J&R TECHNOLOGY LTD

J&R TECHNOLOGY LTD

Add: 6A, Building A1, XingYi Industrial Park, Fuyong Town, Bao'an District, Shenzhen, China

Tel.: +86 - 0755 - 27322952

Email: sales@jrteck.com

www.jrteck.com

Shenzhen High-tech Enterprise

A Safe Voice in Global Communications

Preferred Manufacturer of Industrial Telephones

Our Team

2012

J&R was
founded in 2012

5000+

Cover an area of more than
5,000 square meters

90+

J&R has more than 90
proprietary products

80+

Achieve more than 80
patents and certificates

2 year

12 years of focus and rich experience
2-year warranty and excellent service

120+

Products and solutions are
exported to more than
120 countries around the world

Contents

J&R TECHNOLOGY

Company Profile

J&R TECHNOLOGY LTD, established in 2012 in Hong Kong, China, is a premier designer and manufacturer of industrial telephones and communication systems designed to optimize communication and safety in public safety, transportation, oil&gas industry and a wide range of sectors for daily work and critical moments.

We hold national high-tech enterprise and management certifications like ISO9001, ISO14001, and ISO45001.
Our products boast essential certifications such as CCC, CE, FCC, and RoHS for both domestic and international compliance.
We also hold safety certifications like CNEX, IECEX, ATEX, EAC, INMETRO, along with product patents and software copyrights.

With more than ten years of accumulation and precipitation, for outdoor, high humidity, high noise, hazardous areas and other special environmental characteristics, J&R have formed a full series of communication products and special solutions with waterproof, explosion-proof, anti-vandal, anti-noise capabilities based on analogue, VoIP and GSM communication technology.

Backed by a robust customer service system, we swiftly cater to diverse customer needs in 120+ countries.
Collaborating closely with global giants like ABB, Thales, Honeywell, ALSTOM, Siemens, SNCF, VINCI, CGN, CNOOC, Sinopec, ONGE, Petrobras,WANHUA, ZPMC, etc, we adhere to values "Customer first, integrity & altruism and embracing change".
J&R evolves alongside partners to meet industry demands while delivering exceptional customer value.

A Safe Voice in Global Communications

Devoted to providing satisfactory high-reliability industrial communication solutions to global customers
Create value for users and the industry and promote continuous progress
Continuously create maximum value for partners
Expand sustainable and ambitious development space for employees

Core Value

Customer first
Integrity & altruism
Embracing change

J&R TECHNOLOGY

CERTIFICATION

PARTNER

J&R TECHNOLOGY

A Safe Voice in Global Communications
www.jrteck.com
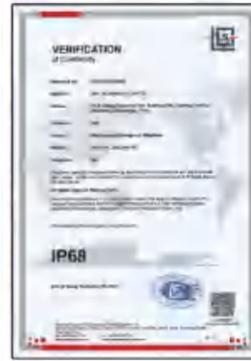
About Us

Overview of production workshops and offices

Production department: Dongguan sheet metal factory

Production department: Spanish customized seaside and lake area sos phones

Production department: Turkey Akkuyu nuclear power plant waterproof phone project

Production department: Panoramic view of production operations

Warmly Welcome

Friends from all over the world to visit our company

Our Team

Marketing and sales department

Research and development department

Immersive experience show room

APPLICATION AREAS

APPLICATION AREAS

Chemical industry

Offshore drilling platform

Oil

Metallurgy

Nuclear power plant

Wind power

Highway

Tunnel

Bridge

Subways

Railway

Airport

Utility Tunnel

Scenic spots

Shopping mall

Bank

School

Prison

Clean room

Pharmaceutical factory

Hospital

Ship

Crane

Mining

INTRODUCTION

SIP
Standard SIP 2.0 protocol to avoid compatibility issues

HD voice quality
High-definition voice quality

Anti-tampering
304 stainless steel call panel with tamper screws, anti-rust and anti-tampering

PoE power supply
No external power supply to avoid wiring problems

High protection level
Strictly comply with high standards of international protection level requirements, waterproof level up to IP67

Full duplex communication
Adopts the most advanced echo cancellation and background noise cancellation algorithms to ensure normal calls in high-noise environments

Anti-vandalism
Rugged case with IK10 rating

Operating temperature
-40 ℃~70℃, suitable for harsh environments

PRODUCTS

J&R TECHNOLOGY

SIP Dispatch Host

Industrial Switch

Product overview

The dispatching system is based on the integrated business management platform, through access to broadcast intercom terminals, network fire protection gateways, IP cameras, SIP voice gateways, SIP phones and other terminals and Gateway equipment, which can realize functions such as one-key hands-free calling, two-way intercom, group calling, one-way monitoring, shout deterrence, zone broadcasting, background music, security linkage, etc.
Applicable to banks, schools, scenic spots, mines, metallurgy, petrochemicals, electric power, ports, prisons, troops, sentry boxes, bayonets, expressways, rail transit, safe cities,smart building and other industries.

Product overview

Industrial switch, is an Ethernet transmission media conversion unit that exchanges short-distance twisted pair electrical signals and long-distance optical signals, it is also known as a Fiber Converter in many places.
Products are generally used when Ethernet cables cannot be covered and optical fibers must be used to extend transmission in the actual network environment of distance, and usually located in the access layer application of broadband metropolitan area network; Such as the high definition video image transmission of monitoring security engineering;
It has also played a huge role in helping to connect the last mile of fiber to the metropolitan area network and beyond.

Features

- Support mainstream speech coding standards such as G.711, G.729, G.723, H.263, H.264, etc.
- Openness: This scheduling system takes the standard SIP protocol as the core, supports third-party equipment access and interconnects with customers' existing IP communication systems.
- High-definition sound quality: Support standard broadband voice coding, combined with unique echo cancellation technology, compared with traditional PCMA coding, it can be called fidelity and high-definition sound quality.
- Efficient collaboration: By dividing multiple partitions and configuring multiple consoles, a single console can handle multiple service calls at the same time and support collaboration between consoles, improve the service efficiency of the monitoring center.
- Service integration: A single system can support multiple services such as voice help, video linkage, fire alarm, and access control, and is completed through a unified console interface surveillance and listening, business consultation, alarm help, etc.
- Scheduling operations: Supports call, banned, pick-up, monitoring, multicast, broadcast, conference and other functions.
- Call and Conversations: support dial-up call, incoming call answering, two-way intercom, hands-free call, monitoring and monitoring, intercom recording, multi-line switching, etc.
- Management functions: system management, group management, account management, authority management, hotline management.
- Operating temperature: -10°C to + 35°C; Storage temperature: -40°C to + 65°C.

Features

- Support IEEE802.3, 10-1000Basetx and 10-1000BasEFx protocols and cabling standards.
- Fiber interface support: multi-mode: 850nm, 1300nm, and single-mode 1300nm, 15nm.
- Supports broadcast storm suppression to enhance network security.
- Various specifications of single-mode optical transceivers to meet the requirements of various transmission distances.
- Low cost, high reliability, support for hot swap.
- It adopts universal optical network protocols, good compatibility, optional Huawei, ZTE, Huasan, Cisco and other private optical network protocol optical transceiver products.
- Ethernet electrical port: Supports 16 card transceivers.
- Ethernet optical port: single-power configuration.
- Adaptive program function: Aoto-MDI/MDI-X.
- Power input: 220VAC
- Humidity/Temperature: -20~+55°C / 5~95%

Desk Phone Series
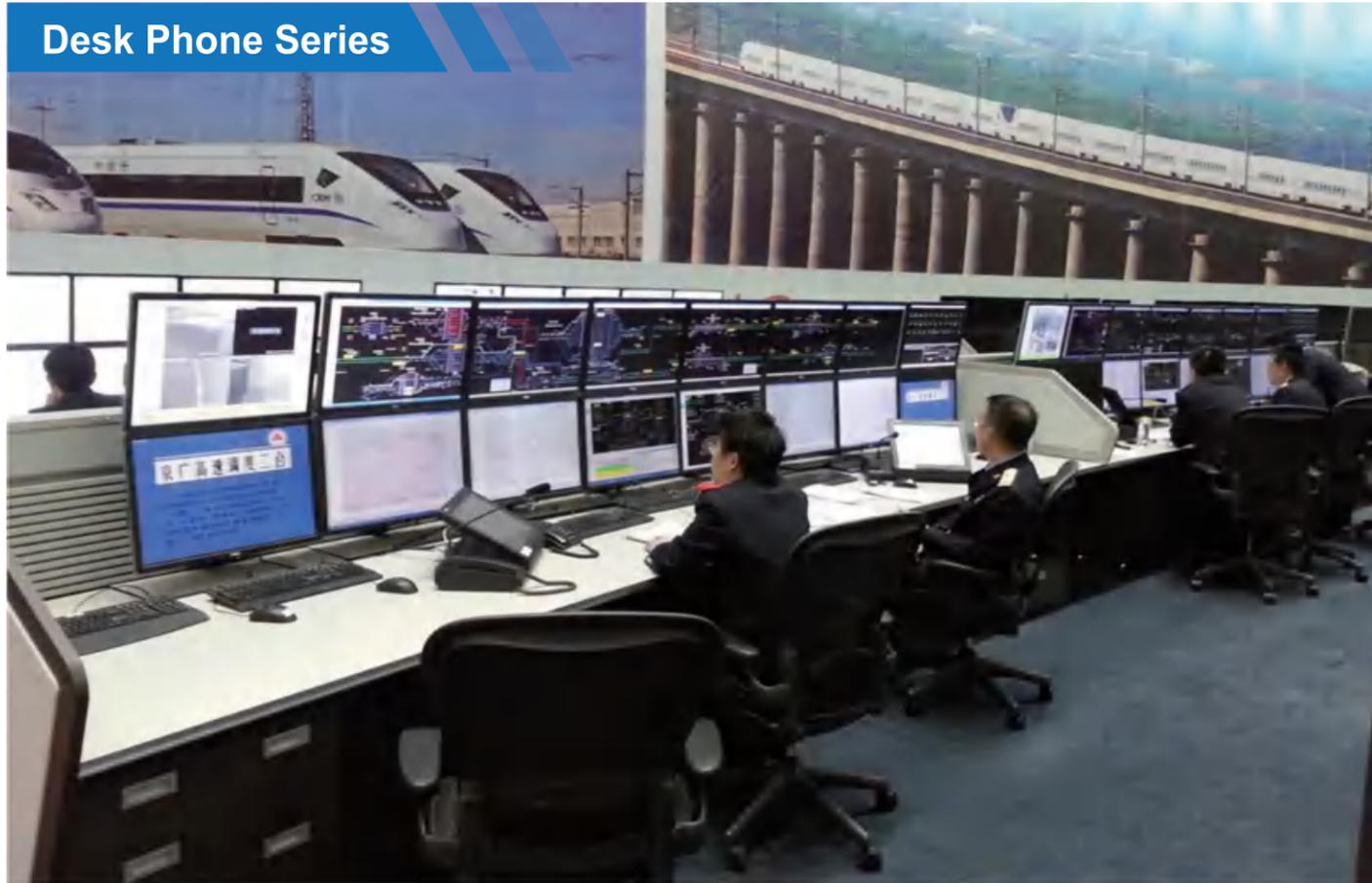
JR-MIC-IP microphone

- Standard SIP phone
- Robust steel body, corrosion resistant, damage resistant
- microphone with aviation connector
- 20-bit keypad, programmable multi-group speed dial number
- Electronic components are made of high and low temperature resistant industrial products, suitable for a variety of public environments
- Desktop, easy to install
- External power supply or PoE (SIP), RJ45 port for SIP connection
- Comply with CE, FCC, ROHS

JR401-GP
- Equipped with 2.8 inch color display screen
- Support G.722, Opus voice decoding, HD audio calls
- Support six-party voice conference

JR403-GP
- Can be configured speed dial number, dial extension directly and other functions
- Support 2.4G WIFI connection, and can be used as a WIFI hotspot
- Support gigabit ethernet, PoE power supply

JR404-AP
- Equipped with 8-inch color touch screen
- External 1080P HD camera, high-definition video call
- Built-in high-performance 2.4G WiFi and Bluetooth communication module, with communication, video, office, chat and other functions to meet your individual needs

J&R tunnel telephone combines emergency telephone cable broadcasting into one, and sets up a centralized emergency telephone cable broadcasting console at the tunnel management station to manage emergency calls inside and outside the tunnel and broadcast system monitoring and control. Emergency telephone console and wired broadcast console, with a key intercom design, dustproof, anti-noise design, waterproof, moisture-proof design, using the latest IP intercom, the network is flexible, advanced and stable, and meets the security and reasonable requirements of the tunnel.

The utility tunnel telephone host adopts the integrated chassis design of intercom, broadcast and alarm, and is a novel waterproof communication product designed with modern integrated circuits. Built-in handles, buttons, indicators, speakers and other accessories ensure the simplicity, beauty, reliability and convenience of construction and maintenance of the phone.
Wide-temperature optical network communication voice terminal that uses optical fiber as the medium for transmission and has a transmission distance of more than 20 kilometers. Integrated intercom calls, emergency broadcasts, communication transmission, a multi-functional communication substation host with integrated power supply, using the latest SIP communication, flexible networking, advanced and stable, and meeting the management needs of pipe corridors.

- JR-ETS-01 Tunnel phone
- IP65 programmable automatic dialing

- JR-ETS-01 Tunnel phone
- The flushing mounting can be customized size

- JR-ETS-01 Outside the tunnel
- Cold-rolled steel housing, Hands-free speed dial

- JR-MT-04/08/16 Pipe gallery main engine
- 4, 8, 16 port expansion card optional

- JR101-FK-CR-A pipe gallery auxiliary machine
- Analog phone IP65 protection rating

The JR506 is a sturdy and durable anti-violence phone. It adopts a sturdy and anti-vandal SMC fiberglass structure shell and an anti-disassembly design to resist violence, damage and climate effects, thereby extending the service life of the product and improving the reliability and stability of the product.
It can still be used normally in extreme temperature environments ranging from minus 40 to 70 degrees, and is especially suitable for installation in areas that require strong product protection capabilities, all electronic components are made of industrial-grade products that are resistant to high and low temperatures.
It is specially designed for internal communications in nuclear power plants, and can also be used in subway platforms, airports, campuses, banks, prisons, hospitals, large factories, theaters, libraries, museums and other places.

- Standard analog telephone
- SMC material shell, durable, anti-ultraviolet, anti-corrosion, environmental protection, long time do not fade
- Destruction-proof receiver, made of imported PC and ABS composites, stainless steel armored flexible cord
- Below 100dB noise environment, call clarity ≥95%
- Telephone line power supply, wall mounted

- IP66 protection standard
- Silicone backlit keypad, long service life
- Two quick buttons, one key quick dial
- Call flashing light
- Supporting external audible and visual alarm light alarm for incoming calls

J&R TECHNOLOGY

The necessity of explosion-proof communication equipment

There are many types of flammable and explosive gas/steam/dust environments in hazardous chemical workplaces in the petrochemical, chemical, and pharmaceutical industries. The process and equipment in production, storage, and transportation are complex and changeable, and there are many types of release sources, that cause explosion hazards. Factors are difficult to analyze and determine. Therefore, a high-quality explosion-proof communication product is essential.

Extensive Application

Inflammable and explosive hazardous environments such as petroleum, chemical plants, natural gas rigs, marine drilling platforms, military industries, powder workshops, pharmaceutical factories, wineries, and minor chemical factories.
Applicable to Zone 1 and 2 of explosive gas atmospheres and Zone 21 and 22 of combustible dust environments; suitable for explosive atmosphere gases of types IIA, IIB, and IIC; Suitable for T1-T6 group temperature environment.

JREX100
Explosion-proof Telephones

ATEX / IECEx   EAC   INMETRO

CE   FC   RoHS   IP67   IK10   CCC

Specification

Analogue Version

Power Supply	Analogue telephone line power supply
Power Voltage	24 VDC ~ 65 VDC
Power Current	20 mA DC ~ 100 mA DC
Ringing Volume	80dB (A) @ 1 meter, 110dB (A) @ 1 meter (for external loudspeakers)
Dialing Method	DTMF mode complies with ITU-T recommendation Q.23

SIP Version

Power Supply	PoE powered or 12V DC powered
Power Adaptor	100-240VAC 50～60Hz DC12V
Power	Idle 1.5W / Working 1.8W
SIP Protocol	SIP 2.0 (RFC3261)
Network Port Parameters	WAN Port: 10/100Base- T RJ-45 for LAN, Auto MDIX，LAN Port: 10/100Base- T RJ-45 for PC, Auto MDIX
Voice Coders	G.711 A/U, G.722 8000/16000, G.723, G.729
Communicate Mode	Full Duplex
Ringing Volume	90~95dB(A) @ 1 meter, 110dB(A) @ 1 meter (for external loudspeakers)

Operating Environment

Protection Type	IP66-IP67 protection leve
Operating Temperature	-40°C to +65°C
Storage Temperature	-40°C to +75°C

Packing Details

Unit Size：246 *339 *126 (mm)	N.W.: 6kg
Carton Size：200*300*440 (mm)	G.W.: 7kg
Packing Materials：pearl cotton, carton	

Applicable to Groups IIA, IIB, T1~T6 in Zone 1 and Zone 2 explosive gas environments where combustible dust and air are mixed (Zone 21 and Zone 22)

Temperature group: T1~T6

JREX106-A01

- Standard Analogue/SIP telephone
- Enclosure: aluminum alloy casting, strong and strong anti-destructive
- Handset: Special ABS engineering plastics, anti-knock, anti-pull, durable and anti-damage
- Waterproof and dustproof, IP66 protection level
- The main board adopts intrinsically safe circuit design and is encapsulated, double guarantee, safe and reliable
- **Explosion-proof mark:**

   II2G Ex eb ib mb IIC T6 Gb

   III2D Ex tb ib IIIC T85°C Db

   Certified for use in IIB/IIA gas hazardous zones

JREX106-A03-CB-Analog / JREX106-A03-CB-SIP

- Standard Analogue/SIP telephone
- Hotline, pick up the phone to automatically call the designated number, easy to use
- ATEX certified, intrinsically safe explosion-proof telephone

JREX106-A03-Analog / JREX106-A03-SIP

- Standard Analogue/SIP telephone
- Rubber waterproof keyboard with storage function, 0-9 keys can be programmed as speed dial keys.
- The telephone has strong stability and anti-interference ability, MTBF exceeds 50,000 hours.
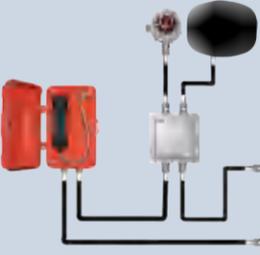
JREX106-A01-CB-HB-Analog / JREX106-A01-CB-HB-SIP

- Aluminum alloy die-casting enclosure, surface electrostatic spraying, strong impact resistance, IP66 protection
- Hotline, pick up the phone to automatically call the designated number, easy to use
- Support external explosion proof junction box, flashing light and loudspeaker, can be used for broadcasting and alarm signal

Explosion-proof Telephones

Applicable to Groups IIA, IIB, T1~T6 in Zone 1 and Zone 2 explosive gas environments where combustible dust and air are mixed (Zone 21 and Zone 22)

Temperature group: T1~T6

JREX106

- Standard Analogue/SIP telephone
- Full-duplex intercom, digital key dialing, call any terminal, can store 3 groups of speed dial numbers
- The main board adopts intrinsically safe circuit design and is encapsulated, double guarantee, safe and reliable
- Enclosure: high-quality SMC glass fiber reinforced plastic forged enclosure, with excellent electrical insulation performance, mechanical properties, thermal stability, chemical corrosion resistance, protection level IP66
- **Explosion-proof mark:**

  II2G Ex eb ib mb IIC T6 Gb

  III2D Ex tb ib IIIC T85°C Db

  Ex "ib" certification for intrinsic safety

JREX106-CB-Analog / JREX106-CB-SIP

- Standard Analogue / SIP telephone
- High-quality SMC fiberglass forged shell, chemical-resistant and corrosion-resistant, protection levelIP66
- Hotline, pick up the phone to automatically call the designated number, easy to use

JREX106-HB-Analog / JREX106-HB-SIP

- High-quality SMC fiberglass forged shell, chemical-resistant and corrosion-resistant, protection levelIP66
- 20 fully-sealed light-touch keys, with emergency call, hang up and redial keys
- Support external explosion proof junction box, flashing light and loudspeaker, can be used for broadcasting and alarm signal

Explosion proof Telephone (Flameproof type)

This product strictly implements GB3836.1-2010, GB3836.2-2010, GB3836.4-2010, GB4208 and GB12476.1-2013, GB12476.4-2010, GB12476.5-2013 and other specified standards.

It is used in places with IIB and IIC flammable gases, the ignition temperature groups are respectively Zone 1 and Zone 2 of T1-T6 groups, and places where flammable gases and explosive mixtures of steam and air form.

It is also applicable to the places where the ignition temperature group is T1-T6 and Zone 22 contains combustible dust mixture.

JREX106-FK-SS

- Certified for use in IIB/IIC gas hazardous areas
- Can be used in dust explosion proof environment
- **Explosion proof protection**

  Ex d ib IIC T6 Gb

  Ex tD A21 IP66 T80℃

  Zone division: Zone 1, Zone 2 and Zone 22

  Ex "d" protected

  Temperature division: T6, Ex "ib" certification for intrinsic safety

JREX106-2B-SS

- Standard Analogue/SIP Phone
- Two vandal resistant red/green buttons for emergency calls, hands-free operation
- Industrial-grade corrosion-resistant stainless steel enclosure, explosion proof, waterproof, dustproof, and anti destructive
- The enclosure has a grounding device, which is completely isolated from the internal circuit
- Has a certain electromagnetic shielding effect
- The built-in circuit of the telephone has strong anti-interference ability and the sound quality of the call is stable and clear

Explosion-proof Sounder and Beacon

Explosion proof sounder and beacon equipment

- External explosion proof junction box + LED flashing light + broadcasting loudspeaker
- The junction box is an aluminum alloy die-casting enclosure with high-voltage electrostatic spraying on the surface
- Used as a sign or signal alarm around the top of the building
- Can be installed in Zone 1 and Zone 2 of explosive hazardous areas
- And combustible dust environments Zone 21, Zone 22
- IIA, IIB, IIC gas group T1 ~ T6 temperature environments
- Steel pipe or hose routing is acceptable

JREX-HSA-A
Explosion proof loudspeaker

- SUS316 stainless steel + flame-retardant anti-UV ABS enclosure, IP66 protection level
- Input power 70~120V, rated power 35W,other power optional
- Applied in petroleum, chemical industry, natural gas, marine drilling work platform, military industry etc

JREX-LP-04
Explosion proof flashing light

- Equipped with LED, high brightness and long service life
- Tempered glass transparent cover, stainless steel exposed fasteners
- Can be used for signs or broadcast and alarm signals around the top of buildings

J&R TECHNOLOGY

JR100
Weatherproof Telephones

CE   FC   RoHS   IP67   IK10

Specification

Analogue Version	
Power Supply	Analogue telephone line power supply
Power Voltage	24 VDC ~ 65 VDC
Power Current	20 mA DC ~ 100 mA DC
Ringing Volume	80dB (A) @ 1 meter, 110dB (A) @ 1 meter (for external loudspeakers)
Dialing Method	DTMF mode complies with ITU-T recommendation Q.23

SIP Version	
Power Supply	PoE powered or 12V DC powered
Power Adaptor	100-240VAC 50～60Hz DC12V
Power	Idle 1.5W / Working 1.8W
SIP protocol	SIP 2.0 (RFC3261)
Network port parameters	WAN Port: 10/100Base- T RJ-45 for LAN, Auto MDIX，LAN Port: 10/100Base- T RJ-45 for PC, Auto MDIX
Voice Coders	G.711 A/U, G.722 8000/16000, G.723, G.729
Communicate Mode	Full Duplex
Ringing Volume	90~95dB(A) @ 1 meter, 110dB(A) @ 1 meter (for external loudspeakers)

4G Version	
Power Supply	12V DC
Power	Idle 0.3W / Working 1.5W
Communication Mode	4G
Ringing Volume	90~95dB(A) @ 1 meter
Programming Method	Remote programming via SMS
Frequency	AUX version：LTE-FDD B1/B2/B3/B4/B5/B7/B8/B28 , LTE-TDD B40 , WCDMA B1/B2/B4/B5/B8
	AFX version：LTE-FDD B2/B4/B5/B12/B13/B14/B66/B71 , WCDMA B2/B4/B5
	EUX version：LTE-FDD B1/B3/B7/B8/B20/B28A , LTE-TDD B38/B40/B41 , WCDMA B1/B8

Operating Environment	
Protection type	IP66-IP67 protection leve
Operating temperature	-40°C to +65°C
Storage temperature	-40°C to +75°C

Packing Details	
Unit Size：246 *339 *126 (mm)	N.W.: 6kg
Carton Size：200*300*440 (mm)	G.W.: 7kg
Packing Materials：pearl cotton, carton	

JR101-FK

- Support relay signal input and output interface
- The Analog version is powered by telephone line, the SIP version is powered by PoE or external 12V DC
- Support external 30W loudspeaker, and alarm light for incoming calls
- Connect to SIP server to realize Paging, group calling, recording and other functions
- Inductive coupler fitted as standard for hard of hearing
- Full rubber keypad with memory, 0-9 buttons can be programmed as speed dial button

JR103-FK-Analog
JR103-FK-SIP
JR103-FK-4G

- Standard Analog/SIP/4G Telephone
- Aluminum alloy die-casting enclosure, strong corrosion resistance, durable, IP66 protection
- Rubber waterproof keyboard with storage function, 0-9 keys can be programmed as speed dial keys

JR105-FK-Analog
JR105-FK-SIP
JR105-FK-4G

- Standard Analog/SIP/4G Telephone
- Aluminum alloy die-casting enclosure, strong corrosion resistance, durable, IP66 protection
- With LCD display, caller ID, customizable

JR101-FK-HB-Analog
JR101-FK-HB-SIP
JR101-FK-HB-4G

- Standard Analog/SIP/4G Telephone
- Full keyboard with memory function, 0-9 keys can be programmed as speed dial keys
- External warning lights and speakers can be used for broadcasting and alarm signals

JR101-CB-L

- Wall-mounted installation, beautiful appearance, magnetic door cover design

- Aluminum alloy die-casting enclosure, strong corrosion resistance, good sealing, IP67 protection

- Fixed LED lights on the top, flashing incoming calls

- Hotline, auto-dial when off-hook

- Standard configuration inductive coupler for the hearing impaired people

- Support external 30W loudspeaker amplification, and integrated call reminder alarm light

- Connect to SIP server to realize Paging, group calling, recording and other functions

- The Analog version is powered by telephone line, the SIP version is powered by PoE or external 12V DC

JR103-CB-Analog
JR103-CB-SIP
JR103-CB-4G

- Standard Analog/SIP/4G Telephone
- Aluminum alloy die-casting enclosure, strong corrosion resistance, durable, IP66 protection
- Hotline, auto-dial when off-hook

JR104-SC-Analog
JR104-SC-SIP
JR104-SC-4G

- Standard Analog/SIP/4G Telephone
- Aluminum alloy die-casting enclosure, strong corrosion resistance, durable, IP66 protection grade
- Anti-vandal metal button for emergency call, one-touch calling
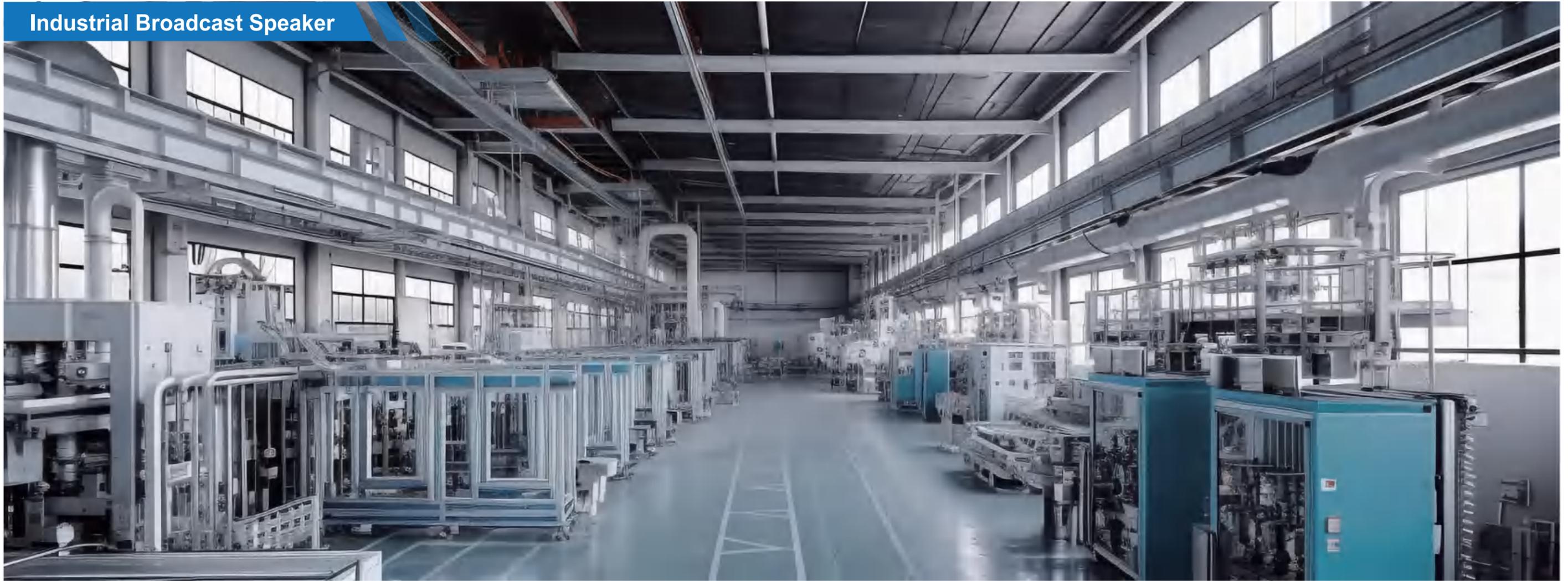
JR102-2B-Analog
JR102-2B-SIP
JR102-2B-4G

- Standard Analog/SIP/4G Telephone
- Aluminum alloy die-casting enclosure, strong corrosion resistance, durable, IP66 protection grade
- Two vandal resistant metal button for emergency call

SIP Speaker JRSP-SIP-01 is designed for outdoor environments. It allows users to remotely warn off intruders before they commit a crime, to deliver instructions during an emergency or to make general voice messages. The SIP speaker also support to play a prerecord audio file manually or automatically in response to an alarm event.

SIP Broadcast Speaker

- Integrated speaker system connected to standard network
- Easy integration of network video, access control and VoIP (SIP enabled)
- Supports manual or automatic playback of pre-recorded audio files
- Support server remote management and upgrade, convenient for users to manage and maintain
- Impact-resistant engineering plastics, IP65 protection grade
- Independent terminal, can be placed almost anywhere, flexible and stable

JR-HB-08 Acousto-optic Alarm

- Aluminum alloy die-casting enclosure and polycarbonate material, strong and impact-resistant
- Excellent sealing structure, IP66 protection level
- Speed 120-140RPM, ring volume 118dB

JR-HSA-C Broadcast Loudspeaker Column

- Sheet metal material, POE power supply, IP65 protection level
- A 10/100/1000M RJ45 network interface, supporting LAN and WAN transmission
- Built-in advanced class D power amplifier, power output 40W, optional power output

J&R TECHNOLOGY

JR200
Public Telephones

CE FC RoHS IP65 IK10

Specification

Analogue Version	
Power Supply	Analogue telephone line power supply
Power Voltage	24 VDC ~ 65 VDC
Power Current	20 mA DC ~ 100 mA DC
Ringing Volume	80dB (A) @ 1 meter, 110dB (A) @ 1 meter (for external loudspeakers)
Dialing Method	DTMF mode complies with ITU-T recommendation Q.23

SIP Version	
Power Supply	PoE powered or 12V DC powered
Power Adaptor	100-240VAC 50~60Hz DC12V
Power	Idle 1.5W / Working 1.8W
SIP protocol	SIP 2.0 (RFC3261)
Network port parameters	WAN Port: 10/100Base- T RJ-45 for LAN, Auto MDIX，LAN Port: 10/100Base- T RJ-45 for PC, Auto MDIX
Voice Coders	G.711 A/U, G.722 8000/16000, G.723, G.729
Communicate Mode	Full Duplex
Ringing Volume	90~95dB(A) @ 1 meter, 110dB(A) @ 1 meter (for external loudspeakers)

4G Version	
Power Supply	12V DC
Power	Idle 0.3W / Working 1.5W
Communication Mode	4G
Ringing Volume	90~95dB(A) @ 1 meter
Programming Method	Remote programming via SMS
Frequency	AUX version：LTE-FDD B1/B2/B3/B4/B5/B7/B8/B28 , LTE-TDD B40 , WCDMA B1/B2/B4/B5/B8 AFX version：LTE-FDD B2/B4/B5/B12/B13/B14/B66/B71 , WCDMA B2/B4/B5 EUX version：LTE-FDD B1/B3/B7/B8/B20/B28A , LTE-TDD B38/B40/B41 , WCDMA B1/B8

Operating Environment	
Protection type	IP65 protection leve
Operating temperature	-40°C to +65°C
Storage temperature	-40°C to +75°C

Packing Details	
Unit Size：247 *130 *133 (mm)	N.W.: 3kg
Carton Size：340*220*165 (mm)	G.W.: 4kg
Packing Materials：pearl cotton, carton	

J&R TECHNOLOGY

JR200
Public Telephones

Features

- It is mainly used in public places such as bank ATMs and prisons
- The telephone is high-grade and beautiful, SUS304 stainless steel body, excellent waterproof and dustproof performance, IP65 protection grade
- 12-bit zinc alloy buttons are highly wear-resistant and corrosion-resistant, and can be programmed for speed dialing
- The handset receiver has excellent anti-noise performance and can effectively filter background noise
- High and low temperature resistance, working temperature range: -40°C to + 70°C
- The main chip adopts an industrial-grade microcontroller which can be customizedfunction according to the customer's requirement, such as limiting call time, disconnection detection, and starting the monitoring screen,etc

JR200 series telephones are made of industrial cold-rolled steel spray-coated or 304 stainless steel casing, which is.anti-destructive, high reliability, waterproof and moisture-proof, Using metal buttons, wear-resistant, anti-aging. The handset is made of ABS and PC synthetic materials by injection molding. Integrated structure good sealing performance. It can withstand heavy impact without breaking, and it will not burst at minus 40 degrees.

The telephone has good stability and strong anti-interference ability, which meets the national standard GB/T 15279-94.

JR200 series telephones is designed to be used in various places such as shopping malls, campuses, hospitals, prisons, beside ATM cash machines, bank halls, gymnasiums, and outdoor buildings, etc.

Features

- Cold-rolled steel enclosure with powder coating, strong and anti-violent damage
- All accessories are multi-layer waterproof and dustproof structure
- The phone has good stability and strong anti-interference ability
- Automatic call when picking up the handset, simple and convenient operation
- Protection level IP65
- Analog, SIP and 4G version optional

JR202-CB

JR211-CB

JR201-FK-VC

JR204-FK

JR212-FK

JR213-V-2B

- Built-in HD infrared camera
- Using hardware DSP echo cancellation technology
- Video supports H.264, H.263 encoding
- Flexible hardware design, multiple peripheral interfaces
- Applicable to parking lots, prisons, subways, public service agencies, etc

JR213 video telephone is mainly composed of a built-in camera, display screen and two waterproof buttons/16-digit keyboard. Users can easily make video calls for help, so that both parties can fully understand the on-site environment and improve communication efficiency.

JR213-FK

- Built-in HD infrared camera
- Large size HD LCD display
- Zinc alloy 16-digit keypad, editable speed dial numbersl
- With DTMF detection, generation, transmission and recovery functions
- Adopt standard SIP (RFC3261) protocol, compatible with mainstream platforms on the market

J&R TECHNOLOGY

JR300
Emergency Telephones

CE   FC   RoHS   IP65   IK10

Specification

Analogue Version	
Power Supply	Analogue telephone line power supply
Power Voltage	24 VDC ~ 65 VDC
Power Current	20 mA DC ~ 100 mA DC
Ringing Volume	80dB (A) @ 1 meter, 110dB (A) @ 1 meter (for external loudspeakers)
Dialing Method	DTMF mode complies with ITU-T recommendation Q.23

SIP Version	
Power Supply	PoE powered or 12V DC powered
Power Adaptor	100-240VAC 50～60Hz DC12V
Power	Idle 1.5W / Working 1.8W
SIP protocol	SIP 2.0 (RFC3261)
Network port parameters	WAN Port: 10/100Base- T RJ-45 for LAN, Auto MDIX，LAN Port: 10/100Base- T RJ-45 for PC, Auto MDIX
Voice Coders	G.711 A/U, G.722 8000/16000, G.723, G.729
Communicate Mode	Full Duplex
Ringing Volume	90~95dB(A) @ 1 meter, 110dB(A) @ 1 meter (for external loudspeakers)

4G Version	
Power Supply	12V DC
Power	Idle 0.3W / Working 1.5W
Communication Mode	4G
Ringing Volume	90~95dB(A) @ 1 meter
Programming Method	Remote programming via SMS
Frequency	AUX version：LTE-FDD B1/B2/B3/B4/B5/B7/B8/B28 , LTE-TDD B40 , WCDMA B1/B2/B4/B5/B8 AFX version：LTE-FDD B2/B4/B5/B12/B13/B14/B66/B71 , WCDMA B2/B4/B5 EUX version：LTE-FDD B1/B3/B7/B8/B20/B28A , LTE-TDD B38/B40/B41 , WCDMA B1/B8

Operating Environment	
Protection type	IP65 protection leve
Operating temperature	-40°C to +65°C
Storage temperature	-40°C to +75°C

Packing Details	
Unit Size：210 *146 *42 (mm)	N.W.: 2kg
Carton Size：340*235*165 (mm)	G.W.: 3kg
Packing Materials：pearl cotton, carton	

J&R TECHNOLOGY

JR300
Emergency Telephones
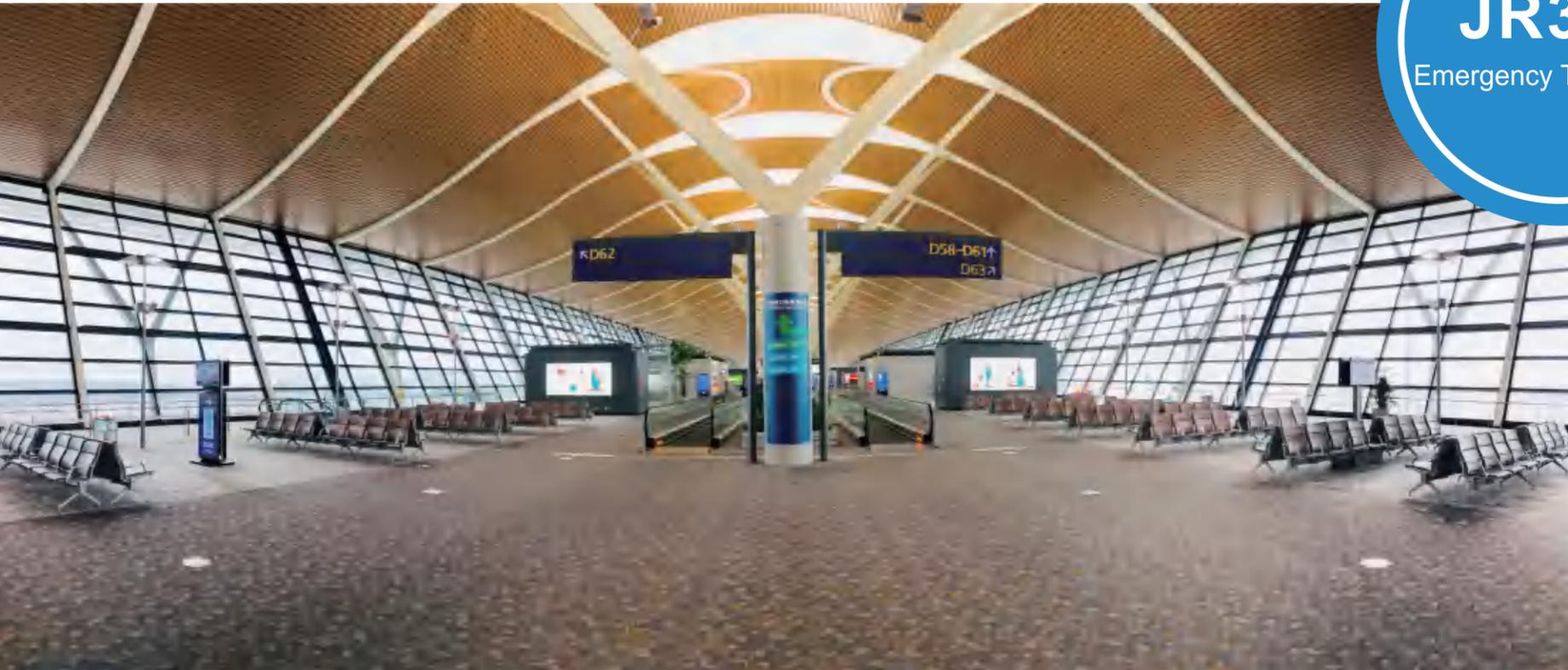
Features

- Hands-free operation, instant and efficient
- Video linkage can be integrated
- Incoming call flashing light reminder
- JR315-SC supports Braille prompt and induction loop
- SUS304 stainless steel body, high waterproof and dustproof performance, protection level up to IP65
- The main chip adopts an industrial-grade microcontroller which can be customized function according to the customer's requirement, such as limiting call time, disconnection detection, and starting the monitoring screen, etc

JR300 series telephones are beautiful in design and easy to use. The enclosure is made of SUS304 stainless steel, which is durable and can ensure normal communication functions even after being subjected to high-intensity violence.

JR300 series is designed to be used in airports, elevators, clean rooms, parking lots, railway/subway platforms, expressways, hospitals, police stations, cultural and tourist attractions, country parks, national nature reserves, etc.

Features

- SUS304 stainless steel enclosure, anti-violent damage
- All accessories are multi-layer waterproof and dustproof structure
- Hands-free operation, instant and efficient
- Zinc alloy high wear-resistant buttons, editable speed dial numbers
- Protection levelIP65
- Analog, SIP, and 4G version optional

| JR308-FK | JR309-FK | JR301-SC | JR305-SC-4G | JR315-SC |

J&R TECHNOLOGY

Outdoor Highway Emergency Telephones

Features

- Analog, SIP and 4G optional
- High waterproof and dustproof performance, protection level up to IP65
- High and low temperature resistance, operating temperature range: –40°C to +70°C
- Flashing light reminder, LED lighting
- Solar charging, automatic hang up
- Video linkage can be integrated
- Set call time limit
- Hands-free one-touch dialing

Outdoor highway emergency telephones pillars are suitable for highways, railways, tunnel exits, parks, and scenic spots. When geological disasters, traffic accidents, vehicle failures etc, need to be called for help, seeker can get help effectively in the shortest time by pressing the call button.

This series of telephones can also activate the camera linkage function to monitor the alarm screen. The telephone can be equipped with iron-lithium battery and solar power supply, which saves the trouble of re-wiring. The telephone is equipped with LED light-sensing lighting, which is convenient for use in the dark.

Designed for high noise and harsh environments, it is especially suitable for installation and use in industrial, petrochemical and offshore environments.

JR-TH-02

- Anti-noise design to reduce external noise in high-noise environments to improve call quality

- Made of glass fiber reinforced plastic, strong applicability, explosion-proof, anti-corrosion, high temperature resistance, flame retardant, etc

- Integrated molding, beautiful appearance, support customized colors, easy installation

- Applicable to high noise environments such as ships, offshore platforms, power plants, power stations, smelters, petrochemicals, etc., can reduce environmental noise by about 15dB

JR-TH-01

- High performance polyurethane acoustic insulation liner, suitable for extremely loud noise environment

- GRP material, explosion-proof, anti-corrosion, high temperature resistance, flame retardant

- Very strong and durable, fixed by stainless steel bracket

- Applicable to high-noise environments such as ships, offshore platforms, power plants, power stations, smelters, petrochemicals, etc., and Noise Attenuation up to 23 dB

Designed for high noise and harsh environments, it is especially suitable for installation and use in industrial, petrochemical and offshore environments.

JR-TH-08

- Dimensions: 1000 x 1000 x 2125mm
- Weight: about 300 kgs
- Color: Yellow (standard), other colors can be customized
- Material: strong cold-rolled steel shell, anti-vandal tempered glass
- Each booth can be fitted with a JR telephone that suits specific needs and requirements
- Noise reduction: 38dB with door
- Noise reduction: 25dB without door

JR-TH-05

- Dimensions: 850 x 680 x 600 mm
- Weight: about 30 kgs
- Material: GRP fiberglass shell, stainless steel bracket fixed
- This telephone acoustic hood is lined on three sides with 50mm flame-retardant, non-hygroscopic sound-insulating material
- High level noise reduction up to 25dB
- Pre-drilled stainless steel mounting plate to mount specified telephone size

JR-AP-11

This series of equipment adopts industrial-grade design standards, adopts technologies such as CCK/DSSS, OFDM, and MIMO, and is optimized to provide a connection rate of up to 1200Mbps.

Provides 4 antenna interfaces with a maximum transmission power of 27dBm (500mw), which is convenient for users to flexibly choose and match external antennas according to different coverage scenarios.

The equipment has wireless transmitting equipment model approval and supports various installation methods such as ceiling-mounted, wall-mounted, pole-mounted, and floor-mounted, etc., which can meet the application needs of various industry scenarios to the greatest extent.

IP67

Features

- Supports 802.11ac protocol, works in 2.4GHz&5.8GHz frequency band, and the maximum speed of the whole machine reaches 1750Mbps
- Support intelligent radio frequency technology to realize automatic adjustment of working channel and transmission power
- Supports virtual AP technology and can provide up to 32 virtual SSIDs
- Built-in directional antenna, and supports optional external antenna
- Supports gateway routing integration and fat and thin mode integration
- Supports point-to-point and point-to-multipoint WDS relay bridges to achieve coverage in areas where wiring is inconvenient
- The protection level reaches IP67, supporting fully enclosed waterproof, moisture-proof, dust-proof, sun-proof and fire-proof
- Built-in antenna lightning protector, lightning protection level 9KV, effectively protects AP equipment
- Support POE power supply

Handheld Waterproof, Dustproof and Vandal-proof Phone

JR-MP-01

- Three-proof telephone is beautiful, sturdy and durable, with protection level reaching IP66
- Industrial grade transflective LCD screen, 3.5 inches, VGA (640x480) resolution
- The fast switching function can quickly and seamlessly switch between APs to ensure smooth voice communication.
- Intrinsically safe circuit design meets the requirements of intrinsically safe explosion-proof standards
- Supports two charging modes: cradle charger and miniUSB, using cradle charger for more reliable charging
- Built-in SIP softphone, can be registered to SIP server
- Software intercom shortcut keys
- Support 2A fast charging

JR-MP-02

- IP68 anti-vandal handheld telephone, supports domestic 4G full network
- 5.5-inch capacitive screen, Corning third-generation glass, 5-point touch, supports glove and gesture operation
- Resolution: HD+IPS720*1440
- 3G RAM + 32GB ROM
- Dual SIM card, Nano Sim card
- Support external T card, expandable to 128GB
- Using a strong anti-interference microphone, it effectively suppresses environmental noise and keeps the voice clear in harsh environments
- Built-in SIP softphone, can be registered to SIP server

JR-MI-15

● The short version is 550g, the long version is 760g

● High-definition video recording supports 1920*1080 / 1280*720, and supports loop recording

● 2.4-inch IPS touch screen, quick operation, one-button start

● Voice and video real-time communication function

● Two levels of strong low-lighting light modes

● GPS positioning, NFC function

● Built-in 7000mAh compatible 14000mAh large-capacity battery, continuous recording >8 hours, standby time >18 days

JR-MI-18

● Multifunctional, user-friendly and lightweight design

● Stable and reliable Pogo Pin connection method

● Supports one-click intercom, one-click video recording, and one-click photo taking

● 4G full network, real-time intercom, real-time video backhaul

● Ready to use, convenient and fast, supports deep customization of APP

● Support expansion to implement more business applications, such as face recognition, license plate recognition, document recognition, etc

Electrical equipment protection methods in GB3836 system

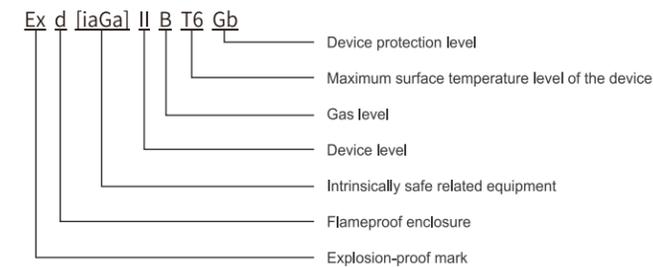| Standard encoding	International corresponding standards	Explosion-proof type	Explosion-proof type	Graphical method
GB3836.1	IEC60079-0 EN60079-0 FM3600 UL2279	General Requirements	—	—
GB3836.2	IEC60079-1 EN60079-1 FM3600 UL2279	Flameproof enclosure " d "	When the equipment is in normal operation, the components that can generate spark arcs are placed in a flameproof enclosure. The flameproof enclosure can withstand the internal explosion pressure without loss and prevent it from spreading outside the enclosure.	
GB3836.3	IEC60079-7 EN60079-7 FM3600 UL2279	Increased safety " e "	During normal operation, arcs, sparks and dangerous high temperatures will not be generated. And further protective measures will be taken on the structure to improve the safety of the equipment.	
GB3836.4	IEC60079-1 1EN60079-1 1FM3601 UL2279	Intrinsic safety " i "	Under specified conditions, the electric sparks and thermal effects generated by the circuit inside the equipment during normal operation or specified fault conditions cannot ignite explosive mixtures.	
GB3836.5	IEC60079-2 EN60079-2 FM3620 NFPA496	Pressurised apparatus " p "	Keep the pressure of the internal protective gas higher than the surrounding environment to prevent explosive mixtures from entering the enclosure, or allow a sufficient amount of protective gas to pass through the enclosure to reduce the concentration of the explosive mixture inside the enclosure to below the lower explosion limit.	
GB3836.6	IEC60079-6 EN60079-6 FM3600 UL2279	Oil immersion " O "	Immerse all components of electrical equipment in protective fluid so that the equipment cannot ignite explosive gases on the liquid surface or outside the enclosure.	
GB3836.7	IEC60079-5 EN60079-5 UL2279	Powder filling " q "	Immerse all components of electrical equipment in protective fluid so that the equipment cannot ignite explosive gases on the liquid surface or outside the enclosure.	
GB3836.8	IEC60079-15 EN60079-15 UL2279	Protection " n "	Electrical equipment must not ignite surrounding explosive gases (under normal operating conditions and under determined abnormal operating conditions).	
GB3836.9	IEC60079-18 EN60079-18 FM3600 UL2279	Moulding " m "	The part that may ignite the explosive mixture is sealed in the compound so that it cannot ignite the surrounding explosive gas.	

Protection methods for dust explosion-proof electrical equipment

Standard encoding	International corresponding standards	Explosion-proof type	Explosion-proof type	Graphical method
GB12476.1	IEC61241-0 EN61241-1	Dust explosion proof	Electrical equipment for use in combustible dust atmospheres - Part 1 General requirements.	
GB12476.5	IEC61241-1 EN61241-1		Electrical equipment for use in combustible dust atmospheres - Part 1 General requirements.	

Classification of hazardous locations for electrical equipment used in explosive gas environments

Zone 0	Zone 1	Zone 2
Places where explosive gas environments appear continuously or exist for a long time.	Places where explosive gas environments may occur during normal operation.	During normal operation, it is impossible for an explosive gas environment to occur. If it does occur, it will only occur occasionally and only for a short period of time.

Examples of explosion-proof markings for electrical equipment used in explosive gas environments

Ex d [iaGa] II B T6 Gb

- Device protection level
- Maximum surface temperature level of the device
- Gas level
- Device level
- Intrinsically safe related equipment
- Flameproof enclosure
- Explosion-proof mark

Maximum surface temperature grouping for Class II electrical equipment

Temperature group	Maximum surface temperature of equipment (°C)
T1	450
T2	300
T3	200
T4	135
T5	100
T6	85

Explosive gas classification group

Electrical equipment categories	Representative gas	Gas classification	Maximum Experiment Safety Gap (MESG)	Minimum ignition current (MIC)
Group I	Methane (biogas)	—	—	—
Group IIA	propane	A	MESG > 0.9mm	MIC ratio > 0.8
Group IIB	Vinyl	B	MESG0.5mm~0.9mm	MIC ratio：0.45~0.8
Group IIC	Hydrogen/acetylene	C	MESG < 0.5mm	MIC ratio < 0.45

Note: Group I: electrical equipment for underground coal mines (methane); Group II: electrical equipment for factories (other explosive gas environments outside coal mines);
*: Only applicable to Group II explosion-proof "d" intrinsically safe "i" electrical equipment and some "n" type electrical equipment.

Explosive gas classification group

Temperature class		T1		T2		T3	T4	T5	T6
	I	Methane		—		—	—	—	—
Category	IIA	Acetic acid Acetone Acetonitrile Allyl fluoride Ammonia Aniline Methyl styrene Trimethylbenzene g-2-one (Methyl propyl ketone)	Cresol Ethyl bromide Isobutane Butyryl fluoride Methyl chloride Propane Ethyl chloride Oil Nitrogen (miscellaneous) Benzene	Byclopentane Methylcyclopentane Propionic acid Acetylene Methanol Methyl formate Ethyl acetate Ethylene oxide Diisopropyl ether	Propanol Cyclohexanone Ethylene Furans Butane Methylamine Chlorohydrin Ethyl acrylate	Pentane Methylcyclohexane Petroleum (including gasoline) Diesel fuel Kerosene Hexane Ethyl mercaptan Pentol Chlorobutane Tetrahydrothiophene	Acetaldehyde	—	Ethyl nitrite
	IIB	Propylene (methyl acetylene) Cyclopropane Acrylonitrile	Hydrogen cyanide Coke oven gas	Butadiene -1,3 Ethylene oxide Methyl acrylate Furans		Diformaldehyde Methylhydrofuranmethanol Butenol Ethyl mercaptan	Ethyl methyl ether Diethyl ether Dibutyl ether Tetrafluoroethylene	—	—
	IIC	Hydrogen		Acetylene		—	—	Carbon disulfide	—

Electrical equipment for combustible dust environments

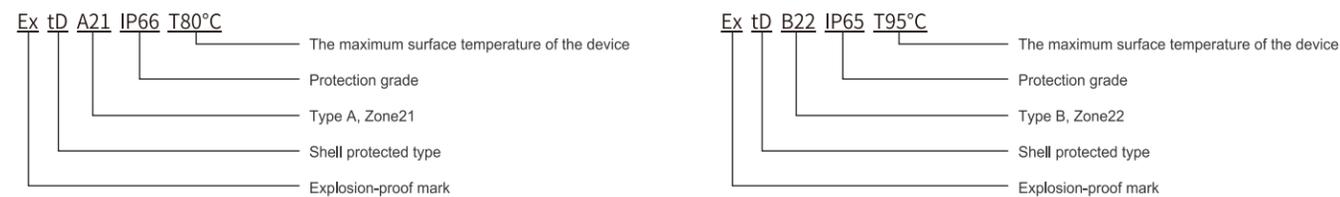| Zone 20	Zone 21	Zone 22
Places where the explosive environment in the air appears continuously in the state of a flammable dust cloud, exists for a long time or occurs frequently.	Places where an explosive environment in the air in the form of a combustible dust cloud may occur or occasionally occur during normal operation.	In the normal course of operation, the explosive environment in the air is impossible to appear in the state of flammable dust clouds, if it occurs only for a short time.

Dust tight type (Type A electrical equipment)

Zone 20, Zone 21, Zone 22 (with conductive dust)	Zone 22
IP6X: Mark A20 or A21	IP5X: Symbol A22

Selection of type A anti-dust ignition electrical equipment

Types of powder	Zone 20 to Zone 21	Zone 22
Electrical conductivity	A20 or A21	A21（IP6X）
Non-conductive	A20 or A21	A22 or A21

Examples of explosion-proof marks for electrical equipment used in explosive gas environments

Ex tD A21 IP66 T80°C
- The maximum surface temperature of the device
- Protection grade
- Type A, Zone21
- Shell protected type
- Explosion-proof mark

Ex tD B22 IP65 T95°C
- The maximum surface temperature of the device
- Protection grade
- Type B, Zone22
- Shell protected type
- Explosion-proof mark

Traditional mapping between device protection levels (EPL) and zones

Device protection level	Ga	Gb	Gc
The protection level specified for the equipment is based on the possibility of the equipment becoming an ignition source and the different characteristics of explosive gas environments, explosive dust environments and coal mine methane explosive environments.	Equipment for use in explosive gas environments, with a "very high" level of protection, which is not a source of ignition during normal operation, expected failure or rare failure.	Equipment for use in explosive gas atmospheres, with a "high" level of protection, which is not a source of ignition under normal operation or expected failure conditions.	Equipment used in explosive gas environments has a "general" protection level. If it is not an ignition source during normal operation, some protective measures can be taken to ensure that effective ignition will not occur when the ignition source is expected to occur (such as the failure of a lamp).
Zone	Zone 0	Zone 1	Zone 2

Various types of anti-corrosion electrical appliances corresponding to the use of environmental conditions

Protection type	Rank of usage environment
F1	3K5L/3Zh1/3Za5/3Zw9/3B2/3C2/3S3
F2	3K5L/3Zh1/3Za6/3Zw9/3B2/3C4/3S4
W	4K1"/4Zh1/4Za4/4Zw7/4B1/4C2/4S2
WF1	4K1"/4Zh1/4Za4/4Zw7/4B1/4C3/4S3
WF2	4K1"/4Zh1/4Za4/4Zw7/4B1/4C4/4S4

When the user proposes operating conditions below -20°C, grade 4K2 should be used instead of grade 4K1.

National protection grade standard

IP □□

Containment level — Waterproof into housing grade

First-place representation	Testing	Sketch	Case protection class
0	No test	Non-protective	Inherent protection
1	Φ50mm	Prevent solid foreign bodies larger than 50mm	It can prevent solid objects with a diameter greater than 50mm from entering the shell (e.g., accidental contact of hands)
2	Φ12.5mm	Prevent solid foreign bodies larger than 12.5mm	Prevents solid objects larger than 12.5mm in diameter from entering the shell (e.g. fingers)
3	Φ2.5mm	Prevent solid foreign bodies larger than 2.5mm	Prevents solid objects with a diameter greater than 2.5mm from entering the shell (e.g. tools, wires)
4	Φ1mm	Prevent solid foreign bodies larger than 1mm	Can prevent the diameter of more than 1mm solid objects into the shell (such as: small tools, wires)
5		Dust prevention	Dust prevention: The amount of dust entering the device is insufficient to affect the normal operation of the device
6		Dust tight	Dust dense, no dust into

First-place representation	Testing	Sketch	Case protection class
0	No test	Non-protective	Inherent protection
1		Drip-proof	Dripping (vertical dripping) has no effect
2		15° Drip proof	Intrinsic protectionWhen the shell tilts from its normal position when the Angle is within 15°, the sag straight dripping has no harmful effects
3		Showerproof	No harmful effects of the water in the vertical range of 60°
4		Splash proof	No harmful effects from splashing in any direction
5		Water Spraying	Water in any direction has no harmful effects
6		Protection against waves	Strong waves or water sprays are used to prevent the intake of water from reaching harmful effects
7		Protection against the risk of submersion	After immersion in water at a specified pressure and for a specified time, the amount of water injected will not reach harmful effects
8		Protection against diving risks	Anti-diving effects Harmless effects under the specified pressure for a long time diving, water should not enter the shell

J&R TECHNOLOGY

Classification of hazardous locations

According to the frequency and duration of the explosion environments, the hazardous areas are divided into different Zones.

The gas Zone is divided into three Zones: Zone 0, Zone 1 and Zone 2.

Zone 0

A place where explosive mixtures in an explosive environment appear continuously or for a long time in the form of gas, vapor or mist.

Zone 1

Places where explosive mixtures in the form of gases, vapors or mist may occur in an explosive atmosphere during normal operation. Zone 1 is a typical application place for explosion proof electrical equipment.

Zone 2

During normal operation, explosive mixtures in the form of gases, vapors or mist are unlikely to occur in explosive environments, and if they do occur, they will only occur occasionally and exist for a short period of time. Typically, "short-term" refers to a duration of no more than 2 hours.

Dust areas are divided into three zones: Zone 20, Zone 21 and Zone 22.

Zone 20

Places and interiors of containers where combustible dust occurs continuously or frequently during normal operation in sufficient quantity to form a mixture of combustible dust and air and/or may form an uncontrollable and extremely thick dust layer.

Zone 21

During normal operation, there may be places where the amount of dust is sufficient to form a combustible dust-air mixture but is not classified in Zone 20. This area includes places directly adjacent to filling or discharging dust, places where dust layers appear, and places where flammable concentrations of combustible dust and air mixtures may be generated under normal operating conditions.

Zone 22

Under abnormal conditions, combustible dust clouds occasionally appear and only exist for a short time, or combustible dust occasionally accumulates or dust layers may exist and generate combustible dust-air mixtures, but are not included in Zone 21.
If it cannot be guaranteed to eliminate combustible dust accumulation or dust layer, it should be divided into Zone 21.

Device protection level

EPL

The protection level specified for the equipment is based on the possibility of the equipment becoming ignited and the different characteristics of explosive gas environments, explosive dust environments and coal mine methane explosive environments.

Ga level

Equipment for use in explosive gas atmospheres, with a "very high" level of protection, is not a source of ignition during normal operation, expected failure or rare failure.

Gb level

Equipment for use in explosive gas atmospheres, with a "high" level of protection, is not a source of ignition during normal operation or during expected or rare malfunctions.

Gc level

Equipment used in explosive gas environments, has a "general" protection level and is not an ignition source during normal operation. Some additional protective measures can also be taken to ensure that effective ignition will not occur when the ignition source is expected to occur (such as the failure of a lamp).

Da level

Equipment for use in combustible dust environments has a "very high" level of protection and is not a source of ignition under normal operation, expected failure or rare failure conditions.

Db level

Equipment for use in combustible dust environments has a "high" level of protection and is not a source of ignition under normal operation or expected malfunction conditions.

Dc level

Equipment used in combustible dust environments has a "general" protection level and is not an ignition source during normal operation. Some additional protective measures can also be taken to ensure that no ignition sources are expected to occur (such as the failure of lamps). It will not form effective ignition.

Terminology

- Explosion proof electrical equipment
  Enclosure electrical equipment that can withstand the explosion pressure of the explosive gas mixture inside and prevent the internal explosion from propagating to the explosive mixture around the enclosure is marked "d".

- Increased safety electrical equipment
  Electrical equipment that does not produce arcs, sparks or high temperatures that may ignite explosive mixtures under normal operating conditions and structurally adopts measures to increase safety margins to avoid arcs, sparks or high temperatures under normal and recognized overload conditions, is marked for "e".

- Dust explosion-proof electrical equipment
  It is designed and manufactured according to the specified conditions so that its shell can prevent the entry of combustible dust or the amount of entry will not hinder the safe operation of the equipment. The dust accumulated inside will not easily ignite, thereby ensuring that it will not cause the explosion of the surrounding explosive mixture when used equipment.

Note:
1. The temperature groups of powder explosion proof electrical equipment are the same as those of gas explosion-proof electrical equipment.
2. Powder explosion proof electrical equipment is divided into two types: A and B according to the differences between American standards and European standards.
   A and B use different test methods, but the level of protection is the same.

Temperature group

Temperature group	Gas ignition temperature	Maximum surface temperature allowed by the equipment
T6	85 < T ≤ 100	85
T5	100 < T ≤ 135	100
T4	135 < T ≤ 200	135
T3	200 < T ≤ 300	200
T2	300 < T ≤ 450	300
T1	450 < T	450

Examples of explosion protection symbols

- If the electrical equipment is Class IIB explosion proof T3 group, the mark is ExdI BT3.
- If the electrical equipment is Class II increased safety type, the temperature group is Group T2 and the mark is ExeII T2.
- If the electrical equipment adopts more than one composite type, the main explosion proof type shall be marked first, and then mark other explosion proof types. If the main body adopts increased safety type with built-in IIC explosion proof components, the temperature group shall be T4, and the mark shall be ExedII CT4 . If the main components are explosion proof category IIB, group T4, and the remaining components are increased safety type, the explosion proof mark is Exde II BT4.
- DIPA20 TA, T4, DIP indicates dust explosion proof, A20 indicates type A equipment that can be used in Zone 20, TA, T4 indicates that the temperature group of the equipment is T4 (135℃).

Gases and vapors are classified according to their maximum test safety gap (MESG) and minimum ignition current (MIC)

Category	Maximum test safety clearance	Minimum ignition current ratio
IIA	≥ 0.9	> 0.8
IIB	0.5 < MESG ≤ 0.9	0.45 ≤ MICR ≤ 0.8
IIC	≤ 0.5	< 0.45

Temperature group

Path	Corresponding pipe thread (G)	Colloquially	Maximum permissible cable outside diameter (mm)
DN15	G1/2	4 min	Φ7~Φ10
DN20	G3/4	6 min	Φ10~Φ14
DN25	G1	1 in	Φ12~Φ18
DN32	G1 1/4	1.2 in	Φ15~Φ23
DN40	G1 1/2	1.5 in	Φ18~Φ30
DN50	G2	2 in	Φ25~Φ38
DN65	G2 1/2	2.5 in	Φ30~Φ46
DN80	G3	3 in	Φ38~Φ56
DN100	G4	4 in	Φ61~Φ80