HIRDA-HT
High temperature resistant infrared thermal imaging temperature detection and analysis system specification

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1 System Introduction

HIRDA-HT High temperature infrared thermal imaging temperature detection and analysis system is a special infrared thermal imaging product for use in high temperature environment. The system is mainly composed of infrared thermal imaging module, infrared lens, high temperature resistant metal shield, control box, image algorithm server and client software.

The system adopts full radiation temperature measurement technology, which can obtain multiple temperature values at the same time. Measuring temperature range up to 2500 ℃ ; Self-developed temperature measurement algorithm, high temperature measurement accuracy; Water-air cooled stainless steel shield design, IP66 protection grade, can work normally under high temperature environment of up to 500 ℃ ; The system software can realize target display in infrared heat map, thermal data collection, storage and analysis, high and low temperature alarm and positioning, temperature tracking and other functions.

This product has been widely used in metallurgy, electric power, cement, glass and many other industries of high temperature furnace temperature monitoring.

The product field application diagram is shown in Figure 1.

Figure 1 Product application of HIRDA-HT system

2 System Features

- Water-cooled high temperature resistant design, withstand 500 ℃ ambient temperature in the maximum;

- High protection level, protection level up to IP66;
- automatic window purging, no need to manually clean the window regularly;
- does not depend on system platform, can directly log in to the web page to access the image and configure, can directly output alarm signal to PLC or alarm;
- Support onvif protocol;
- Electric/auto focus, adjust focus any time through the software;
- Temperature range can be customized, the maximum support -40 ℃ to 2500℃;
- The temperature measurement accuracy is better than ±2℃ or ±2%;
- supports modbus and connection to the DCS for temperature data transmission.

2.1 System utility Requirements

2.3.1 Power

Field probe power supply 220VAC 50/60HZ power 50W/ set
Power supply for control room: 220VAC 50/60HZ power 300W

2.3.2 Cooling gas

Gas type: dry compressed air or nitrogen, instrument gas
Compressed air temperature: ≤35℃
Compressed air pressure: ≥ 0.4Mpa
Compressed air flow: 0.1-0.2m3/Min

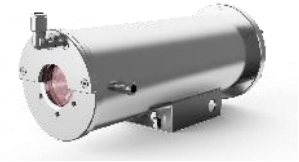
2.3.3 Cooling water

Cooling water temperature: ≤35℃
Cooling water pressure: 0.1-0.4Mpa
Cooling water flow: 0.2-0.6m3/h

3 Application Scenarios

Furnaces, materials and solution temperature collection in high temperature industries such as iron and steel smelting, non-ferrous metals, cement and glass And analysis.

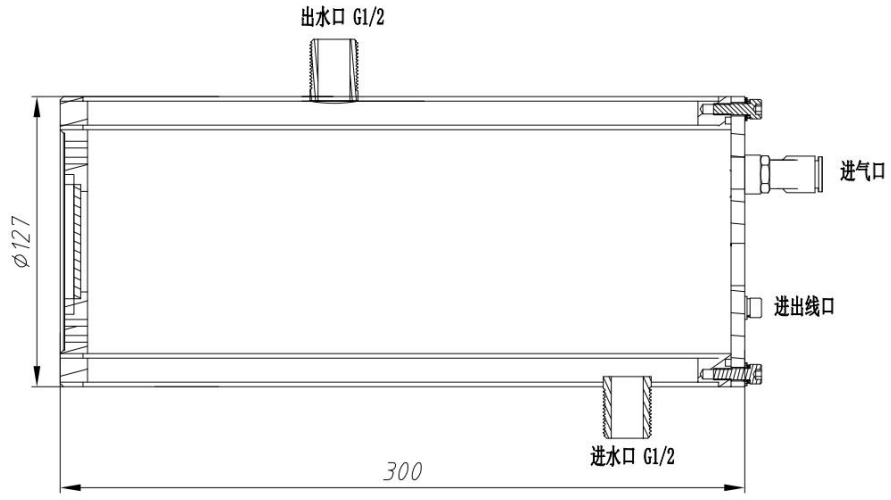
4 Main technical indicators

Model	PFCDG300-NSxxExx	
Product picture		
Infrared resolution	384×288	640×480
Infrared lens selection	4、8、13、25	8、19、25、35
Infrared field Angle	80°、45°、25°、15°	
Wavelength coverage	8～14μm	
Heatsensitivity (NETD)	≤50mk@30℃	
Frame frequency	25Hz	
Focus	Electric/automatic	
vision algorithm	Gamma correction and enhancement algorithm	
temperature measurement accuracy	±2℃ or ±2%	
Temperature range	-20℃ ~ 1600℃ (need to be segmented), can be extended to 2500℃	
Network video compression format	H.264/H.265	
Data type	H264、H265、16Bit raw temperature data	
Web standard	Gigabit network/Adaptive 100M/1000M	
Protocol support	IPv4/IPv6、TCP、UDP、NTP、HTTP、RTSP、RTP、ICMP、WebSocket、ONVIF	
Temperature output	Support analog 4--20ma, RS485, Modbus TCP/RTU	
External triggering	Supports RS485 level and TTL level	
Level of protection	IP66	
Size	Φ127mm×300mm	
Type of cooling	Water-air cooling/air cooling	
Installation mode	Equipped with PTZ support	
Weight	≤7Kg	
Operating temperature	-20℃～500℃	

5 Machine structure dimensions

The structure and dimensions of the whole machine are shown in the

following figure.



PSFCDG300-NS Structural dimensional drawing

6 Installing Accessories

- Air filter
- 2 5 meter stainless steel air pipes and 2 5 meter stainless steel water pipes

  One 10m high temperature cable
- adjustable head support
- The assembly and pre-commissioning before installation have been completed before delivery

7 System Software

The system client software interface is shown in the following figure.

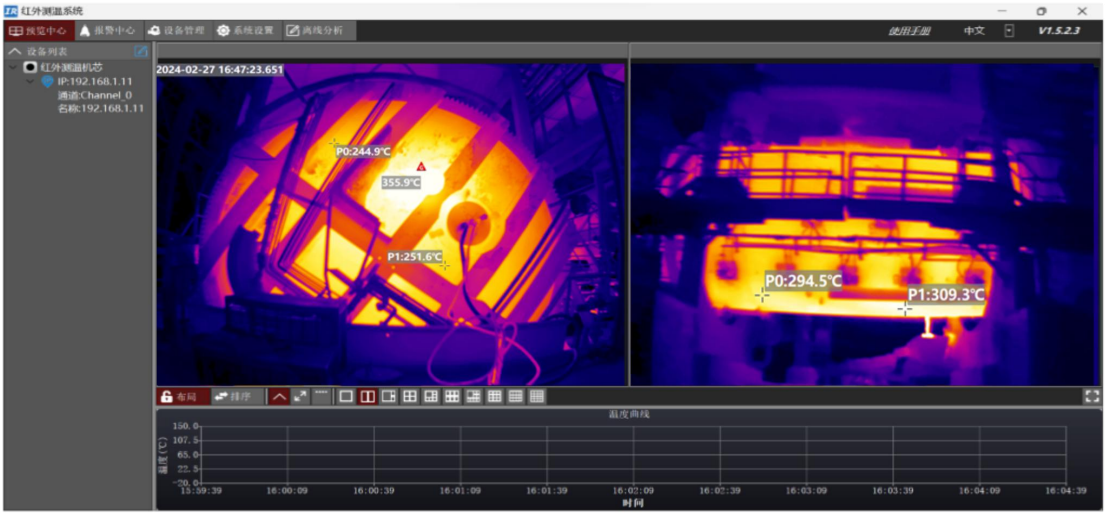
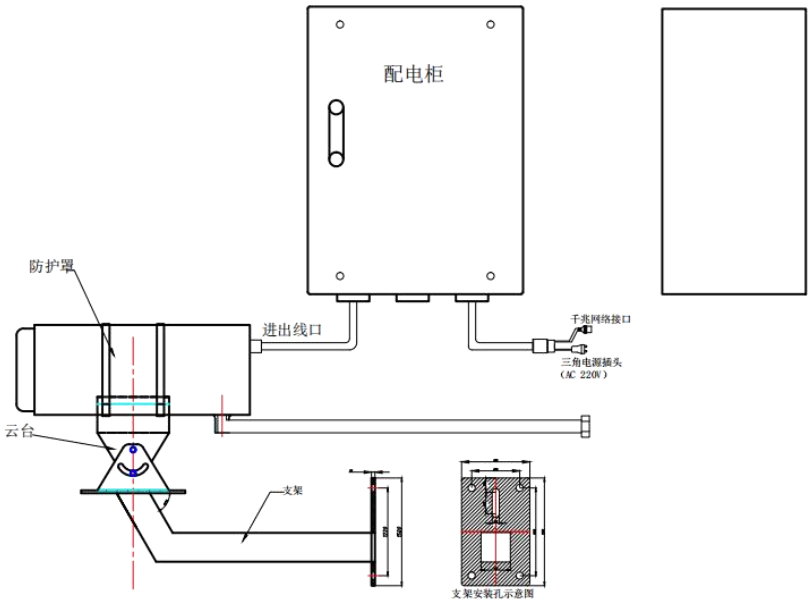


Figure 3 System software interface

The basic functions of the software are as follows:

- real-time video display: Real-time display of full radiation heat map and high-definition visible light video, you can view the temperature at any position in the infrared heat map, record, take photos, and analyze abnormal conditions.
- Temperature tracking: Automatically analyze the temperature upward trend of the entire infrared heat map or a specific area to find hidden areas in advance.
- Data capture: thermal imaging data can be periodically collected for further analysis.
- High temperature trigger shooting and alarm: When the temperature is abnormal,it can be found in time, then trigger the alarm, the software background will take infrared pictures and visible pictures during the incident.
- Fault self-diagnosis: When the terminal equipment is downtime, the system automatically alarms.
- User-defined alarm threshold and level: The system can define multiple different alarm thresholds and levels to assist the staff to assess the urgency and development of hidden dangers.

8 Installation diagram


配电柜
防护罩
进出线口
千兆网络接口
三角电源插头
（AC 220V）
云台
支架
支架安装孔示意图