

**BS2Z25KN Dual light explosion-proof  
online temperature detection system  
Technical Specification**

# catalogue

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# **BS2Z25KN Technical specification manual of dual light explosion-proof online temperature detection system**

## **1 Product description**

The BS2Z25KN dual-light explosion-proof online temperature detection system is the latest generation of explosion-proof monitoring equipment, consisting of an explosion-proof dual-tube pan-tilt unit, a 30x 4000001/2.8" CMOS ICR day-and-night network HD all-in-one machine, and a 17  $\mu$  m non-cooled infrared thermal camera. It employs more advanced manufacturing processes and a mature quality management system to ensure that the products quality, performance, and appearance lead in its category. This product is designed for use in environments with flammable and explosive gases and combustible dust, achieving clear control of the site.

BS2Z25KN The device selection of the dual-light explosion-proof online temperature detection system fully considers the requirements of high and low temperature working performance, and ensures the excellent environmental adaptability of the whole machine.

BS2Z25KN Dual light explosion-proof online temperature detection system features:

1. It has the function of passive thermal imaging all day long, has strong smoke penetration performance, and can be used in a wide range of ambient temperature.
2. It is driven by precision motor, which is sensitive and stable in operation. The accuracy deviation is less than  $0.1^\circ$ , and there is no image shaking at any speed.
3. Support power-off state memory function, and automatically return to the previous pan-tilt and lens state after power-on.
4. Support lightning protection, surge protection and sudden wave protection.
5. Horizontal direction  $360^\circ$  continuous rotation, vertical direction  $+90^\circ \sim -90^\circ$ , no monitoring blind area.
6. Supports 3 cruise scans, each of which can add 8 preset points. The horizontal preset point speed can reach up to  $40^\circ /s$ , and the vertical preset point speed can reach up to  $40^\circ /s$ . It supports 128 preset bits,
7. Horizontal key control speed is  $0.1^\circ \sim 30^\circ /s$ , vertical key control speed is  $0.1^\circ \sim 30^\circ /s$ .
8. Support trajectory: horizontal scanning, vertical scanning and random scanning.
9. Support the zoom function, and the rotation speed can be automatically adjusted

according to the zoom ratio of the lens.

10. Support adjustable communication rate and software modification of baud rate and address code.

11. Electrical connection: 3-core power supply, 2-core shielded control signal, category V cable.

12. Seamless access to mainstream platforms and other network devices.



Figure 1 BS2Z25KN Product picture of dual-light explosion-proof online temperature detection system

## 2 Product technical indicators

Double light explosion-proof online temperature detection system			
Non-cooling infrared thermal imaging camera		Day and night network HD all-in-one machine	
Type of detector	Non-cooled focal plane micro-radiometric calorimeter	Sensor type	Progressive Scan CMOS
Pixel count	640×480/384×288	resolution ratio	1 920× 1080
Pixel spacing	17μm	Pixel spacing	1/2.8"
wavelength	8~14μm	Aperture value	F1.6-F3.5
Thermal sensitivity	≤50mk@30°C	electronic shutter	1/1 second ~ 1/30,000 second
frame frequency	25Hz	frame frequency	25Hz
focal distance	4.8mm, 5.7mm, 8 mm, 13mm and other optional	focal distance	4. 5-1 35 mm 30 times optical zoom
angle of field	Depending on the optional lens	Horizontal field of view	57.6-2.5 degrees (wide Angle-telephoto)
spatial resolution	Depending on the optional lens	Close-up	100mm-1500mm (wide Angle-Telephoto)
electronic zoom	1x/2x/4x	Digital zoom	12x
Focus on methods	motor-driven	Focus on methods	motor-driven
autofocus	support	autofocus	support

Image quality adjustment	Brightness and contrast can be adjusted	Image quality adjustment	Brightness, contrast, sharpness and saturation can be adjusted
<b>thermometric analysis</b>			
temperature	$\pm 2^{\circ}\text{C}$ or $\pm 2\%$		
Temperature measurement range	Normal temperature range: $0^{\circ}\text{C} \sim 400^{\circ}\text{C}$ Medium temperature range: $100^{\circ}\text{C} \sim 800^{\circ}\text{C}$		
Maximum	support		
Minimum	support		
Global maximum	support		
Global minimum	support		
Central point	support		
Average	support		
Custom	support		
<b>electrical character</b>			
data interface	RJ45		
Network standards	100 megabits per second network		
Agreement supported	TCP/IP, HTTP, DHCP, DNS, DDNS, RTP, RTSP, PPPoE, SMTP, NTP, UPnP, SNMP, FTP, 802.1x, QoS, HTTPS, IPv6 (SIP, SRTP, optional), GB28181, E-HOME		
Interface	ONVIF、ISAPI、SDK		
Power interface	2EDGKD-3.81mm/2P		
Enter the power	220VAC / DC24V ( $\pm 10\%$ ), only one of which is supported at the factory		
working current	$< 450\text{mA}$ (220VAC), $< 4000\text{mA}$ (DC24V)		
steady state	$< 100\text{ W}$		
Reverse	have		
Overvoltage	have		
communication	UART@RS485 (anti-control pan-tilt and camera)		
protocol	PELCO-D/P		
Java runtime	Supports WIN32, X 64, L INUX		
video mode	Supports two streams: one video stream and one temperature stream		
<b>enviromental parameter</b>			
working	$-40^{\circ}\text{C} \sim 60^{\circ}\text{C}$		
Storage	$-50^{\circ}\text{C} \sim 70^{\circ}\text{C}$		
Resistant to	$5^{\circ}\text{C}/\text{min}$ ( $-40^{\circ}\text{C} \sim 60^{\circ}\text{C}$ )		
vibration	4.3g, x, y, z axis for 2 hours each		
shock resistance	Acceleration 30g, half sine wave, pulse width 6ms, and three impacts in the installation direction		
humidity	$\leq 95\%$ (non-condensable)		
<b>physical characteristics</b>			

outline	498.0mm× 295.0mm× 377.5 mm
weight	< 40 k g
mounting hole	6-ø6.5 through holes

### 3 Electrical interface

This section introduces the user interface definition of the dual-light explosion-proof online temperature detection system. The external output interface mainly provides 2 PIN SH connector, RJ45 connector and 3 PIN SH connector.

#### 3.1 Interface diagram

There are three kinds of connectors for external output, namely 2 PIN SH connector, RJ45 connector and 5PIN SH connector. The interface diagram is shown in the following figure.

- 2 PIN SH connector provides a 24V power interface.
- 2 PIN SH Connector provides RS485 communication interface.
- The RJ45 connector provides network digital video output.

#### 3.2 Interface definition

There are three kinds of external user interfaces: 2 PIN SH connector, RJ45 connector and 5PIN SH connector. Among them, RJ45 connector is the standard definition, the signal definition of 2PIN SH connector is shown in Table 1, and the signal definition of 2PIN SH RS485 connector is shown in Table 2.

Table 1 Signal definition of 2PIN SH connector

Pin	Signal Name	Function	Description
1	VCC_IN	Power	5V~12V Input
2	DGND	Power	Digital Ground

Table 2 Signal definition of 2PIN SH RS485 connector

Pin	Signal Name	Function	Description
1	D+	C ommunication	RS485 D+
2	D-	C ommunication	RS485 D-

## 4 Communication interface protocol

### 4.1 physical interface

Communication interface: UART@ RS 485.

Note: For 16-bit data, the low byte is in front and the high byte is in the back.

## 4.2 Communication format

Port rate: 9600bps (default state)

Start position: 1bit

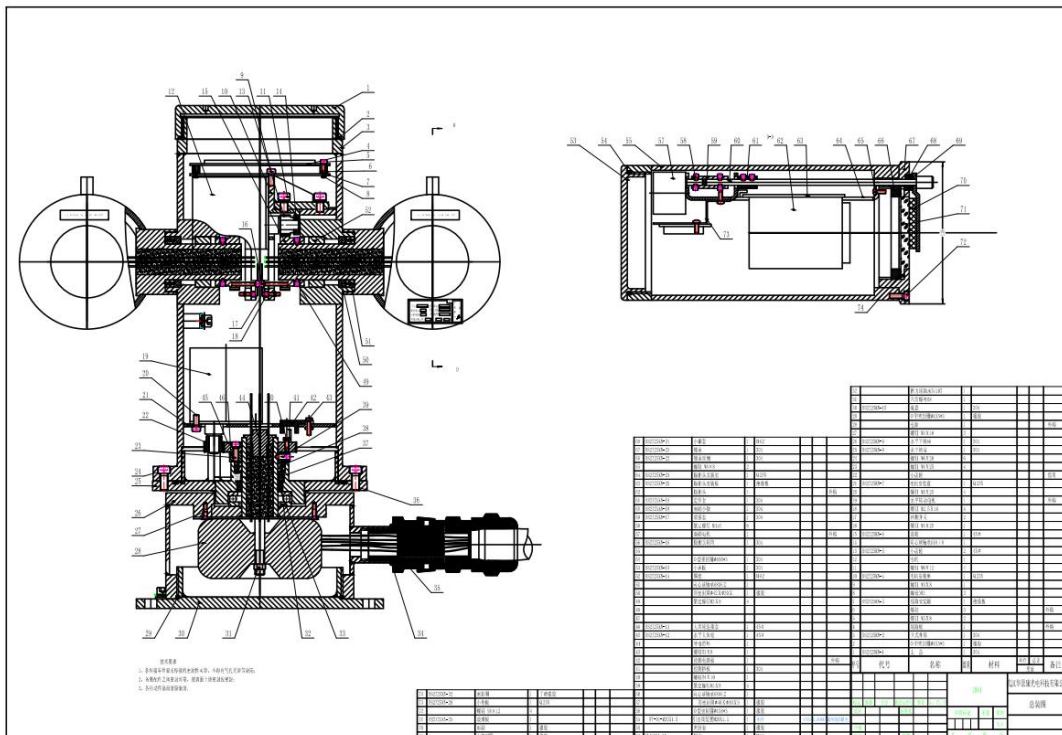
Data bits: 8bit

check bit:NONE

Stop bit: 1bit

## 5 mechanical interface

### 5.1 Overall machine structure size



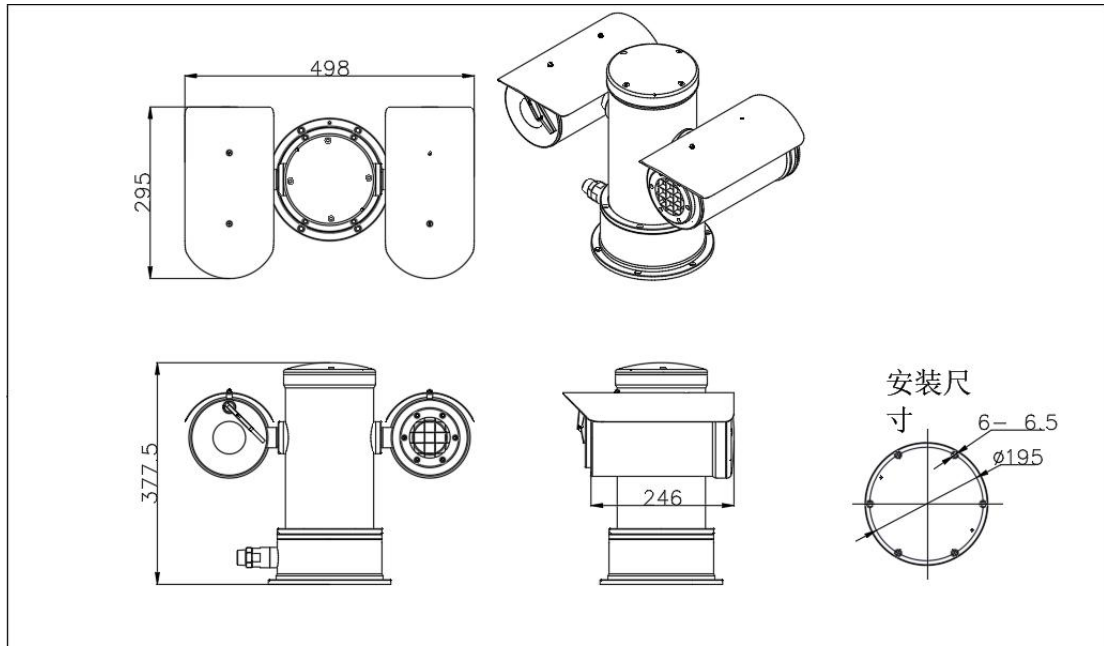


Figure 5 Structural dimensions



# 6 conformity certificate of protection [of electrical apparatus for explosive atmospheres]

 国家防爆	编号: CNEx21.0098X	
	<h2>防爆合格证</h2>	
	制造单位 武汉华景康光电科技有限公司 (湖北省武汉市东湖新技术开发区高新四路葛洲坝太阳城第10幢3层1号)	
	产品名称 双光防爆在线测温监测系统	
	型号规格 BS2Z25KN 220VAC	
	防爆标志 Ex d IIC T6 Gb/Ex tD A21 IP68 T80°C	
	产品标准 Q/HJK 01-2020	
	总装图号 BS-01	
	经对上述产品图样及技术文件的审查和样品检验,确认符合下列标准: GB3836.1-2010《爆炸性环境 第1部分:设备 通用要求》 GB3836.2-2010《爆炸性环境 第2部分:由隔爆外壳“d”保护的设备》 GB12476.1-2013《可燃性粉尘环境用电气设备 第1部分:通用要求》 GB12476.5-2013《可燃性粉尘环境用电气设备 第5部分:外壳保护型“tD”》	
	记事: 1、防护等级: IP68(1.2m/45min)。 2、使用环境温度: -40°C~+60°C。 3、本产品电缆引入装置为已取得防爆合格证,防爆标志为 Ex d IIC Gb/Ex tD A21 IP68 的防爆电缆填料函,使用时按其使用说明书规定对防爆电缆填料函进行填料密封。	
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