When connecting the device and metal accessories, they must be connected firmly to maintain good conductivity.
- Do not route the device together with other equipment (especially servo motors, high-power devices, etc.), and control the distance between cables to more than 10cm. Make sure to shield the cables if unavoidable.
- The control cable of the device and the power cable of the industrial light source must be wired separately to avoid bundled wiring.
- During the wiring process, evaluate the wiring space reasonably, and do not pull the cables hard, so as not to damage the electrical performance of the cables.
- Use a shielded network cable to connect to the device. If you use a self-made network cable, make sure that shielding shell at the aviation head is well connected to the aluminum foil or metal braid of the shielding cable.
- The unused cables of the device must be insulated.When the product cable is too long, be sure to bundle it in a figure-8 shape.
- Use the power adapter to supply power to the device separately. If centralized power supply is necessary, make sure to use a DC filter to filter the power supply of the device separately before use.
- If the device is powered on and off frequently, it is necessary to strength the voltage isolation, and consider adding a DC/DC isolation power supply module between the device and the adapter.
- When connecting or disconnecting the control cable, be sure to turn off the power first
- The device does not support PoE power supply, connecting it to a PoE switch may damage the device

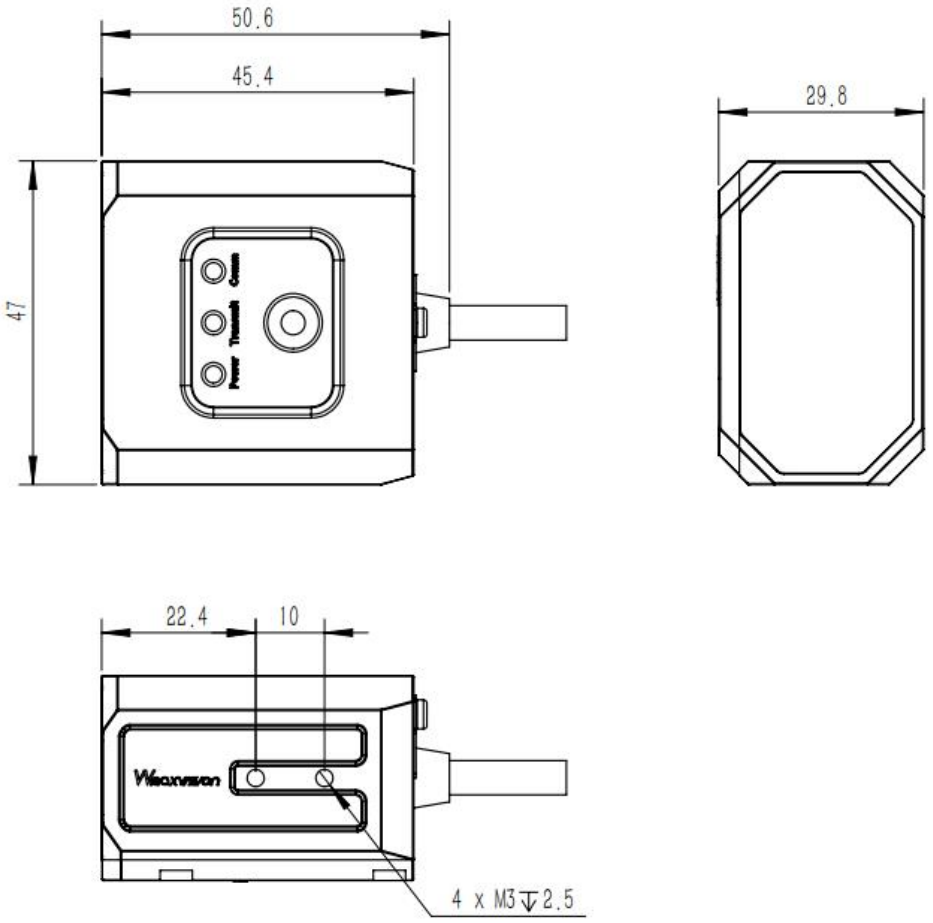
4 specifications of the products

4-1 Technical Parameters

Product Model	VS110R
Image Sensor	Global Shutter Monochrome CMOS(black and white) 1.3MP (1280*1024), Maximum frame rate 60fps Global Shutter Monochrome CMOS(black and white) 2.3MP (1920*1200), Maximum frame rate 30fps
Lens Focusing	1.3MP Fixed Focus; 2.3MP Software-adjustable focusing
Illumination	Red LED （direct illumination and polarization, with lighting colors available in white and blue）
Aiming	650nm laser
Symbologies	Common 1D（Code39, UPC, Code128…）&2D（QR, Data Matrix, PDF417…）
Power Supply	24V DC ±10%
Operation Current	700mA (typical)
Standby Current	200mA (typical)
Physical Interface	DB9 - Cluster Communication Port , 100 Mbps Ethernet port
Interfaces	RS232, TCP/IP Server, TCP/IP Client, UDP, FTP, Profinet, ModbusTCP, Ethernet/IP, MC, ModbusRTU
Digital I/O	1 x Input, 2 x Output
Dimensions	45.40mm x 47.00mm x 29.87mm
Weight	133g
IP Sealing	IP54 (In condition of Cable Connected)
Temperature	Operation：-10 ℃ ~ +50 ℃， Storage：-20 ℃ ~ +70 ℃
Humidity	5% ~ 85% (no condensation)
Case Material	Aluminum Alloy
Assistant Software	IDManager

4-2 Outline Dimensions

Unit: Millimeters



4-3 ASCII Code

HEX		0	1	2	3	4	5	6	7
	BIN	0000	0001	0010	0011	0100	0101	0110	0111
0	0000		DLE	(SP)	0	@	P	‘	p
1	0001	SOH	DC1	!	1	A	Q	a	q
2	0010	STX	DC2	“	2	B	R	b	r
3	0011	ETX	DC3	#	3	C	S	c	s
4	0100	EOT	DC4	$	4	D	T	d	t
5	0101	ENQ	NAK	%	5	E	U	e	u
6	0110	ACK	SYN	&	6	F	V	f	v
7	0111	BEL	ETB	‘	7	G	W	g	w
8	1000	BS	CAN	(	8	H	X	h	x
9	1001	HT	EM	)	9	I	Y	i	y
A	1010	LF	SUB	*	:	J	Z	j	z
B	1011	VT	ESC	+	;	K	[	k	{
C	1100	CL	FS	,	<	L	\	l	|
D	1101	CR	GS	-	=	M	]	m	}
E	1110	SO	RS	.	>	N	^	n	~
F	1111	SI	US	/	?	O	_	o	del

4-4 Software License

When using the VS110R series and the setting software "ID Manager" (hereinafter referred to as "the Software"), users must agree to the following software license agreement (hereinafter referred to as "the Agreement"). Using or copying any part of the Software indicates that you accept all the terms and conditions of this Agreement, and signifies the conclusion of this Agreement.

- **Licence**
  - As long as you comply with this Agreement, Wmaxvision agrees to grant you a non-exclusive license for the software.
  - As long as the software is only used by one company, regardless of the number of licenses, you may install the software to use the purchased Wmaxvision products.
- **Finite replication**
  - You may copy the software only once, for the purpose of keeping a backup copy of the software for yourself.
- **Prohibit**

  You are prohibited from performing the following operations on this software.
  - a. Modification, such as partial or full change or addition of the software's functions. Operations explicitly permitted by Wmaxvision are excluded, and these operations include installing update programs or additional functions provided by Wmaxvision.
  - b. Any reverse engineering used to analyze this software, including decompilation and disassembly.
  - c. Sell, transfer, redistribute, license, rent or lease the software to a third party. Unless prior consent is obtained from Wmaxvision.
- **Copyright**
  - The Company reserves the copyright to this software, its operating instructions and other relevant terms.
- **Disclaimer**
  - Wmaxvision shall not be liable for any loss or damage caused to you or any third party as a result of operating this software.
- **Technical assistance**
  - Pursuant to this Agreement, Wmaxvision provides technical support, such as answering questions related to this Software. However, there is no guarantee that the technical support provided will definitely achieve your goals.
- **Termination Agreement**
  - This Agreement shall automatically terminate when you cease to use the Software by discarding the Software and its copies.
  - If you violate any part of the terms of this agreement, Wmaxvision will unilaterally terminate your agreement. In this case, you shall immediately return the software and its copies to Wmaxvision or destroy them.
  - If you cause losses or damages to Wmaxvision due to your breach of this Agreement, you shall pay compensation for such losses or damages.
- **Apply the law**

  This Agreement shall be implemented within the scope permitted by the laws and regulations of Mainland China.

4-5 Copyright Notice

Product warranties

Wmaxvision products have undergone strict ex-factory inspection. In case of malfunction, please contact the nearest Wmaxvision office and provide detailed information about the malfunction.

- **Quality guarantee period**

  The shelf life is one year, calculated from the date when the product is delivered to the location designated by the purchaser.

- **Warranty Scope**

  1). If a failure caused by Wmaxvision occurs within the aforementioned warranty period, we will repair the product free of charge.

  However, the following situations are not covered by the warranty.

  - Malfunctions caused by improper operation under conditions or environments not specified in the operation manual, user manual or technical requirements specially agreed between the purchaser and VMAX Company, or improper use.
  - The fault is not caused by product defects, but by the purchaser's equipment or the purchaser's software design.
  - Malfunctions caused by modifications or repairs performed by personnel not from Wmaxvision Company
  - Failures that can be completely avoided by following the regulations such as proper maintenance or replacement of wearing parts in accordance with the operation manual or user manual.
  - Failures caused by factors such as unforeseeable changes in the level of science and technology after the products are delivered from Wmaxvision Corporation.
  - Our company is not responsible for warranty repairs for malfunctions caused by natural disasters such as fires, earthquakes and floods, or external factors such as abnormal voltage.

  2). The warranty scope is limited to the circumstances specified in Article 1). Wmaxvision Company shall not be liable for any indirect losses (equipment damage, loss of opportunity, loss of profits, etc.) or other losses suffered by the purchaser caused by its equipment.

- **Product Suitability**

The products of Wmaxvision are designed and manufactured as general-purpose products for general industries. Therefore, our company's products shall not be used for the following applications and are unsuitable for such use. However, if the purchaser, in a self-responsible manner, consults us in advance regarding the use of the products, understands the technical specifications, grades and performance of the products, and takes necessary safety measures, the products may be used. Under such circumstances, the product warranty scope is the same as that stated above.

- Facilities that have a serious impact on life and property, such as nuclear power plants, airports, railways, ships, motorized devices and medical equipment
- Public utilities such as electricity, gas and water supply services
- Outdoor use under similar conditions or environments

User Support Page

http://www.wmaxvision.com/

Technical materials that help with the import and application of various products of Wmaxvision Visual Technology can be downloaded. For the latest manuals, please download them from this webpage.



- **Contact Information**

Suzhou WmaxVision Vision Technology Co. Ltd

Address：F4 Building 2, No.45 Dongfu Road, Suzhou, JiangSu, PRC

Phone: +86-512-86860596

Email: sales@wmaxvision.com

Website: www.wmaxvision.com