



High Temperature Industrial CCTV Solution for Furnace

1. Description:



Furnace High Temperature Industrial CCTV Solution is used for Special high-temperature environments CCTV Solution. It can be widely used in steel Iron factory heating furnace, rotary kiln head, grate cooler, glass factory smelting furnace, etc.

The equipment can place the camera lens at the entrance of the furnace wall to observe the operation of the workpiece in the furnace.

Main Features:

- Air cooling & water cooling
- Two-level automatic filtering method
- Self-locking chain transmission mechanism
- IP 1080P WDR Camera
- Sapphire high temperature resistant pinhole lens
- Automatic exit protection device
- On-site or central control by DCS
- Temperature control digital display
- PLC Programmable control
- Exit fault indication

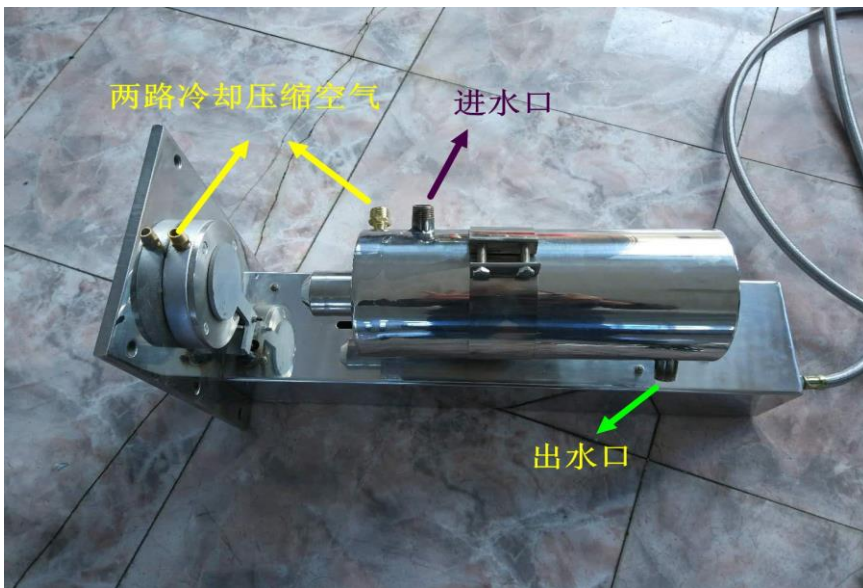
2. Observation range

- In order to expand the observation range as much as possible, design the lens reach into the furnace for observation

- In order to reduce the heat dissipation of the kiln and save energy, open a 100mm hole in the furnace wall to minimize the size of the furnace wall opening.

3. Cooling method

- This equipment adopts air cooling and water cooling methods.
- In order to reduce the radiated heat from the furnace to the equipment, a 1mm pinhole lens is used, which greatly reduces the radiation area.
- A double-layer protective cover is used to protect the lens. Circulating water is passed into the interlayer for cooling, and the lens is cooled by a line of gas. And blowing the cooling air out from the front end of the protective cover can suppress the flame in the kiln and block dust.
- The installation base plate is cooled by compressed air to protect the equipment from normal use for a long time.
- After the equipment exits, the windshield door automatically closes to prevent dust and heat from leaking due to positive pressure in the furnace.



4. Gas filtration

This equipment adopts two-level filtration. The first-level filtration mainly removes water, oil, dust, etc.; the second-level filtration has automatic water removal, automatic oil removal, precision filtration, and precision oil removal, making maintenance simple and convenient.

5. Transfer method

The transmission part adopts high-precision metal guide rail transmission, and also uses a self-locking motor as power, which makes the extension and exit of the equipment smooth and reliable, while reducing the probe cover movement cycle (within 8 seconds).

6. Control circuit

The control system adopts PLC programmable control, which greatly improves the operability and reliability of the system. Users can freely program according to their own requirements to meet their needs.

7. Camera and lens selection

- In order to improve the quality of the image and expand the applicable range of its contrast, it is planned to use a Hikvision digital high-definition super dynamic range camera, and the camera has a 12V DC power supply, which is safer.
- Since the high temperature resistance of the lens is higher than that of the camera, it is more conducive to cooling if only the lens is extended into the furnace; and in order to improve the lens' ability to reflect changes in illumination in the furnace at any time, a high-temperature pinhole lens with automatic aperture is selected; the end face of the lens is made of sapphire. It can withstand high temperatures of 1000℃ and will not burn out the lens even in unexpected situations.

8. Temperature control digital display

In order to increase the intuitiveness of observation, the temperature control adopts digital display mode, and the upper and lower limits of temperature control can be preset to realize over-temperature alarm.

9. Specification:

Model	High Temperature Industrial CCTV Solution for Furnace	
Main Feature	(1) Furnace wall installation peek type (2) Lightweight design and easy maintenance (3) High temperature resistant pinhole zoom lens (4) Made of stainless steel, corrosion-resistant and temperature-resistant (5) Central control power outage, gas outage, over-temperature fault alarm indication (need to add an operator)	
Work Temperature	Furnace temperature	≅ 1300℃
	Control System	≅ 70℃
Exit device	Automatic exit function	Yes
	Manual function	Yes
Control device	Alarm indication	Automatic alarm for power outage, gas outage and over-temperature
	Two levels of control	Can realize central control alarm and automatic reaching in and out

		operation
Power supply	Voltage	AC220V±10%
	Power supply frequency	50Hz
Air supply requirements	Compressed air inlet pressure	0.3~0.6MPa
	Compressed air inlet temperature	≦ 35℃
	Compressed air minimum flow	0.2~0.3M ³ /min
Camera	Resolution	2.0MP 1080P
	WDR	Support
	signal-to-noise ratio	50db
View angle	Angle	81°
Circulating cooling water requirements	Flow	12M ³ /h
	Pressure	0.2~0.4MPa
Installation distance	The maximum distance from the control device to the manual exit device is 10M.	

10. Camera Specification:

super starlight-level wide dynamic range shotgun network camera

It supports 3 deep intelligence functions: face detection, perimeter arming, and people counting

Face detection: supports face detection and capture, supports capture optimization, and automatically screens out the images with the best capture quality

Perimeter arming: support cross-border detection, enter the area, leave the area, regional invasion 4 arming modes, can classify the detection of motor vehicles, non-motor vehicles, pedestrian targets and arming personnel statistics: support crowd statistics and personnel density detection, to adapt to the needs of a variety of scenarios

The high-sensitivity sensor is used to meet the needs of ultra-starlight monitoring

120dB optical wide dynamic range to meet the monitoring requirements of high-contrast scenes

Advanced H.265 and SVC scalable video coding algorithms provide higher compression efficiency and flexible applications

The three-stream package capability meets the requirements of real-time streaming and storage streaming with different bandwidths and frame rates

Area Enhancement (ROI) to improve image quality in key areas in low-bandwidth network environments

UNP technology is supported to effectively solve the problem of NAT traversal in public and private networks

AC24V/DC12V/PoE power supply modes are provided to meet the requirements of reliable power supply in different scenarios

sensor	description
Sensor target surface	1/2.8"

Highest resolution	1920*1080
lens	description
Automatic aperture control interface	DC-IRIS; P-IRIS
image	description
shutter	Automatic/manual, shutter range: 1~1/100000s
Day and night mode	Automatic;During the day;;Night;Switching control
WDR	Optical WDR 120dB
Minimum illumination	0.0005lux (F1.2, AGC ON, color) 0.0001lux(F1.2, AGC ON, black and white).
Glare suppression	In the tank
Fog penetration	Adaptive fogging
Video	description
Video encoding format	Super 265; H.265; H.264; MJPEG
Video parameters	Main stream: 1920*1080, 1280*720, 720*576, 640*360; Auxiliary code stream: 1280*720,720*576,640*360; Third stream: 720 * 576, 704 * 288, 640 * 360, 352 * 288
Maximum frame rate	30 frames
The maximum number of live flow paths	No. 20
Video streaming	Three-yard stream
Video bitrate	128Kbps~16384Kbps
Capture	manual capture;Timed capture;Cycle capture
Privacy masking style	Black style
Number of areas covered by privacy	4 pcs
Area Enhancement (ROI).	8 areas
Number of OSDs	8 lines, each line OSD up to 60 characters
OSD type	Customization;time information;preset positions;Serial OSD; /b17>people counting;Network port OSD; /b111>Picture OSD; /b113>ambient volume;Latitude and longitude coordinates of the device
audio	description
Audio encoding format	G.711A、 G.711U
Audio sampling frequency	G.711A/G.711U: 8KHz; G.711A/G.711U: 16KHz
intelligent	description
Face detection	Up to 8 face targets can be detected at the same time; It supports three optimization modes of face capture: effect priority, speed priority, and cycle optimization, and supports face angle filtering; Support face scratching
Perimeter arming	Support cross-border detection, area intrusion, entering the area, and leaving the area; Support motor vehicles, non-motor vehicles, and pedestrian target classification, detection, capture, and arming
People counting	Crowd statistics: support the statistics of the total number of people, the number of people entering and leaving, support the three-level alarm of the number of stranded people, and support the number of people to be cleared; Personnel density detection: Support three-level alarm of personnel density
Behavioral analysis	Gathering of people;Parking detection;Loitering detection;Move fast
Scene detection	Removal of items;Items left behind;Scene changes
Smart function	description

Ordinary events	motion detection;occlusion detection;sound detection;Alarm input;Alarm output
Internet	description
Network protocols	L2TP; IPv4; ARP; TCP; UDP; DHCP; PPPoE; RTP; RTSP; DDNS; DNS; NTP; FTP; UPnP; HTTP; SNMP; SIP; 802.1X; HTTPS; RTCP; RTMP; IGMP; ICMP
Compatible access	ONVIF; GB/T 28181; IMOS; GAT 1400; API
Back-end storage	Dual-channel iSCSI data blocks are stored directly
Cache refill	Support SD card disconnection cache re-recording
interface	description
SD card interface	Micro SD slot*1, up to 256GB
Audio input	1 in
Audio output	1 out
Alarm input	2 in
Alarm output	1 out
Serial	RS485 (2-wire) half-duplex*1
Ethernet port	RJ45 10M/100M adaptive Ethernet electrical port
BNC	In the tank
Structure/working conditions	description
power supply	DC12V±25%; AC24V±25%; POE(IEEE802.3af)
Power protection	Overcurrent protection; Input short-circuit protection
Power connector	Phoenix terminals
Maximum power consumption	8W
earthing	Yes, with grounding screws
weight	0.38kg
Dimensions	152mm*71mm*65mm
Housing material	Cast aluminum
Waterproof and dustproof	Not supported
temperature	-20℃~60℃
humidity	5%~95%RH (no condensation.)

11. Lens

- Lens length: **100mm**
- View Angle: 81degree (diagonal)
- Light hole diameter: **Φ1.0mm**
- Lens port: **CS**
- With blue color filter
- Material: Stainless steel



- Focal length: 4-20mm

12. Project reference:





13. Equipment List:

List	Equipment	Unit	Quantity	Remarks
1	1080P ,2MP IP Camera	pcs	1	WDR, BLC etc feature
2	High temperature pinhole lens	pcs	1	Auto iris, maual varifocal,100mm lens
3	Water-cooled air-cooled protective housing	set	1	Water cooling housing
4	Installation bracket	set	1	Furnace body connection bracket
5	Furnace wall protection device	set	1	Furnace high temperature protection system
6	Furnace door transmission device	set	1	Reach in and out protection system
7	Embedded cooling jacket	set	1	Equipment mounting base
8	Anti-backfire device	pcs	1	exits and shuts down control equipment to prevent flames in the furnace
9	PLC	pcs	1	Control module of equipment advance and retreat
10	Water separator	pcs	1	filter
11	Pressure Sensor	pcs	1	Measure cooling gas pressure
12	Temperature Controller	pcs	1	Thermometry
13	Cable duct	set	1	accessories
14	Gas pipeline	set	1	accessories
15	Water pipeline	set	1	accessories