forede®

AUTOMATIC FIRE WATER MONITOR/CANNON

ZDMS 0.6/5S ZDMS 0.8/10S

QUANZHOU FOREDE FIREFIGHTING EQUIPMENT CO.,LTD.

www.forede.com

CONTENTS

PRODUCT SAFETY INFORMATION

- All personnel who may be expected to operate this equipment must be thoroughly trained in its safe and proper use.
- Before flowing water from this device, check that all personnel (fire service and civilian) are clear of the stream path. Also confirm stream direction will not cause avoidable property damage.
- Become thoroughly familiar with the hydraulic characteristics of this equipment, as well as the pumping system used to supply it.
- Whenever possible, this equipment should be operated from remote location to avoid exposing personnel to dangerous fire conditions.
- Always open and close valves slowly to avoid water hammer.
- After each use, and on a scheduled basis, inspect equipment per instructions in the maintenance section.
- Keep fingers and hands clear of moving parts.
- Disconnect power before servicing and electric valve or electric valve controller.

! WARNING
Do not attempt to disconnect or work on any electrical equipment in this system unless power is removed or the area is known to be non-hazardous.
! ATTN
Before installing and operating this equipment, read this manual thoroughly. Proper installation is essential to safe operation.

STSTEM INTRODUCTION

ZDMS Series Automatic Tracking And Positioning Fire Water Monitor/Cannon is an organic combination of infrared / ultraviolet sensing technology, signal processing technology, communication control technology, computer technology and mechanical transmission technology.

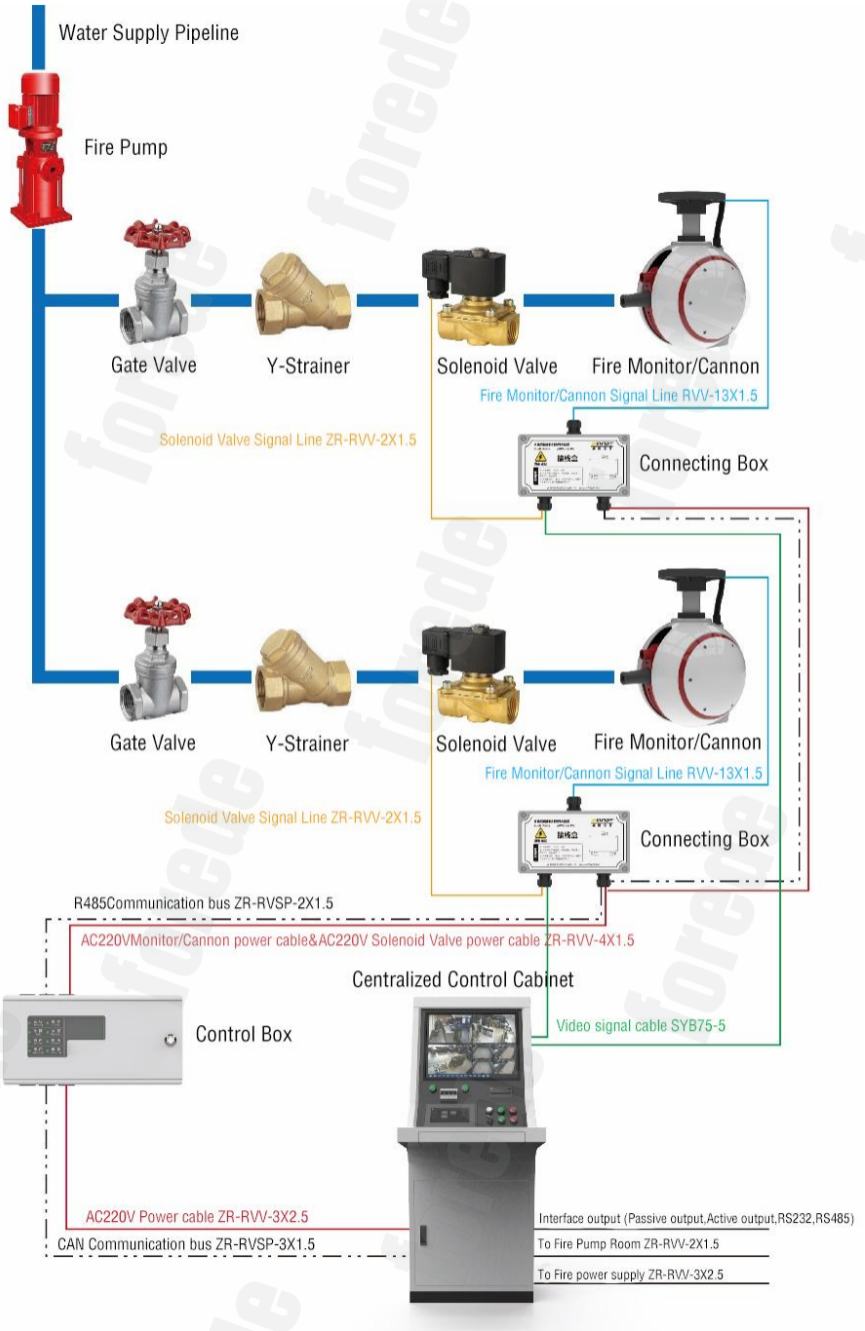
Once a fire occurs, the device starts immediately. Two-dimensional scanning of the fire source in the horizontal and vertical directions is performed. After determining the two directions of the fire source, the central controller issues a command and sends out a fire alarm signal. At the same time, the water pump, valve and device are started Fire the water by aiming at the fire source. After the fire source is extinguished, the central controller will issue a command to stop the water spray. If there is a new fire source, the device will repeat the above process, and will return to the monitoring state after all the fire sources are extinguished.

The water injection form of this device is cylindrical water injection, with long range, wide protection range, and very powerful fire extinguishing ability. It can be widely used in indoor buildings with large area and large space, such as: station waiting room, airport, passenger terminal, sports hall, Convention and exhibition center, movie theater, dance hall, exhibition hall, shopping mall, etc.

COMPONENT LIST

IMAGE	NAME	MODEL	DESCRIPTION	REMARK
	ZDMS Automatic Tracking And Positioning Fire Water Monitor /Cannon	ZDMS 0.6/5S ZDMS 0.8/10S	Fire detection, positioning and fire extinguishing	Standard
	Solenoid Valve (DN50)	DCF-SX(DN50)	Turn on and off water flow	Standard
	Connecting Box	JXH-SX-5	Wiring terminal for easy wiring	Standard
	Control Box	XCKZ-SX	Installed in the protection site, used to receive and send relevant instructions, control devices and solenoid valves. Controllable 4 devices	Standard
	Centralized Control Cabinet	YCKZ-SX	Security in the central control room, remotely monitor the status of the protection site and control any connected device. Up to 240 units can be connected control box	Optional
	Y-Strainer	GLQ-SX	Installed in front of solenoid valve	Optional

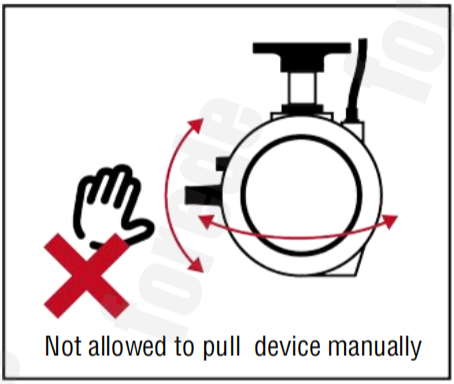
SYSTEM WIRING



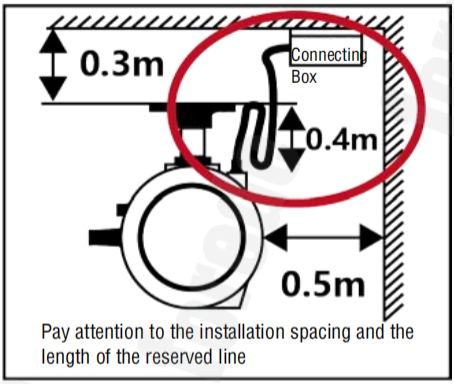
INSTALLATION

DEVICE INSTALLATION:

! WARNING



Not allowed to pull device manually

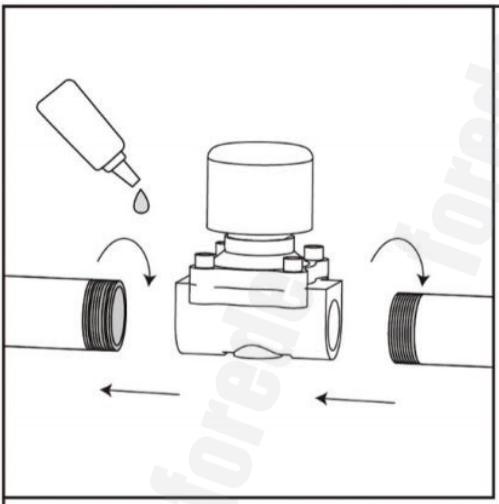


Pay attention to the installation spacing and the length of the reserved line

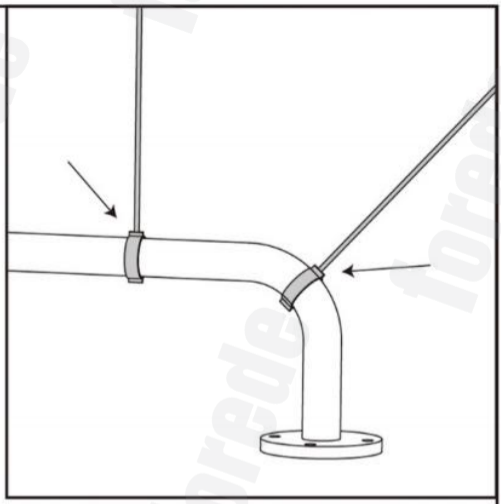
- When installing, it is forbidden to directly rotate the device shell or forcefully pull the water nozzle to avoid damage to the gear transmission structure and the motor.
- The installation point of the device must not have any obstacles within 0.5 meters in diameter, so as not to affect the rotation of the device body; the horizontal direction of the flange installation surface of the device and the ceiling or beam should be no less than 0.3 meters clearance.
- The fixed position of the Connecting box must ensure that the cable of the device is away from the flange surface of the device The length is more than 0.4 meters, so as to ensure that the device does not tear the cable when rotating 360 °.

! ATTN

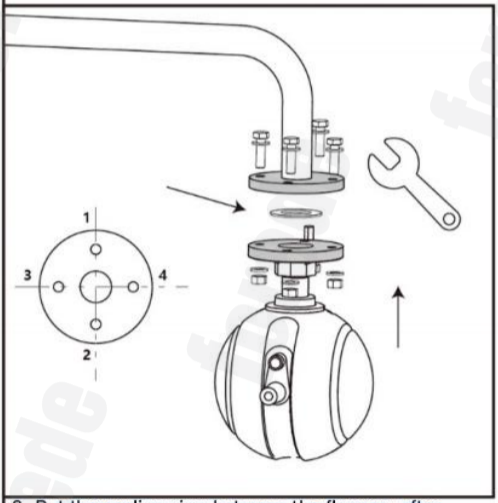
- The device itself has a certain weight, and the load-bearing capacity of the pipe network at the installation point must be considered during installation.
- The device should be installed after the pipeline is installed, after flushing and pressure testing.
- The pipeline connected to the flange of the device should be vertically downward, to ensure that the nozzle is horizontal after the device is installed.
- The flange plane of the pipeline connected to the flange of the device must be level to prevent tilting.
- After installation, the direction of the device head should be away from the protection range.
- Handle gently when installing to prevent impact.



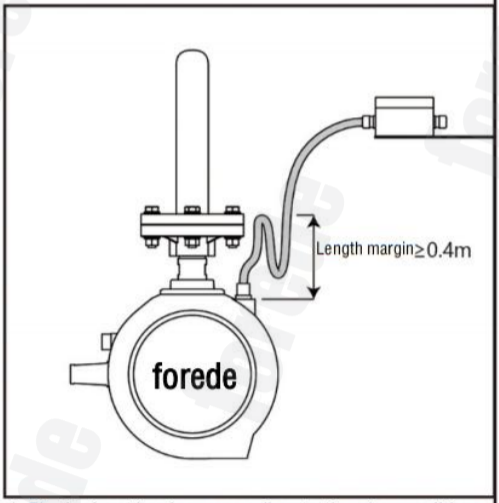
1. Apply sealant to the water pipe thread, screw the solenoid valve clockwise in, then apply sealant to the other end water pipe thread and screw into the solenoid valve. Pay attention to make the solenoid valve coil face up, and install it as horizontally as possible;



2. Install the fixed bracket, the illustrated bracket installation is for reference only. Due to the different installation environment, the fixing brackets are different installation style, please choose according to your site the most suitable installation style;



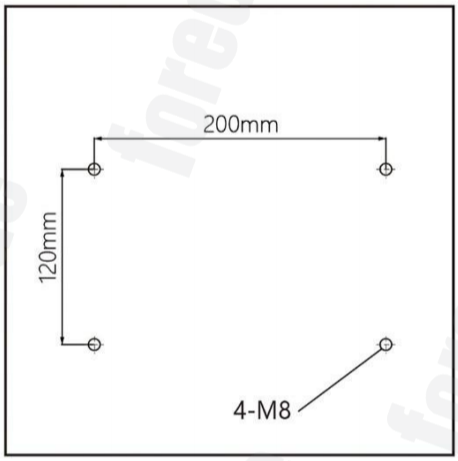
3. Put the sealing ring between the flanges, after alignment and installation insert the M16 bolt (with flat washer) on the other side put on the flat washer, screw on the nut, pre-tighten, repeat the installation The remaining 3 bolts are tightened diagonally in the order shown in the figure;



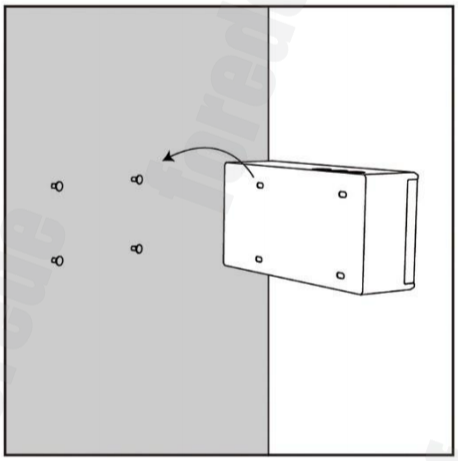
4. Fix the junction box according to the site conditions to ensure the fire monitor lead the cable away from the length of the flange surface of the fire monitor enough 0.4 meters above, to avoid winding when the fire monitor rotates.

CONTROL BOX INSTALLATION:

! ATTN
■ It is recommended to install the control box on the site near the wall and install it near the device. The action of the device can be clearly observed, and it is close to the exit or the place that is easy to evacuate.
■ The installation height of the on-site area control box is 1.5 meters above the ground of the fire protection zone.



Install four M8 expansion bolts on the wall, the installation dimensions are as shown.



There are 4 holes on the back of the control box. Fix the control box with screws or hang it on the wall

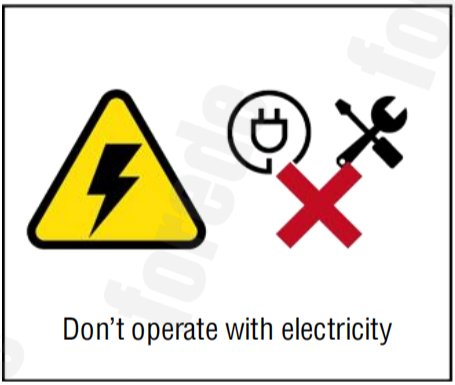
CENTRALIZED CONTROL CABINET INSTALLATION:

The Centralized Control Cabinet is installed and placed in the central control room to centrally control multiple on-site control boxes. The main structure is a cabinet with access line at the bottom.

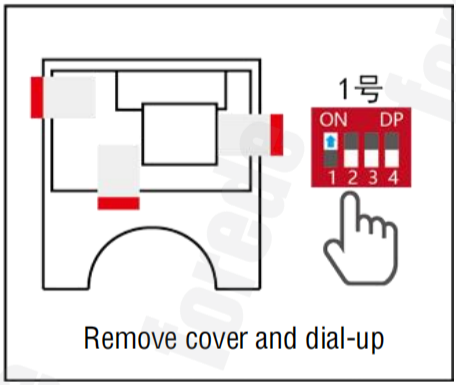
WIRING STEP

CONNECTING BOX WIRING:

! WARNING



Don't operate with electricity



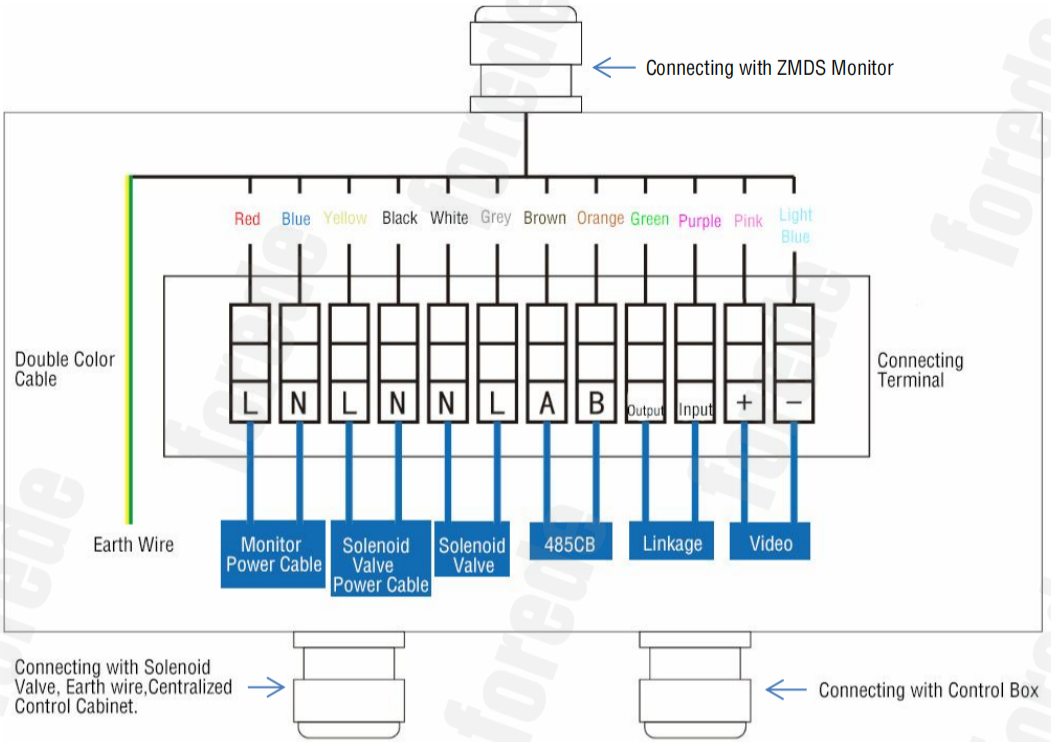
Remove cover and dial-up

- The Connecting box contains 220V high voltage and strong electricity, and with electricity operation is prohibited during installation.
- Before wiring, you must tear off the sticker on the bottom protective cover of the device, remove the protective cover, and then dial the bottom dial switch according to the dial code on the monitor body.

! ATTN

- The 485 control cable of the Connecting box uses twisted-pair shielded cable. When connecting each wire end, you must strictly connect the wire according to the attached cable label. The shielding layer must be connected. This cable is a weak current cable and cannot be laid in the same pipe as the power line. When using a wire channel, a separate wire channel must be used.
- When wiring, make sure that the length of the cable of the device is sufficient to leave the flange surface of the device 0.4 meters or more, so that the device does not tear the cable when rotating 360 °.
- Keep the detection component of the device clean when wiring, and do not directly wipe the light-receiving surface of the detection component with your hands.
- When one area control box is connected to multiple Connecting boxes on site, between the Connecting box and the Connecting box 485 communication lines need to be connected hand in hand.
- The outgoing video cable must use copper core copper mesh, select SYB75-5 within 300 meters Cable, if more than 300 meters, you need to use optical fiber.

The wiring steps are as follows:



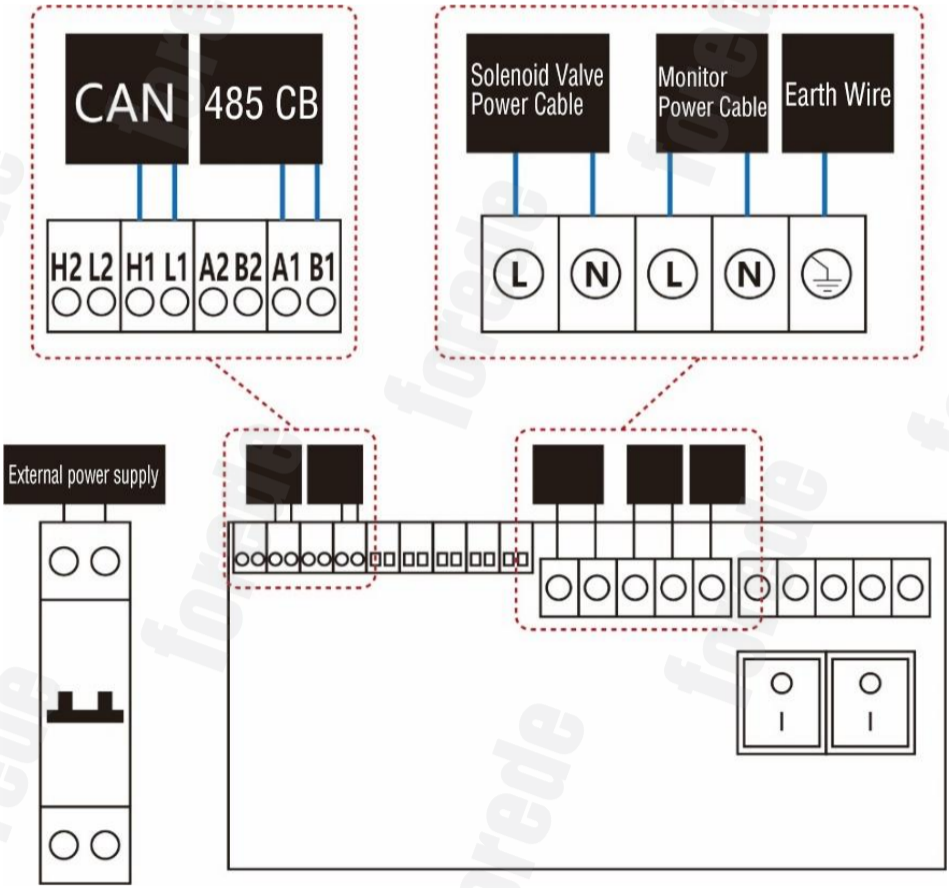
Wiring Diagram Of The 12-Bit Terminal Of Connecting Box

1. The device leads a cable into the connecting box, the wiring method is shown in the above figure;
2. The connecting box leads 3 cables into the control box, which are 485 communication line ZR- RVSP2 × 1.5 (shielded twisted pair), Monitor power cable ZR-RVV2 × 1.5 and solenoid valve power cable ZR-RVV2 × 1.5, the connection method is shown in the picture above;
3. A solenoid valve signal cable ZR-RVV2 × 1.5 leads to the solenoid valve from the connecting box, the wiring is shown in the above figure;
4. A video signal cable SYB75-5 is led out of the connecting box to the centralized control cabinet, the wiring is shown in the above figure;
5. Earth wire, the Double-color earth wire ZR-RVV1 × 1.5 that leads the device into the connecting box, then leads from the connecting box to the flange of the pipeline equipment, and can also be grounded through the internal circuit.

CONTROL BOX WIRING:

! ATTN
■ Same as the connecting box, the site area control box contains 220V high-voltage strong current, live operation is prohibited during installation.
■ When multiple area control boxes on site are connected to the centralized control cabinet, between the control box and the control box CAN industrial bus needs to be connected hand in hand.
■ The Earth wire must be grounded.

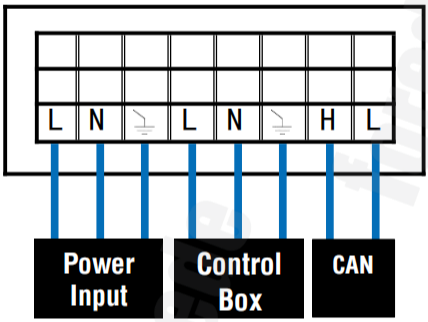
The wiring steps are as follows:



Wiring diagram of the air switch and wiring board of control box

1. Lead 3 cables into the connecting box from the control box, which are 485 communication cable ZR-RVSP2 × 1.5 (shielded twisted pair), Monitor power cable ZR-RVV2 × 1.5 and Solenoid Valve power cable ZR- RVV2 × 1.5, see schematic diagram for wiring method;
2. Two cables from the control box are connected to the centralized control cabinet, which are AC220V power cord ZR-RVV-3 × 2.5 (connect to other external power supply when no centralized control cabinet is installed) and CAN industrial bus ZR-RVSP3 × 1.5 , See wiring diagram for wiring method;
3. Grounding, the Earth wire and the shell must be effectively grounded.

CENTRALIZED CONTROL CABINET WIRING:



Wiring diagram of the terminal of Centralized Control Cabinet

1. The Centralized Control Cabinet is equipped with wiring terminals, introducing 1 cable AC220V power cable ZR-RVV-3 × 2.5, and leading 2 cables into the control box, which are AC220V power cable ZR-RVV-3 × 2.5 With CAN industrial bus ZR-RVSP3 × 1.5, the wiring is shown in the figure above;
2. Grounding, the Earth wire and the shell must be effectively grounded;
3. Connect the video signal cable from each device to a special video plug, and then insert the plug into the video input port of the recorder.

OPERATION INTRODUCTION

The device is mainly controlled by the control panel in the on-site area control box. The operation instructions are as follows:

1. The left side of the panel is the status indicator, the corresponding status is as follows:

Marking	Color	Description	Status
Working	Green	Control Box Working status	Lights on: Working; Lights off: Power off
Fault	Yellow	Fault or not	Lights on: Fault Occurs; Lights off: Normal
Silenced	Green	Alarm sound status	Lights on: No alarm; lights off: Alarm
Valve	Green	Working state of solenoid valve	Lights on: Working; Lights off: Power off
E-Stop	Red	E-Stop status	Lights on: Button pressed; Lights off: Button pops up
Fire Alarm	Red	Fire alarm report	Lights on: System Fire Alarm; lights out: No Fire Alarm
Valve On	Green	Valve status	Lights on: Valve open; Lights off: Valve closed
Pump On	Green	Pump status	Lights on: Pump open; Lights off: Pump closed

2. The upper middle of the panel is the LCD screen;
3. Direction buttons at the middle and bottom of the panel are up, down, left and right, which can control the rotation of the ZDMS monitor up and down and left and right and the up and down selection of the content of the LCD screen;

4. The right side of the panel is the control buttons, corresponding to the specific operations are as follows:

Marking	Description
Valve	Open or close solenoid valves
Pump	Opening and closing of pumps
Silenced	Eliminate alarm sounds
SS/Fog	Switching water straight and fog (not available for this ZDMS Model)
M/A	Switching Device Control Manual / Automatic
Testing	Testing Device
Verify	Confirmation of operations
Reset	Reset the device to standby
Locating	Automatic locating fire
Settings	Set the internal parameters of the device (used by the debugger)
Back	Return to the previous layer

*The Centralized Control Cabinet is mainly controlled by the touch screen on the host. For operation instructions, please refer to the manual of the Centralized Control Cabinet.

DEBUGGING METHOD

The debugging steps of the fire extinguishing system are as follows:

! ATTN
■ System debugging must be carried out after pressure test and flushing of water supply system. ■ System debugging must be carried out before the scaffolding is removed on site (except when the scaffolding is removed does not affect the location where the debugger contacts the system's high-altitude equipment or the site where the equipment is on the ground). ■ The water source and power supply of the device system must meet the debugging conditions. ■ Substances in the test area that may be damaged by water should be transferred or waterproofed, and flammable substances should be transferred to a safe area. ■ Due to the large jet flow and high impact force of the device, on-site drainage measures must be taken, safety measures for on-site participants and unpredictable incident handling plans must be done. ■ Electrical circuits and electrical equipment in the test area that are careless or must be damp due to water are not tested after the test can send electricity immediately, and it should be identified and processed by professional technical personnel before sending electricity.

1. Check In Advance

A. Check whether the system wiring is correct;
B. Ensure that the start pump line between the centralized control cabinet and the fire pump group is temporarily disconnected;
C. After confirming that the system wiring and wiring are normal, supply AC220V power to the system;
D. Test whether the basic functions of the buttons on the control box are normal.

2. Single Device Debugging

A. Single device manual function simulation debugging-set the device to manual state, use a lighter as a test fire source at close range to test whether all the detection parts of the device body work normally;
B. Single device automatic function simulation debugging-set the device to the automatic state, disconnect the power supply of the solenoid valve, and use the lighter as a test fire source for close-range simulation simulation debugging of the automatic positioning function;
C. Single device automatic positioning and debugging-After the simulation and debugging is normal, turn on the power of the solenoid valve, the central control host and the fire pump control cabinet are set to the automatic state, choose one in the protected area of the device use a standard oil pan with a diameter of Φ570mm and a height of 70mm, inject 40mm of clean water into the oil pan, and then add 500ml of car gasoline to ignite it as a fire. Debug the automatic positioning and aiming function of the device. After the positioning and aiming is normal, special attention should also be paid. Check whether the feedback of signal lights such as valve opening and pump starting after positioning is normal.

3. Monitoring And Monitoring Equipment Debugging
Mainly adjust the monitoring range, installation angle and picture quality of the surveillance camera.

4. System Linkage Programming And Fire Pump Linkage Debugging
A. After confirming that the communication between the host and the pump set is correct, use the induced fire inspection linkage program and the feedback records of the action feedback information and fire alarm information of each device;
B. Check the positioning jet accuracy of each device. If adjustment is needed, the data in the on-site area control box shall be modified accordingly by setting to ensure that each device will extinguish normally.

5. Multi-Device Debugging
A. Standard oil pan with test material diameter Φ570mm and height 70mm, filled with 40mm in the oil pan Clean water, then add 500ml car gasoline to ignite as a fire;
B. Set the test device, centralized control cabinet and fire pump control cabinet to automatic state;
C. Ignite a fire in the experimental oil pan;
D. The device system finds the fire source, starts scanning and sends out fire alarm information to the on-site area control box and centralized control cabinet;
E. Scanning and positioning of the fire source by the device is completed, the solenoid valve is automatically opened and the pump start information is sent to the centralized control cabinet;
F. Fire extinguisher fire extinguishing;
G. When the fire extinguishment is completed or the on-site fire alarm signal disappears, the device will continue to spray for 2-3 minutes (this time can be customized according to needs). After deep fire extinguishment, the valve will automatically close and reset. Turn off the pump, valve and reset the device in advance.

PARAMETTERS

MODEL	ZDMS 0.6/5S	ZDMS 0.8/10S
WORKING PRESSURE	0.6MPa	0.8MPa
FLOW RATE	5L	10L
JET RADIUS	34m	39m
MAX PROTECTION RADIUS	30m	35m
MONITORING RADIUS	50m	50m
JET MODE	Columnar	
MOUNTING HEIGHT	6~15m	
TARGETING TIME	≤30s	
HORIZONTAL ROTATIONAL ANGLE	> 360°	
VERTICAL ROTATIONAL ANGLE	-90°~+30°	
OPERATING VOLTAGE	AC220V	
CONTROL MODEL	On-Site Manual \ Remote Manual \ Automatic	
WAY OF COMMUNICATION	RS485	
POWER CONSUMPTION	Monitoring 1W, Sweeping 50W	
DETECTOR TYPE	Red ultraviolet compound	
INLET	DN50 (GB/T 9112~9124-2010; PN16)	
INSTALLATION	Hanging	
STANDARD	GB 25204-2010	

OUTLINE DIMENSION

MOVEMENT ANGLE