Z920K-RS485/Z920K-RS232

Wireless Mesh Converter

INTRODUCTION

ZOTECH Z920K series are able to easily wireless those messy RS485 / RS232C wirings for Industrial IoT, smart building or other IoT applications. Z920K-P/Z920K-C support Modbus/RTU or ASCII code, and feature a low power consumption, long-range and robust wireless mesh links. Z920K 920Mhz radio frequency has a strong capability to desensitize with interferes to make it as a perfect solution for a wireless data transferring. The main advantage of Z920K application is that the original control/data collect systems and sensing equipment can be kept to save cost and time for a mesh network establish. Z920K wireless is designed with an OKI MH920 module to remain all of the advantages of OKI Smart Hop. Z920K can be easily and widely used for the different IOT applications.

SPECIFICATIONS

General

• **Standard**	Compatible with IEEE 802.15.4g
• **Protocol**	Modbus-RTU / ASCII code
• **Topology MESH**	Max 16 hops
• **Network Accommodation**	Max 100 nodes
• **Radio frequency band**	920MHz
• **Transmit bandwidth**	400KHz
• **Max receiver sensitivity**	-103 dBm
• **Maximum data rate**	100 kbps
• **Modulation**	GFSK
• **Encryption**	128bits AES (MAC)
• **Power Consumption**	50mA@24Vdc
• **Transmit output power**	0.16mW/ 1mW/ 20mW
• **Outdoor range**	500m (at a visible direct line)
• **External antenna**	920-928Mhz/+3dBi
• **Windows Utility**	Micro-USB
• **Telecom certification**	TELEC/FCC/NCC/NBTC
• **EMC**	EN 55032/EN55035
• **Protection**	Contact 4KV/ Air 8KV
• **Mounting**	Din Rail, Stand Alone, Adsorption

Power

• **USB bus power**	5Vdc in

(12Vdc out won't be generated if only the USB bus power is used)

• **DC Out**	12Vdc/0.8A out (If an adaptor is used.)
• **DC/AC In (V+/V–)**	

Unregulated 10-48Vdc in or 8- 24Vac in

LED indicators:

- **LINK:** 🔗
  - – Link: Solid Green
  - – Traffic: 1 Hz blinking
  - – Link Fail: 1Hz Red Blinking

- **PWR** ⏻
  - – Power ON ready: Solid green
  - – Bootup fail: Solid red

- **Network** ⌁
  - – Normal state (Mesh network ready): Solid Green
  - – Data transmission: Green (10Hz blinking)
  - – Stop pairing: Green/Red 1Hz blinking simultaneously
  - – No light: Network unable to join or escape network

The top view of Z920K

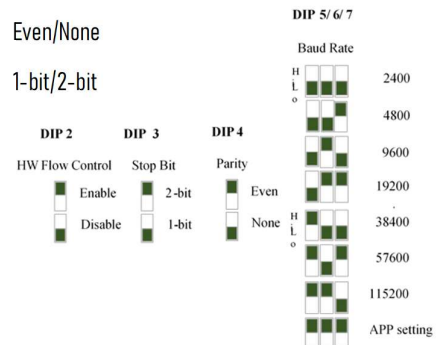|		
▣	▣	▣	stronger than -55 dBm
▣	▣	◐	-56 dBm ~ -65dBm
▣	▣	☐	-66 dBm ~ -75dBm
◐	▣	☐	-76 dBm ~ -85dBm
▣	☐	☐	-86 dBm ~ -90dBm
◐	☐	☐	-91 dBm ~ -103dBm
☐	☐	☐	weaker than -103dBm
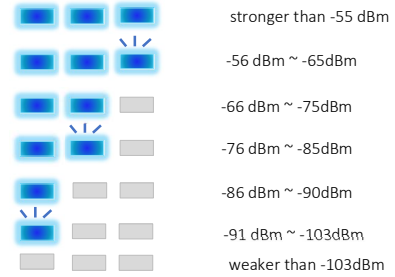
RSSI indication

Rear View

- **Antenna**   SMA connector
- **Power switch**   Power ON/OFF
- **Reset**   Software reset
- **Console**   Micro-USB connector

The rear view of Z920K

- **SW1**

Baud rate   2400/4800/9600/19200/38400/57600/115200 bps

Parity   Even/None

Stop bit   1-bit/2-bit

DIP 5/ 6/ 7

Baud Rate

H L o			2400
			4800
			9600
			19200
H L o			38400
			57600
			115200
			APP setting

DIP 2
HW Flow Control
- Enable
- Disable

DIP 3
Stop Bit
- 2-bit
- 1-bit

DIP 4
Parity
- Even
- None

Front View
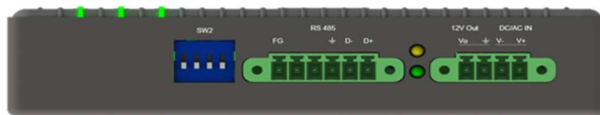
Z920K-RS485

Z920K-RS232

- **RS485 type**   Screw Terminal D+/D-/GND
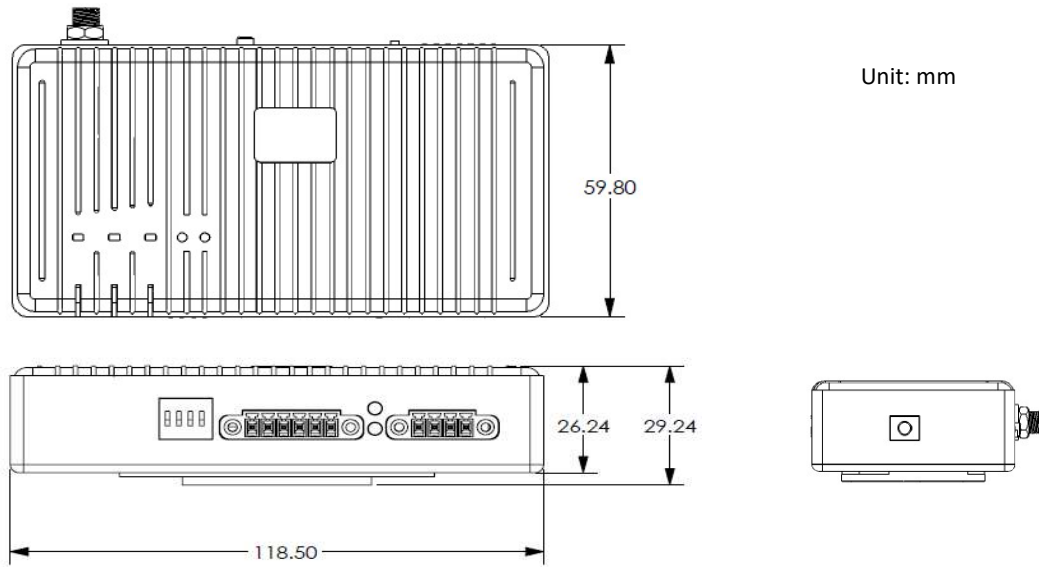- **SW2**   RS485 D+/D- resistors and Terminal 120 ohm setting

Dip Switch	Dip1	Dip2	Dip3	Dip4
	D+ Resistor	D- Resistor	Terminal Res.	Reserved
ON	1K ohm	1K ohm	120 ohm	NA
OFF	150K ohm	150K ohm	None	NA

- **RS232 type**   DB-9 male connector

Pin	1	2	3	4	5	6	7	8	9
Definition	DCD	RX	TX	DTR	GND	DSR	RTS	CTS	RI

Environment

- **Operating Temperature**   -20 ℃ ~ +70 ℃
- **Operating Humidity**   20 ~ 85% RH

- **Storage Temperature**   -30 ℃ ~ +85 ℃
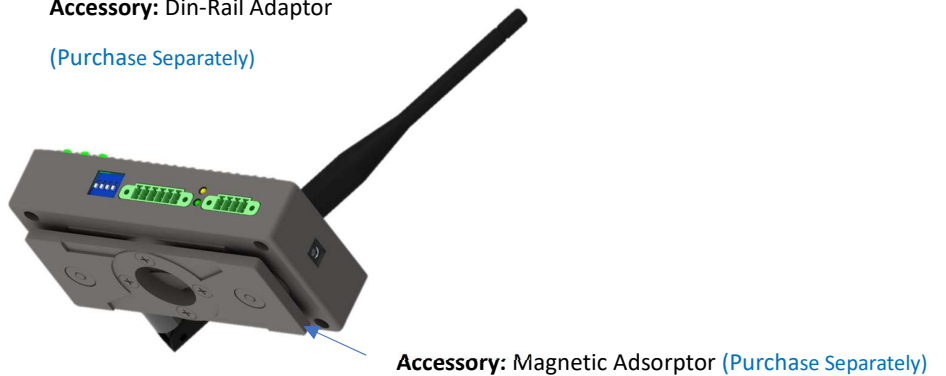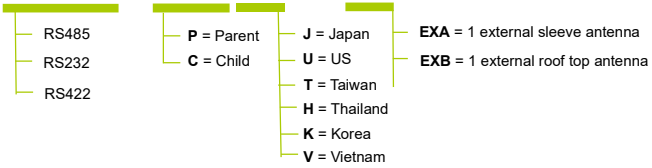- **Storage Humidity**   0 ~ 95% RH

MECHANICAL SPECIFICATION:

Unit: mm

59.80

26.24 29.24

118.50

Mounting:

Z920K Bottom View

Din Rail Adaptor

Accessory: Din-Rail Adaptor

(Purchase Separately)

Magnetic Adsorptor

Accessory: Magnetic Adsorptor (Purchase Separately)

Z920K – RXXXX – XX – XX

RS485	**P** = Parent	**J** = Japan	**EXA** = 1 external sleeve antenna
RS232	**C** = Child	**U** = US	**EXB** = 1 external roof top antenna
RS422		**T** = Taiwan	
		H = Thailand	
		K = Korea	
		V = Vietnam	

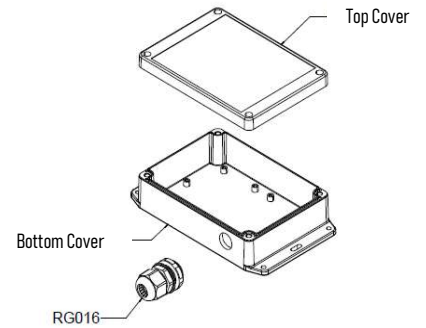| Ordering Info.	Description	Telecom Cer.
Z920K-RS485-PT-EXA	RS-485 to Sub-1G mesh, 920 MHz, sleeve antenna, TWN/ Parent	NCC
Z920K-RS485-CT-EXA	RS-485 to Sub-1G mesh, 920 MHz, sleeve antenna, TWN/ Child	NCC
Z920K-RS485-PH-EXA	RS-485 to Sub-1G mesh, 920 MHz, sleeve antenna, Thailand/Parent	NBTC
Z920K-RS485-CH-EXA	RS-485 to Sub-1G mesh, 920 MHz, sleeve antenna, Thailand/ Child	NBTC
Z920K-RS232-PT-EXA	RS-232 to Sub-1G mesh, 920 MHz, sleeve antenna, TWN/ Parent	NCC
Z920K-RS232-CT-EXA	RS-232 to Sub-1G mesh, 920 MHz, sleeve antenna, TWN/ Child	NCC
Z920K-RS232-PH-EXA	RS-232 to Sub-1G mesh, 920 MHz, sleeve antenna, Thailand/Parent	NBTC
Z920K-RS232-CH-EXA	RS-232 to Sub-1G mesh, 920 MHz, sleeve antenna, Thailand/Child	NBTC
Z920K-ANT-EXA	Sleeve antenna, +3dBi, SMA connector	
Z920K-ANT-EXB	SMA connector, Roof-top antenna. +3dBi, 2.5m, water resistant, SMA connector	
Z920K-ANT-CORD	SMA connector, Antenna. extension cord, 1.5m, SMA connector	
Z920K-ACC-MAG	Accessory magnetic absorption	
Z920K-ACC-DIN	Accessory Din-Rail adaptor	
Z920K-BOX-A	IP65/IP67 waterproof box 145mm*105mm*32mm	

Note:

- Two types of EXA/EXB antennas can be selected for a standard package.
- For a roof top antenna, it must be attached in the center of a metal plate of 6cm x 14cm or larger.
- For US, Japan, Vietnam, or Korea version, please contact with ZOTECH sales.
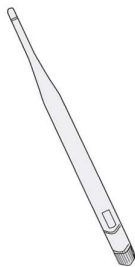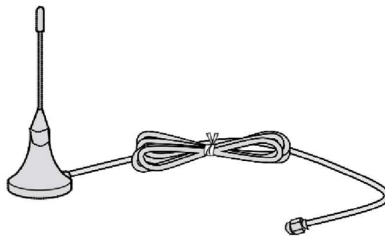
-EXA : Sleeve Antenna   -EXB: Roof top Antenna   -Waterproof box