## PLC Gateway BL102



#### KING PIGEON



# BL102 User Manual

Version: V1.0

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King Pigeon Communication Co.,Ltd

Website: www.iot-solution.com



#### Preface

Thanks for choosing King Pigeon PLC Modbus IOT Gateway BL102. Reading this manual with full attention will help you quickly learn device functions and operation methods.

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#### Disclaimer

This document is designed for assisting user to better understand the device. As the described device BL102 is under continuous improvement, this manual may be updated or revised from time to time without prior notice. This PLC Gateway is mainly used for industrial data transmission over Ethernet or 4G network. Please follow the instructions in the manual. Any damages caused by wrong operation will be beyond warranty.

#### **Revision History**

Revision Date	Version	Description	Owner
July 8, 2021	V1.0	Initial Release	HYQ



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#### **1** Gateway Introduction

#### **1.1 General Description**

BL102 is a Gateway that collects Siemens, Mitsubishi, Omron, Delta,Allen-Bradley and Schneider PLC data and converts to Modbus TCP, OPC UA, MQTT, HUAWEI Cloud, AWS, Alibaba Cloud, King Pigeon Cloud protocols

It's developed on embedded Linux operation system with high stability and various interfaces, 1RS485(optional RS232), 2 power inputs, 1 power output, 2 RJ45 Ethernet ports, 2 USB port, 1 SIM card slot and 1 SD card slot. With 4G cellular and Ethernet network, it features with high speed and low latency data transmission.

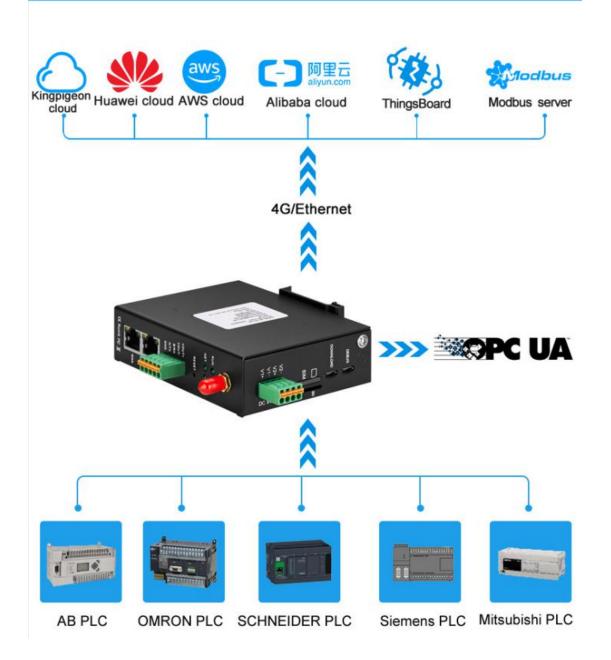
From downlink it supports various PLCs like Siemens, Mitsubishi, Omron, Delta, Allen-Bradley, Schneider, etc. From uplink it supports Modbus TCP, MQTT, OPC UA, HUAWEI Cloud, Alibaba Cloud, AWS, ThingsBoard, King Pigeon cloud, etc. Users can quickly connect many different industrial equipment to cloud platforms, SCADA, OPC UA, MES and other master computers. Devices can be online in various cloud platforms and master computers simultaneously.

With TSL/SSL encryption, routing function and cascaded switch data collection, it can be used in most of industrial application scenarios for secure data acquisition and remote monitoring purpose.



#### **1.2 Application Illustration**

## **BL102 Application Diagram**



#### **1.3 Packing List**

Before using Gateway BL102, please make sure below parts are included in the package: (Below pictures are for reference only. If any discrepancy, please follow real products)

• 1x Gateway BL102

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• 1x 4PIN 3.5mm Wiring Terminal for power input



• 1x 5PIN 3.5mm Wiring Terminal for RS485 or RS232 power output



• 1 x 4G SMA Cellular Network Antenna



• 2 x Wall-Mount Clip Kit





• 1 x DIN-Rail Mount Clip Kit



1 x User Manual (PDF soft copy)
 (Note: Scan QR code to download the user manual)

• 1 x SIM Card Picking Pin



• 1 x Product Qualification Certificate



• 1 x Warranty Card



Note: if any items are missing, please contact King Pigeon sales representative.

#### 1.4 Features

Downlink supports: Siemens, Mitsubishi, OMRON, Delta, Allen-Bradley, Schneider and other PLCs

Uplink supports: Modbus TCP, MQTT, OPC UA, HUAWEI Cloud, Alibaba Cloud, AWS,

ThingsBoard Cloud, King Pigeon Cloud, etc.

- DC 9-36V wide power voltage input with wiring terminal. There're 2 channels of power input redundancy design with inverse connection protection. Either channel can be selected.
- > 1 power output, output voltage is equal to input voltage.
- > 1 RS485/ (optional RS232) serial port input
- Serial port baud rate 2400bps-115200bps; stop bit supports 1, 2 bits; data bit supports 7,8 bits; parity bit supports None, Odd, Even.
- 2 RJ45 ports for Ethernet connection, 1 WAN and 1 LAN. Data can be collected from devices connected to WAN and LAN port or cascaded switch devices. Network link and rate indicators are available. Built-in isolation transformer with up to 2KV electromagnetic insulation.
- Support POE PD (Powered Device) for saving wiring cost (Optional function).
- > Support TSL\SSL data encryption for security.
- > Support routing function to provide network for other devices.
- Support 4G cellular network and APN setting. Ethernet network will be used if it's available. It will shift to 4G network automatically if Ethernet is not available.
- Support Modbus RTU to Modbus TCP and transparent transmission.
- Support RESET button for returning to factory settings (Long press the button until RUN indicator off with power) to avoid wrong parameter settings.
- > Support software and hardware watchdog for high reliability.
- Metal case with IP30 protection grade. Metal case and system are safely isolated, especially suitable for industrial site applications.
- Compact device size: 30mm\*83mm\*110mm, support wall-mounting and DIN-Rail mounting.

## **1.5 Technical Parameters**

ltem	Parameter	Description		
	Processor	ARM9, clock speed 300Mhz		
System	Storage	128MB( scalable to 1G)		
	Flash Memory	64MB		
	Input Voltage	DC 9~36V		
Power	Power	Normal: 95mA@10\/ may 117mA@10\/		
Source	Consumption	Normal: 85mA@12V, max 117mA@12V		
	Wiring	Support Inverse Connection Protection		
	Interface Spec	2 x RJ45, 10/100Mbps, adaptive MDI/MDIX		
Ethernet Port		ESD ±16kV (contact), ±18kV (air),		
EllemetFort	Port Protection	EFT 40A (5/50ns),		
		Lightening 6A (8/20µs)		
	Serial Port Qty	1 x RS485/ optional RS232		
	Baud Rate	2400bps-115200bps		
	Data Bit	7, 8		
Serial Port	Parity Bit	None, Even, Odd		
	Stop Bit	1, 2		
	Dort Drotoction	ESD ±8kV (contact), ±15kV (air)		
	Port Protection	EFT 2KV, 40A (5/50ns)		
Power Output	Output Voltage	1 channel DC 9 $\sim$ 36 V power output		
		(Output voltage is equal to input voltage)		
	Qty	1 SIM Card Slot		
SIM Card	Spec	Drawer type slot, support 1.8V/3V SIM/UIM card		
Silvi Card		(NANO)		
	Protection	Built-in 15KV ESD Protection		
SD Card	Qty	1 SD Card slot reserved for future development		
	Qty	1*program downloading+1* program debugging		
USB Port	Spec	Micro USB OTG		
	Protection	Over Current Protection		
	Antenna Qty	1		
	Antenna Type	SMA Hole Type		
4G Network		GSM/EDGE:900,1800MHz		
(Optional)	L-E version	WCDMA:B1,B5,B8		
		FDD-LTE:B1,B3,B5,B7,B8,B20		
		TDD-LTE:B38,B40,B41		
	L-CE version	GSM/EDGE:900,1800MHz		



		WCDMA:B1,B8
		TD-SCDMA:B34,B39
		FDD-LTE:B1,B3,B8
		TDD-LTE:B38,B39,B40,B41
	L-A version	WCDMA:B2,B4,B5
		FDD-LTE:B2,B4,B12
		GSM/EDGE:850,900,1800MHz
	L-AU version	WCDMA:B1,B2,B5,B8
		FDD-LTE:B1,B3,B4,B5,B7,B8,B28
		TDD-LTE:B40
	L-AF version	WCDMA:B2,B4,B5
	L-AF Version	FDD-LTE:B2,B4,B5,B12,B13,B14,B66,B71
		GSM:900,1800
	CAT-1 version	FDD-LTE:B1,B3,B5,B8
		TDD-LTE:B34,B38,B39,B40,B41
		Steady light if device is powered on
	RUN	Flickering if device is running
		Off if device is not running
	NET	Flickering if communication is over Ethernet network
		Steady light if communication is over 4G network
Indicator		Off if no data communication
		Flickering if device is transmitting data
	TXD	Off if there's no data transmitting
	RXD	Flickering if device is receiving data
		Off if there is no data receiving
	Internet	
	Protocol	IPV4, TCP/UDP, DHCP, DNS, etc
		Static IP / DHCP
	IP Retrieving Transmission	
		Support Transparent Transmission
	DNS	Support Domain Name Resolution
Software	Configuration	PC configuration software, support WIN XP, WIN 7, WIN
Parameter		8 and WIN 10
	Internet Cache	Transmitting: 8Kbyte; Receiving: 8Kbyte
	Size	
	Login Package	Support custom login package
	Heartbeat	Support custom heartbeat package
	Package	ouppoir ousion noarbear paorage
	гаскауе	
Safety	MTBF	≥100,000 hours



		IEC 61000-4-2 (ESD) Level 4		
		IEC 61000-4-3 (RS) Level 4		
		IEC 61000-4-4 (EFT) Level 4		
		IEC 61000-4-5 (Surge)Level 3		
		IEC 61000-4-6 (CS)Level 4		
		IEC 61000-4-8 (M/S) Level 4		
	Other	CE, FCC		
	Working	-40~80℃, 5~95% RH		
Environment	Storage	-40~85℃,5~95% RH		
	Case	Metal Case		
	Size	30mm×83mm×110mm(L*W*H)		
Others	Protection	IP30		
Others	Grade			
	Net Weight	291.2g		
	Mounting	Wall-Mounting, DIN-Rail Mounting		

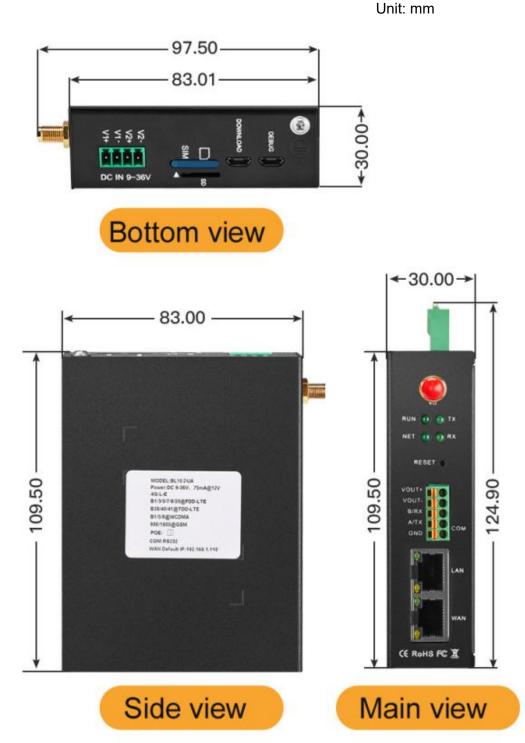
#### **1.6 Model Selection**

			СОМ			POE PD
Model No.	WAN	LAN	(Default is RS485	OPC-UA	4G	(Powered
			Optional RS232)			Device)
BL102	1	1	1	X	$\checkmark$	Optional
BL102E	1	1	1	Х	Х	Optional
BL102UA	1	1	1	$\checkmark$	Х	Optional



2 Hardware Introduction

#### 2.1 Outline Dimension





#### 2.2 Power Source Interface



2 optional channels of power input support DC 9~36V voltage with inverse connection protection.

## 2.3 SIM & SD Card Slots



Make sure device is powered off before inserting or removing SIM card. Insert SIM card Picking PIN into the hole with tiny force to eject out the card tray.

Note: Place the device flat like above picture if inserting or removing SIM card.

#### 2.4 Debugging & Upgrading Interface



DEBUG is the interface for debugging, DOWNLOAD is the interface for upgrading.

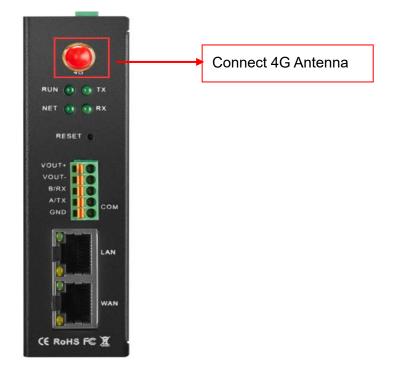
#### 2.5 Gateway Grounding



Before connecting the device, please do equipment grounding with grounding screw to prevent electromagnetic interference



#### 2.6 4G Antenna Interface



#### 2.7 LED Indicator



#### 2.8 Reset Button

LED Indicator Introduction			
Item Name Status Description			Description
RUN	Device Running	Flickering	Device running normally
RUN	Indicator	Off	Device faulty
	Ethernet or 4G	Flickering	Ethernet Communication
NET	Communication	On	4G communication
	Indicator	Off	No network
		Flickering	Serial port is transmitting
тх	Data Transmitting		data
	Indicator	Off	No data transmitting in
			serial port
		Flickering	Serial port is receiving
RX	Data Receiving Indicator		data
RX		Off	No data receiving in serial
			port
Note: RUN indicator will be on if device is powered. If it's not on, please			
check whether there's reverse wiring or power source problem.			

Once gateway is running normally, use a PIN to press RESET button for 10seconds until RUN
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indicator is off. Gateway BL102 will return to default factory setting.



#### 2.9 COM Port & Power Output Interface



RS485 or RS232 and Power Output			
Item	Description		
VOUT+	Positive Pole of Power Output		
VOUT-	Negative Pole of Power Output		
B/RX	RS485 data-(B)/ receiving data		
A/TX	RS485 data +(A)/ transmitting data		
GND	Grounding		
Note: Power output voltage is equal to input voltage:			
DC 9~36V			

#### 2.10 WAN & LAN Ports

Ethernet Network Port			
Indicator Color Status Description			



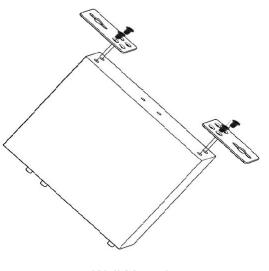


Rate	Green	ON	100Mbps mode
Indicator		OFF	10Mbps mode
Network Link Indicator	Yellow	ON	Connected
		Flickering	It's transferring data
		OFF	Disconnected

#### **3 Gateway Mounting**

Gateway BL102 can be placed on desk, mounted on the wall and DIN-Rail.

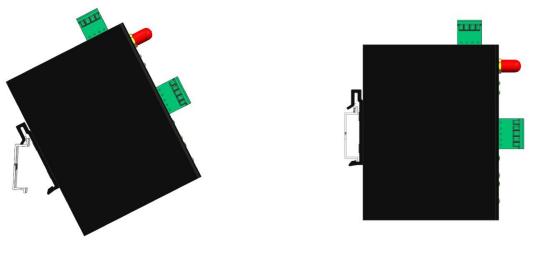
#### 3.1 Wall-Mounting



Wall Mounting



#### 3.2 DIN Rail Mounting



DIN Rail Assembling

**DIN Rail is Assembled** 

#### **4** Configuration Software Introduction

#### 4.1 Login to Configuration Software

Connect BL102 to router or switch through WAN port with standard direct network cable or cross network cable. Make sure BL101 and PC are in the same local area network. If it's necessary to connect the gateway to PC directly, use standard cross network cable to connect through BL101 LAN port. (If BL101 is connected to PC directly, PC IP must be specified to 192.168.3.1 as default LAN IP of gateway is 192.168.3.1 from factory setting)

Note: WAN port IP is retrieved automatically, LAN port IP is 192.168.3.1 from factory setting

Connecting BL102 to Router, Switch or PC with following way.



#### 4.1.1 Open Configuration Software

Double click BL10x\_Configurator\_V1.0 on PC to run BL102 configuration software and enter below

#### page

	eway ConfigUrationTool V							-
Device Search	New Configuration	Import Configuration File	Export Configuration File	Aread Data	➡ Save Data	Monitoring	Log Axi	吾言 ①Abo

#### 4.1.2 Search for Devices

Click Device Search to get all devices which are in the same local area network with PC. If no device is found, please follow the procedure on the right notice box to check the root cause. Below is the example of connecting Gateway BL102 with switch through WAN. A device with IP 192.168.1.164 is searched out.



ſ	Device Selection	×
	Device IP         Device Mod         Version         Device Name           192.168.1.164         BL102UA         V1.0         KingPigeon	Pouble-click the device in the selected list to enter the device setting interface. Inable to search the device, please check the following: After the device is turned on normally, the RUN Indicator light is always on for 1 minute.The ystem is in startup state, and the device cannot be searched at this time. One minute after starting the device, please check whether the indicator light RUN flashes.If ot, check whether the power wiring and socket are normal. Please check whether the the XAN indicator is normal at the network port(orange light blinks, yreen light is always on). If all the above three conditions are normal, please confirm the computer Settings for the plowing operations: where hall be connected to the computer through the network cable, the network wable shall be connected to the LAN port of the device.The default IP of the LAN port is 92168.31. If if the device is connected to the LAN via a switch, make sure that the network cable is onnected to the WAN port of the device. Make sure that the computer and the device are in he same LAN segment.

#### 4.1.3 Connecting Gateway

Double click the device to be configured (For example, double click device with IP 192.168.1.164). Reading success message will be shown in prompting box. Click confirm to enter configuration page.

4G Industrial Gateway ConfigUrationTool V1.0 v		
Device Search 📑 New Configuration 📄	mport Configuration File 💾 Export Configuration File 🛧 Read Data 🛓 Save Data 🚇 N	Aonitoring 自Log Ag语言 ①Abo
<ul> <li>BL102UA</li> <li>COM1</li> <li>LAN</li> <li>WAN</li> <li>Ad</li> <li>Alarms And Events</li> <li>TaskPlan</li> <li>DataServices</li> <li>Transparent transmission</li> <li>Modbus RTU = Modbus TCP</li> <li>Modbus RTU = Modbus TCP</li> <li>Modbus TCP Server</li> <li>OPC UA</li> <li>Cloud</li> <li>MQTT Client One</li> <li>MQTT Client One</li> <li>Ali IOT Cloud</li> <li>Ali IOT Cloud</li> <li>Ali IOT Cloud</li> <li>Kingpigeon MQTT</li> <li>Kingpigeon Modbus</li> </ul>	Basic Information       Red represents the online status, gray rep         Gateway Name       KingPigeon       (MAX15)         Gateway Time       20.06:20 09/10/2021       Kingpigeon MdDus Online Status       Image: Comparison MdT Online Status         Device Model       BL102UA       MQTT Client One Online Status       Image: Comparison MdT Online Status         Version       V1.0       MQTT Client Two Online Status       Image: Comparison MdT Online Status         Version       V1.0       MQTT Client Two Online Status       Image: Comparison MdT Online Status         4G Module Model       EC20CEFLIGR06A05M1G       HUAWEI IOT Cloud Online Status       Image: Comparison MdT Online Status         IMEI       861942050219741       AWS IOT Cloud Online Status       Image: Comparison MdT Online Status         Mobile operators       CHINA MDBILE       192.168.1.1       Ping         SIM Registration Status       SIM Registration Status       Refresh	resents the offline status           Port         Device Name         Online Status

## 4.2 Configuration Software Introduction

## 4.2.1 System

Device Search 🔀 New Configuration 👘 Ir		Export Configuration File	▲ Read Data ★ Save Data	Monitori	ng 📋 Log 🔺	文语言 🕕
	Basic Information —					
( <b>%</b> ) 4G		1	Red represents the online status, gra	y represents th	e offline status	
Alarms And Events	Gateway Name	KingPigeon (MAX15)	Kingpigeon Modbus Online Status	Port	Device Name	Online Statu
🗳 TaskPlan	Gateway Time	20:06:20 09/10/2021	Kingpigeon MQTT Online Status	•		
🛱 📲 DataServices	Device Model B	L102UA	MQTT Client One Online Status	•		
Iransparent transmission	Version	V1.0	MQTT Client Two Online Status	•		
	Signal Strength	24 Normal Range(14-31)	Ali IOT Cloud Online Status	•		
	4G Module Model	EC20CEFILGR06A05M1G	HUAWEI IOT Cloud Online Status	•		
Cloud	IMEI	861942050219741	AWS IOT Cloud Online Status			
MQTT Client One	Mobile operators	CHINA MOBILE	192.168.1.1 Ping	•		
MQTT Client Two	SIM ICCID	89860043191574315142	www.baidu.com Ping	•		
- @ Ali IOT Cloud	SIM Registration Status 🔴					
HUAWEI IOT Cloud			Refresh			
AWS IOT Cloud						
🖲 Kingpigeon MQTT						

System Function					
ltem	Description				
Device Search	Search for all BL102 gateways in the same local area network				
New Configuration	Open a new default configuration file				
Import Configuration File	Import gateway configuration file				
Export Configuration File	Export gateway configuration file				
Read Data	Read logged-in BL102 gateway configuration parameters				
Save Data	Save all configuration parameters by clicking it				
Monitoring	Monitor connected device value				
	System running log.				
Log	If device issue, click save log to send it to specified email box				
Language	Click it to change language to English				
About	Software Version, Issue Date, Firmware upgrade information				
E	Basic Information of Gateway BL101				
ltem	Description				
Gateway Name	Default Name is KingPigeon				
Gateway Time	Local time of reading gateway				
Device Model	Read device model number				
Version	Read device version				
Signal Strength	4G module signal value. If it's less than 14, it means weak				
	signal. Full signal value is 31				

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4G Module Model	Read 4G module model. If it's null, it means no 4G module
IMEI	Device IMEI code
Mobile Operators	SIM card service provider
SIM ICCID	Read SIM card ICCID
SIM Registration	Red indicates SIM card is registered.
Status	Gray indicates SIM card is not registered,
King Pigeon Cloud	Red indicates King Pigeon cloud is connected via Modbus
via Modbus Online	Gray indicates King Pigeon cloud is unconnected via
Status	Modbus
King Pigeon Cloud	Red indicates King Pigeon cloud is connected via MQTT
via MQTT Online	Gray indicates King Pigeon cloud is unconnected via MQTT
Status	
MQTT Client One	Red indicates MQTT Client One is connected
Online Status	Gray indicates MQTT Client One is unconnected
MQTT Client Two	Red indicates MQTT Client Two is connected
Online Status	Gray indicates MQTT Client Two is unconnected
Ali IOT Cloud Online	Red indicates Ali Cloud is connected
Status	Gray indicates Ali Cloud is unconnected
HUAWEI IOT Cloud	Red indicates HUAWEI Cloud is connected
Online Status	Gray indicates HUAWEI Cloud is unconnected
AWS IOT Cloud	Red indicates AWS is connected
Online Status	Gray indicates AWS is unconnected
	Default factory setting Ping 192.168.1.1 gateway, IP can be
102 168 1 1 Ding	changed. It's gateway through WAN. Click Ping button to
192.168.1.1 Ping	check local area network status. Red indicates local area
	network is OK. Gray indicates local area network problem.
	Default factory setting Ping Baidu website. Web address can
www.baidu.com Ping	be changed. Wide area network status can be checked by
	clicking Ping. Red indicates wide area network is OK. Gray
	indicates internet communication problem.
Device Online Status	Red indicates gateway is communicating with slave devices
Prompting Box	Gray indicates gateway fails to communicate with salve
	device

## 4.2.2 COM Port Configuration

#### 4.2.2.1 COM Port Attribute Configuration

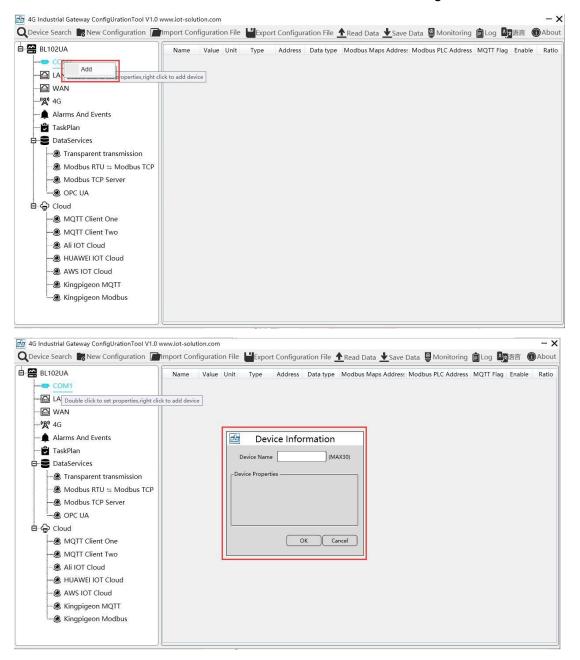
Double click COM1. Serial Port Attributes box will pop up for configuration

dG Industrial Gateway ConfigUrationTool V1.0					_	_	- ×
Q Device Search 🔚 New Configuration 盾	Import Configuratio	on File Export Cor	nfiguration File	▲ Read Data ▲ Sa	ave Data 🚇 Monitoring	Log Ax语言	About
BL102UA	Name Value	Unit Type Add	dress Data type	Modbus Maps Add	res: Modbus PLC Address	MQTT Flag Enable	Ratio
LAN Double click to set properties,right	click to add device						
- 🖾 WAN		📠 Serial Po	rt Attribute:	s			
( <b>%</b> ) 4G		Mode Selection	Collection	Ý			
Alarms And Events		Communication Protoc	ol				
定 TaskPlan		Device Brand	Mitsubishi				
DataServices							
		Device Model	FX3U	~			
● Modbus RTU 🛱 Modbus TCP							
Modbus TCP Server		Serial Port Settings					
OPC UA		Baud 9600 v	) Stop Bit (	1 ~)			
e 🗘 Cloud		Data Bit 7 ×	Parity Bit E	ium ×			
MQTT Client One							
MQTT Client Two							
🕘 Ali IOT Cloud			ОК	Cancel			
HUAWEI IOT Cloud							
AWS IOT Cloud							
🖲 Kingpigeon MQTT							
Kingpigeon Modbus							

	Serial Port Attributes					
	ltem	Description	Default			
		Select mode:				
Ma	de Selection	Collect/Transparent	Collect			
IVIC		Transmission/Modbus RTU to	Collect			
		Modbus TCP				
	Device Brand	Select from Modbus, Mitsubish,	Mitsubishi			
Protocol	Device brand	Siemens	IVIIISUDISIII			
	Device Model	Select PLC model number	FX3U			
		Select from "2400", "4800",				
	Baud Rate	"9600", "19200", "38400",	9600			
Serial		"57600", "115200"				
Port	Stop Bit	Select "1Bit" or "2Bit"	1Bit			
Settings	Data Bit	Select "7Bit" or "8Bit"	7Bit			
	Parity Bit	Select "None", "Even" ,"Odd"	Even			
	OK	Confirm COM configuration				
	Cancel	Cancel COM port configuration				

#### 4.2.2.2 Add COM Port Connected Device

Right click COM1 and click Add to add PLC. Device configuration box will pop up. For the added device, double click it to show device configuration information. Right click to delete device. Note: Maximum 50 same model PLC data can be collected through COM





BL102UA	Name	Value Unit	Type	Address	Data type	Modbus Map	s Address M	Modbus PLC Address	MQTT Flag	Enable	Rati
COM1											
Delete											
	ht click to de	lete the device									
@ WAN											
<b>%</b> 4G											
🏚 Alarms And Events											
🔁 TaskPlan											
DataServices											
Transparent transmission											
• Modbus RTU ≒ Modbus TCP											
• Modbus TCP Server											
OPC UA											
É⊕ Cloud											
• MQTT Client One											
MQTT Client Two											
• Ali IOT Cloud											
HUAWEI IOT Cloud											
@ AWS IOT Cloud											
Kingpigeon MQTT											

I	Device Information				
ltem	Description				
Device Name	Name of PLC to be connected				
Device Preperty	Configure it according to different PLC model.				
Device Property	Blank means no configuration items				
OK	Confirm device configuration				
Cancel	Cancel device configuration				

Note: For different PLCs, the protocols are different and the configuration items are different. For example, if selecting Modbus as device brand, then the configuration is as below table:

	Device Information					
Item		Description	Default			
Device Name		Name of Device to be connected to COM				
	Station ID	COM port device Modbus communication				
Device	Station ID	address				
	16-bit Data Type	Select from "AB" and "BA"	AB			
Property	22 hit Data Tura	Select from "ABCD", "DCBA", "BADC"	ABCD			
	32-bit Data Type	and "CDAB"				
ОК		Confirm device configuration				
	Cancel	Cancel device configuration				

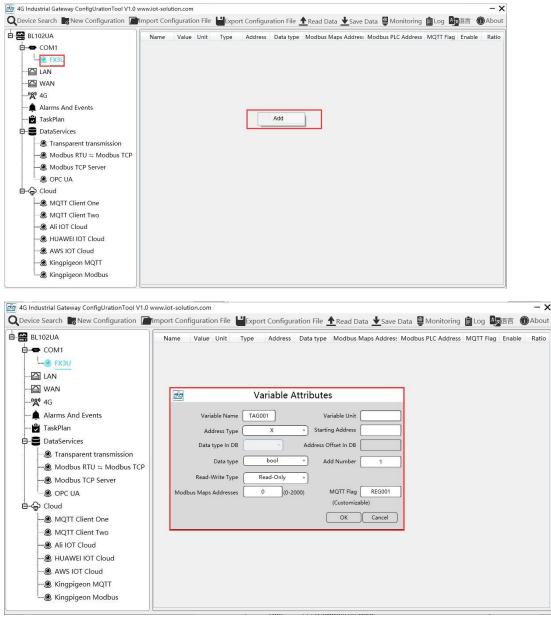
#### 4.2.2.3 Add COM Port Device Datapoint

Click device name and then right click the box on the right. Add box will pop up. Click Add to enter datapoint configuration box and configure PLC datapoint. Right click the added datapoint to delete



it. Double click the datapoint to edit it. To add more datapoints, right click the box and perform the

#### same procedures.



	Datapoints Configuration				
ltem	Description				
Variable Name	Name of Added Datapoint				
Variable Unit	Datapoint unit, fill it as required, can be blank				
Address Type	Select PLC Register Address Type				
Starting Address	PLC datapoint address				
DB Block Data	Select from "DBX", "DBB", "DBW", "DBD". Only configure it if				
Туре	PLC supports DB block				
DB Block Address	DB Block address offset value				
Offset					
Data Type	Select from Boolean, 16-bit unsigned integer, 16-bit signed				



	integer, 32-bit unsigned integer, 32-bit signed integer, 32-bit
	single precision floating point
Add Number	Datapoint qty
Read-Write Type	Select "read only", "read and write"
Ratio	Only set for numeric data. Data can be magnified or minified
Ratio	with certain ratio before sending to cloud
Modbus Mapping	Address in Gateway where datapoints are stored.
Address	Boolean: 0~2000 addresses, Numeric: 0-2000 addresses.
MQTT flag	Datapoint MQTT mark, can be any mark
ОК	Confirm datapoint setting
Cancel	Cancel datapoint setting

BL102UA	Name	Value	Unit	Type	Address	Data type	Modbus Maps Address	Modbus PLC Address	MQTT Flag	Enable	Rati
e⊶e com1	TAG001			Ŷ	0	bool	0	000001	REG001	ble And W	none
EX3U	TAG002			D	Add		0	400001	REG002	ble And W	1
					Delet	e					
- 🖾 LAN											
🖾 WAN											
<b>'(ڲ'</b> 4G											
Alarms And Events											
🔁 TaskPlan											
DataServices											
Transparent transmission											
• Modbus RTU ≒ Modbus TCP											
• Modbus TCP Server											
OPC UA											
∃-⇔ Cloud											
MQTT Client One											
- @ MQTT Client Two											
- @ AWS IOT Cloud											
Kingpigeon Modbus											

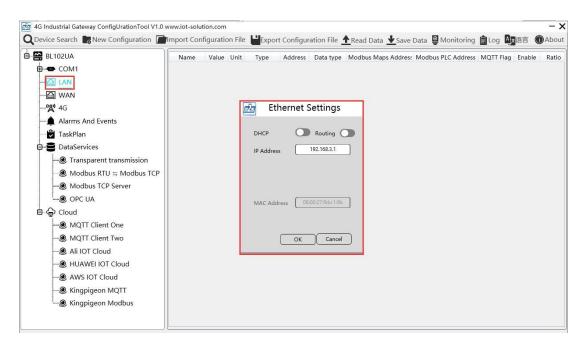
Right click datapoint to delete it and double click it to edit it.

## 4.2.3 LAN Port Configuration

#### 4.2.3.1 LAN Port Attribute Configuration

Double click LAN port to enter setting page. Factory default IP of LAN is 192.168.3.1. Auto IP address distribution and routing functions are turned off in factory setting.





	LAN Port Configuration						
Item	Description						
DHCP	Green indicates auto IP distribution for LAN is enabled						
DHCF	Gray indicates auto IP distribution for LAN is turned off						
Douting	Green indicates routing function is enabled.						
Routing	Gray indicates routing function is turned off						
IP Address	LAN port IP Address						
MAC	LAN port MAC						
OK	Confirm LAN port Setting						
Cancel	Cancel LAN port setting						

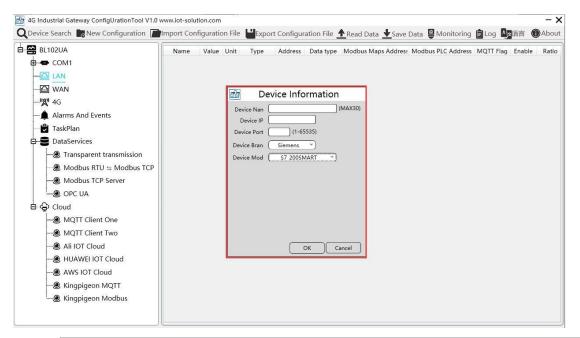
#### 4.2.3.2 Add Device to LAN Port

Right click LAN and clik Add to enter device configuration page. PLC data can be collected through Gateway BL102 LAN Port or through switch which is connected with LAN.

Note: Total 50 PLCs can be connected through LAN and WAN, different models from different PLC makers can be connected simultaneously.



😫 BL102UA	Name	Value	Unit	Type	Address	Data type	Modbus Ma	ps Address	Modbus PLC	Address	MQTT Flag	Enable	Ratio
COM1													
LAN													
W. Add properties,right click	to add device	,											
(X) 4G	to dua device												
🌲 Alarms And Events													
- 🔁 TaskPlan													
DataServices													
Transparent transmission													
@ Modbus RTU ≒ Modbus TCP													
Modbus TCP Server													
OPC UA													
È-♀ Cloud													
MQTT Client One													
MQTT Client Two													
🖲 Ali IOT Cloud													
HUAWEI IOT Cloud													
AWS IOT Cloud													
- 🖲 Kingpigeon MQTT													



	configure it if Modbus is selected as device brand
16-bit Data Type	Select "AB" or "BA", only configure it if Modbus is selected as
	device brand.
32-bit Data Type	Select"ABCD", "DCBA", "BADC" or "CDAB", only configure it if
	Modbus is selected as device brand.
ОК	Confirm LAN port device setting
Cancel	Cancel LAN port device setting

## 4.2.3.3 Add LAN Port Device Datapoint

Follow the same procedure of adding datapoints for COM port device to add datapoints of LAN port device

Add COM Port Device Datapoint

## 4.2.4 WAN Port Configuration

## 4.2.4.1 WAN Port Attribute Configuration

BL102UA		Value Unit		Address		Read Data	 lodbus PLC Address	-	 Rat
	to add device	Ì I	<u>त्रील</u> ह	thernet	Settings				
🌲 Alarms And Events									
TaskPlan			Auto IP		C				
DataServices			IP Add	ess	192.168.1.164	ר			
• Transparent transmission					055 055 055 0	_			
- @ Modbus RTU ≒ Modbus TCP			Subnet	Mask	255.255.255.0				
• Modbus TCP Server			Gatewa	у 🗌	192.168.1.1				
OPC UA			MAC A	ddress	08:00:27:4f:82:8b				
Cloud					114.114.114.114				
MQTT Client One			DNS	L	4,   4,   4,   4.   4.				
MQTT Client Two				ОК	Cancel				
- @ Ali IOT Cloud						_			
HUAWEI IOT Cloud									
AWS IOT Cloud									
Kingpigeon MQTT									
Kingpigeon Modbus									

	WAN Port Configuration							
	ltem	Description						
	Auto IP	Green indicates auto retrieving IP						
1 0	of 88 Pages King Pigeon Communication Co., Ltd.							

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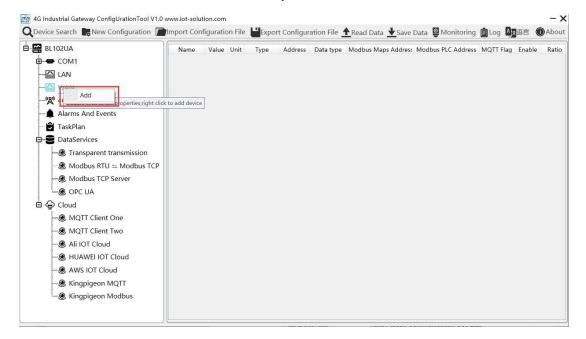
#### King Pigeon Communication Co., Ltd. www.iot-solution.com

	Gray indicates IP is specified
IP Address	Current IP Address of WAN Port
Subnet Mask	Current WAN Subnet Mask
Gateway	Current WAN Gateway Address
MAC Address	WAN port MAC address
DNS	Current WAN port DNS server
OK	Confirm WAN port setting
Cancel	Cancel WAN port setting

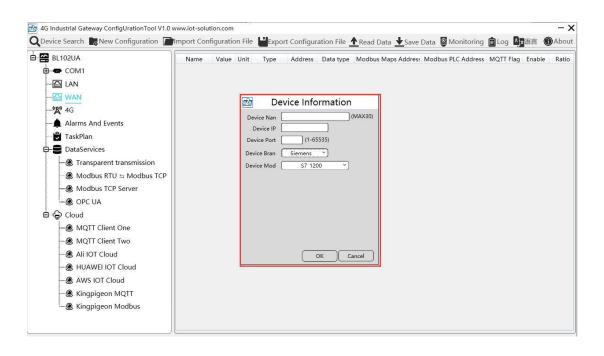
#### 4.2.4.2 Add Device to WAN Port

Right click WAN and clik Add to enter device configuration page. PLC data can be collected through Gateway BL1012 WAN Port or through switch which is connected with WAN.

Note: Total 50 PLCs can be connected through LAN and WAN, different models from different PLC makers can be connected simultaneously.







	WAN Port Device Configuration
Item	Description
Device Name	Name of WAN Port PLC
Device IP	IP Address of WAN Port PLC
Device Port	WAN port PLC Port
Device Brand	Select from Siemens, Modbus
Device Model	Select PLC Model
Station ID	WAN port device Modbus communication address, only configure it if Modbus is selected as device brand.
16-bit Data Type	Select "AB" or "BA", only configure it if Modbus is selected as device brand.
32-bit Data Type	Select "ABCD", "DCBA", "BADC" or "CDAB", only configure it if Modbus is selected as device brand.
OK	Confirm WAN port device setting
Cancel	Cancel WAN port device setting

#### 4.2.4.3 Add WAN Port Device Datapoint

Follow the same procedure of adding datapoints for COM port device to add datapoints of WAN port device

Add COM Port Device Datapoint

#### 4.2.5 4G Network Introduction

Double click 4G to enter APN setting box.

Note: It's not necessary to set APN for China mainland 4G network. If no 4G module in the device, it's not needed to set it either

BL102UA	Basic Information
LAN     WAN     WAN     Double click to set properties     TaskPlan     DataServices     Transparent transmission     Modbus RTU =; Modbus TCP	Red represents the online status, gray represents the offline status         Gateway Name       KingPigeon       (MAX15)         Gateway Time       2011:08 09/10/2021         Device Model       BL102UA         Version       V1.0       and does not need to configure this parameter.       and does not need to configure this parameter.
Modbus TCP Server	AG Module Model EC20CEFILGR06A05M1G IMEI 861942050219741 Mobile operators CHINA MOBILE SIM ICCID 89860043191574315142 SIM Registration Status
Kingpigeon MQTT     Kingpigeon Modbus	

	4G Configuration						
ltem	Description						
APN	Access Point Name of SIM card cellular network						
User Name	User Name of SIM card cellular network						
Password	Password of SIM card cellular network						

#### 4.2.6 Alarms and Events Configuration

Double click Alarms and Events to enter setting box. Alarm points, actions and alarm recovery actions can be set according to requirement

## 4.2.6.1 Alarm Point Configuration

4G Industrial Gateway ConfigUrationTo	ol V1.0 www.iot-solution.com		- >
Q Device Search Row Configuration	on Import Configuration File	Export Configuration File 🛧 Read Data 🛨 Sa	ve Data 🚇 Monitoring 📋 Log 💁语言 🐠 Abou
BL102UA	Name Port	Device name Association Point Nam High Limit L	ow Limit Alarm Type Alarm ACK Time MQTT Flag
⊕⊶ <del>en</del> com1			
🖾 LAN			
🖾 WAN			
<b>'(X)'</b> 4G		Alarms And Events	
Alarms And Events	Name	Alarm Trigger Action	Alarm Release Action
DataServices	MQTT Flag ALARM001	Port Device Write Point Name Write Value	Port Device Write Point Name Write Value
	ociation Point Name Add		
- 🖲 Modbus RTU ≒ M	High Limit		
····· Modbus TCP Serv	Low Limit		
OPC UA	Alarm Type Normally Open	ă II	
È 🔶 Cloud			
MQTT Client One	Alarm ACK Time (1-999)	s	
MQTT Client Two			OK Cancel
- Ali IOT Cloud			
HUAWEI IOT Cloud			
AWS IOT Cloud			
🖲 Kingpigeon MQTT			
Emg Kingpigeon Modbus			

BL102UA	Name	Port D	evice na	ime Associ	iation Point Nam Hig	h Limit Low Limit	t Alarm Type Alar	rm ACK Time MQTT
EAN		-		(				
De WAN		2	Add \	/ariable P	oint	_		
( <b>X</b> ) 4G		Variable Point Type	Port	Device	Variable Point Name			
Alarms And Events		Variable Point	COM1	FX3U	TAG001			
		Variable Point	COM1	FX3U	TAG002			
	-	Variable Point	LAN	57-200SMAR1	М			
		Variable Point	LAN	37-200SMAR1	VB0	ion ———		
Name		Variable Point	WAN	S7-1200	Q0	Virita Raint Nan	weWrite Value	
MQTT Flag ALARM	001	Variable Double cl	ick to dis	splay variable p	oint properties, and cli	k to select variable p	point	
Association Point Name	Add							
High Limit								
Low Limit								
Alarm Type Normally C								
Marni Type (Normany C	pen							
Alarm ACK Time	(1-999)s						]	
						ОК	Cancel	
AWS IOT Cloud								]
Kingpigeon MQTT								

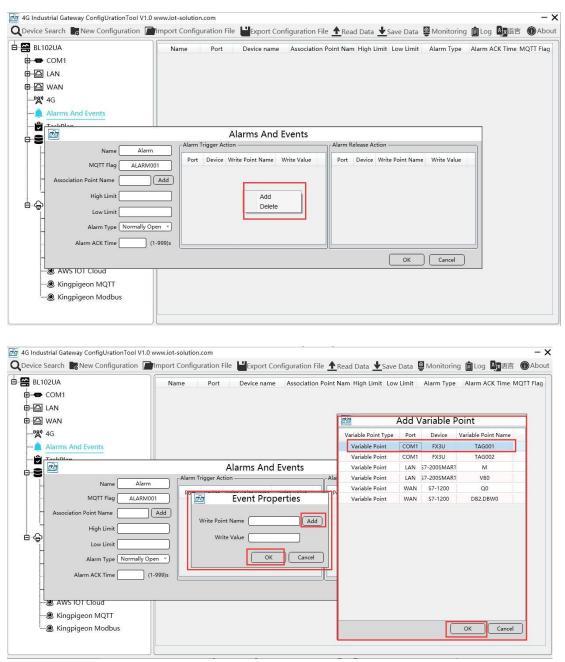
Alarm and Events Configuration			
Item	Description		
Name	Name of Alarm Point		
MQTT Flag	MQTT flag of alarm point, can be randomly set		
Association Point Name	Select alarm point and click Add. Datapoint box will pop up. Click the point to be set for alarm and click OK to confirm. Double click datapoint to enter datapoint attribute page		
High Limit	High Limit alarm value of numeric datapoints		
Low Limit	Low limit alarm value of numeric datapoints		



Digital Alarm Type	Select from digital alarm mode: Normally Open or Normally Close	
Alarm ACK Time	Within alarm acknowledge time, if data will recover to normal	
	value, no alarm will be triggered. Otherwise it will generate alarm	
OK	Confirm alarms and events setting	
Cancel	Cancel alarms and events setting	

#### 4.2.6.2 Alarm Event Configuration

Right click Alarm Trigger Action box and click Add to enter Event configuration box for setting actions to be performed when alarm is triggered. Right click Alarm Release Action box to set actions to be performed when alarm is released

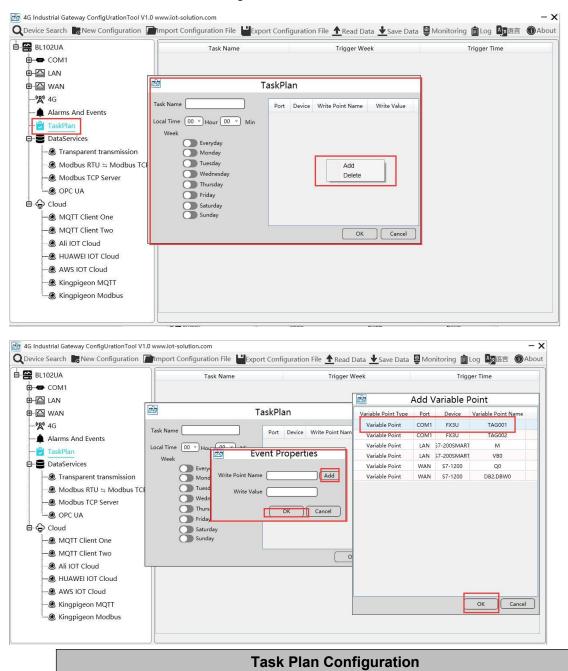




Event Configuration				
Item	Introduction			
Write Point Name	Write Point Name is generated based on selected datapoint.			
	Click Add, select datapoint and click OK to confirm. Double click			
	datapoint to view its attributes			
Write Value	Write datapoint value. For Boolean value, select 1 or 0			

## 4.2.7 Task Plan Configuration

Double click Task Plan to enter configuration box. Move mouse cursor to the right box, right click the box and click Add to enter configuration box.



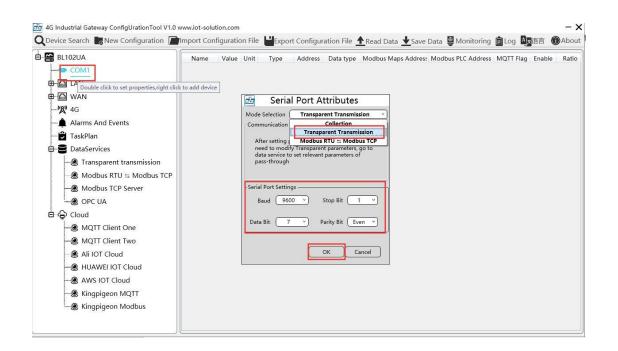


ltem	Description
Task Name	Name of Task Plan
Local Time	Set time to perform the planned task (local time)
Week	Set week day to perform the planned task
	Write Point Name will be generated based on selected
Write Point Name	datapoint.Click Add , select the datapoint and click OK to
	confirm. Double click datapoint to view its attributes
Write Value	Write datapoint value. For Boolean value, select 1 or 0
ОК	Confirm Task Plan setting
Cancel	Cancel Task Plan setting

#### 4.2.8 Data Service

#### 4.2.8.1 Transparent Transmission

Set COM mode to Transparent Transmission, set COM parameters and then configure Transparent Transmission parameters





BL102UA	Basic Informatio	10						
COM1								
Man LAN	Π	Transparent	transmissio	n	1			
- 🖾 WAN		-						
		Serial Port Choice ( Communication Protocol —	COMT VJ		poline status, gray repr	econts th	e offline status	
Alarms And Events		Mode Selection	TCP Client	-	bus Online Status	Port	Device Name	Online Statu
	l 1	wide selection	TCP Client	9		COM1	FX3U	
- 🔁 TaskPlan	•				Online Status 🛛 🌑	WAN	\$7-1200	
- DataServices		Server IP/ Domain Name	192.168.3.1	(MAX100)	Online Status	LAN	S7-200SMART	
•••• Transparent transmission		Server Port	5000	(1-65535)	Online Status 🛛 🌑			
Modbus RTU      S Modbus TCP     Modbus TCP     S								
	Sig	Login Message		(MAX100)	ne Status 🛛 🌑			
	4G N			]	d Online Status			
OPC UA		Login ACK Message		(MAX100)				
G Cloud		Heartbeat Message		(MAX100)	nline Status 💮			
MQTT Client One	Moo				Ping 🔴			
100 000		Heartbeat ACK Message		(MAX100)	Ping O			
••••• MQTT Client Two	SIM Regist	Heartbeat Interval	60 (1-999s)					
🖳 🖲 Ali IOT Cloud								
HUAWEI IOT Cloud			ОК	Cancel	1			
				<u> </u>	<u> </u>			
- 🕑 Kingpigeon MQTT								

Transparent Transmission Configuration					
ltem	Description				
Serial Port Choice	COM1				
Mode Selection	Select Gateway as "TCP Server" or "TCP Client"				
Coloct Notwork Dort	Only set it when BL102 Gateway is used as TCP server				
Select Network Port	Select WAN or LAN				
	If BL102 is used as server, it can't be set but				
Server IP	automatically show selected WAN or LAN IP				
/Domain Name	If BL102 is used as client, input transparent transmission				
	server IP				
Monitoring Port	If BL102 is used as server, input monitoring port				
/Server Port	If BL102 is used as client, input server port				
Login Message	Data Package of logging in to server				
Login ACK Message	Data Package of server response to login				
Heartbeat Message	Heartbeat Data Package to keep connection				
Heartbeat ACK	Data Package of server response to heartbeat				
Message					
Heartbeat Interval	Cycle time of sending heartbeat package. Default is 60s				
ОК	Confirm Transparent Transmission setting				
Cancel	Cancel Transparent Transmission setting				

### 4.2.8.2 Modbus RTU to Modbus TCP

Set COM mode to Modbus RTU to Modbus TCP, set COM parameter and then configure Modbus RTU to Modbus TCP parameters in Data Service



L102UA	Name Value Unit Type Address Data type Modbus Maps Address Modbus PLC Address MQTT Flag Enable
COM1	
LAN Double click to set properties, right cl	lick to add device
WAN	🚾 Serial Port Attributes
<b>&amp;'</b> 4G	Mode Selection Modbus RTU ± Modbus TCP V
Alarms And Events	Communication Collection
🕈 TaskPlan	After setting  Modbus RTU  Modbus TCP
DataServices	need to modify the Modbus NUU to Modbus
	TCP parameters, then go to the data service
Modbus TCP Server	-Serial Port Settings
OPC UA	Baud 9600 v Stop Bit 1 v
Cloud	
MQTT Client One	Data Bit 8 v Parity Bit None v
Ali IOT Cloud	OK Cancel
HUAWEI IOT Cloud	
AWS IOT Cloud	
- 🖲 Kingpigeon MQTT	
Kingpigeon Modbus	
dustrial Gateway ConfigUrationTool V1.0	
ce Search 📑 New Configuration 📄 BL102UA	www.iot-solution.com Import Configuration File 世Export Configuration File 全Read Data 史Save Data 學Monitoring 自Log 國語言 ⑧
ce Search RNew Configuration R SL102UA COM1	Import Configuration File 💾Export Configuration File 🛧 Read Data 🚽 Save Data Og Monitoring 自Log 函語 🔞
ce Search 😹 New Configuration 🔎 BL102UA 🖿 COM1 🎱 LAN	Import Configuration File 💾Export Configuration File 🛧 Read Data 🚽 Save Data Og Monitoring 自Log 函語 🔞
ce Search 📑 New Configuration 📄 BL102UA 🖻 COM1 🖳 LAN 🎱 WAN	Import Configuration File 💾Export Configuration File 🛧 Read Data 🚽 Save Data Og Monitoring 自Log 函語 🔞
ce Search <b>R</b> New Configuration BL102UA COM1 LAN WAN & 4G	Import Configuration File Leport Configuration File 全Read Data 全Save Data OMOnitoring Log 国語言 ④ Basic Information Red represents the online status, gray represents the offline status
ce Search R New Configuration R BL102UA COM1 LAN WAN A 4G Alarms And Events	Import Configuration File Leport Configuration File 全Read Data Save Data Monitoring Log 国語言 ④ Basic Information Red represents the online status, gray represents the offline status Gateway Name KingPigeon (MAX15) Kingpigeon Mobus Online Status Port Device Name Online Statu
ce Search R New Configuration BL102UA COM1 LAN WAN WAN Alarms And Events TaskPlan	Import Configuration File Leport Configuration File ★ Read Data Save Data Monitoring Log Log Log Log Log Log Log Log Log Lo
ce Search R New Configuration R L102UA COM1 LAN WAN WAN Alarms And Events TaskPlan DataServices	Import Configuration File Leport Configuration File ★ Read Data Save Data Monitoring Log Log Log Log Log Log Log Log Log Lo
ce Search Rew Configuration 8102UA COM1 LAN WAN 4G Alarms And Events TaskPlan DataServices 	Import Configuration File  Leport Configuration File  Accord Data Save Data Monitoring Log Mon
ce Search Rew Configuration Ref 102UA COM1 LAN WAN 4G Alarms And Events TaskPlan DataServices Tasparent transmission Modbus RTU = Modbus TCP	Import Configuration File   Export Configuration File  Export Configuration File  Export Configuration File  Export Configuration File  Export Configuration File  Export Configuration File  Export Configuration File  Export Configuration File  Export Configuration File  Export Configuration File  Export Configuration File  Export Configuration File  Export Configuration File  Export Configuration File  Export Configuration File  Export Configuration File  Export Configuration File  Export Configuration  Export Configurat
ce Search Rew Configuration Ref 102UA COM1 LAN WAN WAN Alarms And Events TaskPlan DataServices 	Import Configuration File   Export Configuration File  Export Configuration File  Export Configuration File  Export Configuration File  Export Configuration File  Export Configuration File  Export Configuration File  Export Configuration File  Export Configuration File  Export Configuration File  Export Configuration File  Export Configuration File  Export Configuration File  Export Configuration File  Export Configuration File  Export Configuration File  Export Configuration File  Export Configuration  Export Configurat
ce Search Rew Configuration Ref 102UA COM1 LAN WAN VAN Alarms And Events TaskPlan DataServices TaskPlan DataServices Modbus RTU =: Modbus TCP Double click to set properties OPC UA	Import Configuration File   Export Configuration File  Export Configuration File  Export Configuration File  Export Configuration File  Export Configuration File  Red represents the online status, gray represents the offline status  Gateway Name  KingPigeon (MAX15)  Kingpigeon Modbus Online Status  Gateway Name  KingPigeon (MAX15)  Communication Protocol  Serial Port Choice  COM1  Serier Port Seri
ce Search       Rew Configuration         kt102UA         COM1         LAN         WAN         WAN         Alarms And Events         TaskPlan         DataServices         Modbus RTU =: Modbus TCP         Double click to set properties         OPC UA         Cloud	Import Configuration File       Export Configuration File       Aread Data       Save Data       Monitoring       Log
ce Search       New Configuration         kt102UA         COM1         LAN         WAN         4G         Alarms And Events         TaskPlan         DataServices         Modbus RTU =: Modbus TCP         Double click to set properties         OPC UA         Cloud         WQTT Client One	Import Configuration File       Export Configuration File       Aread Data       Save Data       Monitoring       Log
ce Search Rew Configuration Ref 102UA COM1 LAN WAN A dG Alarms And Events TaskPlan DataServices TaskPlan DataServices DataServices DataServices ODUBLe click to set properties ODUBLe click to set properties OPC UA Cloud MQTT Client One MQTT Client Two	Import Configuration File       Export Configuration File       Aread Data       Save Data       Monitoring       Log
ce Search Rew Configuration	Import Configuration File   Export Configuration File  Red represents the online status, gray represents the offline status  Basic Information  Red represents the online status, gray represents the offline status  Gateway Name KingPigeon (MAX15) Kingpigeon Modbus Online Status Gateway Name KingPigeon (MAX15) Kingpigeon Modbus Online Status Gateway Serial Port Choice COM1  Signal St Server Port S000 (1-65533) Server Port S000 (1-65533) Cloud Online Status KingPigeon K
ce Search Rew Configuration	Import Configuration File       Export Configuration File       Read Data       Save Data       Monitoring       Log       Log <thlog< th="">       Log       Log</thlog<>
ce Search Rew Configuration	Import Configuration File   Export Configuration File  Red represents the online status, gray represents the offline status  Basic Information  Red represents the online status, gray represents the offline status  Gateway Name KingPigeon (MAX15) Kingpigeon Modbus Online Status Gateway Name KingPigeon (MAX15) Kingpigeon Modbus Online Status Gateway Serial Port Choice COM1  Signal St Server Port S000 (1-65533) Server Port S000 (1-65533) Cloud Online Status KingPigeon K

Modbus RTU to Modbus TCP Configuration					
Item	Description				
Serial Port Choice	COM1				
Mode Selection	TCP Server (Gateway can only be TCP Server)				
Select Network Port	Select "WAN" or "LAN"				
Monitoring Port	Input port of monitoring BL102 Gateway (required)				
OK	Confirm Modbus RTU to Modbus TCP configuration				
Cancel	Cancel Modbus RTU to Modbus TCP configuration				

### 4.2.8.3 Modbus TCP Server

BL102 Gateway supports Modbus TCP protocol and provides data as Modbus TCP server. Modbus



TCP server is enabled permanently. Only configure Ethernet port and monitoring port. WAN /LAN IP address can be viewed by clicking WAN/LAN

BL102UA	Basic Information	
COM1	Basic Information -	
LAN		
WAN		
<b>%</b> 4G	Red represents the online status, gray represents the offline status	
🏚 Alarms And Events	Gateway Name KingPigeon (MAX15) Kingpigeon Modbus Online Status Port Device Name	Online Statu
TaskPlan	Gateway Time Modbus TCP Server bigeon MQTT Online Status COM1 FX3U WAN \$7-1200	
DataServices	Device Model - Set up T Client One Online Status LAN \$7-2005MART	
	T Client Two Online Statur	
	Version Ethernet Port WAN *	
Modbus TCP Server	Signal Strength Port 502 (1-65535) PT Cloud Online Status	
OPC UA Double click to set propert	4G Module Model WEI IOT Cloud Online Status	
	IMEI OK Cancel IOT Cloud Online Status	
MQTT Client One	Mobile operators 92.168.1.1 Ping	
-	SIM ICCID 89860043191574315142 www.baidu.com Ping	
•••• MQTT Client Two	SIM Registration Status	
Ali IOT Cloud		
HUAWEI IOT Cloud	Refresh	
• AWS IOT Cloud		
Singpigeon MQTT		

Modbus TCP Server Configuration					
ltem	Description				
Ethernet Port	Select "WAN" or "LAN"				
Port	Input gateway monitoring port (required)				
ОК	Confirm Modbus TCP Server setting				
Cancel	Cancel Modbus TCP Server setting				

Modbus TCP master computer is used as client to collect function codes supported by Gateway data. Boolean data supports 01, 05, numerical data supports 03, 06, 16-bit byte sequence is AB and 32-bit bytes sequence is ABCD. Follow master computer to put Modbus address or PLC Modbus address (The Modbus Address in configuration software). Refer to below datapoint picture. Master computer configuration refers to <u>5.2.2.2 View Data in KEPServerEX 6</u>



BL102UA	Name	Value	Unit	Type	Address	Data type	Modbus Maps Address	Modbus PLC Address	MQTT Flag	Enable	Ratio
COM1	YO			γ	0	bool	0	000001	YO	ble And W	none
and the approximate	¥1			γ	1	bool	1	000002	¥1	ble And W	none
Exau	Y2			Y Y	2	bool	2	000003	Y2	ble And W	none
- CAN	Y3 Y4			Y	4	bool	4	000004	Y3 Y4	ble And W	none
	Y5			Ŷ	5	bool	5	000006	Y5	ble And W	none
🖾 WAN	¥6			Y	6	bool	6	000007	Y6	ble And W	none
<b>'(2)'</b> 4G	Υ7			γ	7	bool	7	000008	¥7	ble And W	none
	DO			D	0	int16	0	400001	D0	ble And W	1
Alarms And Events	D1			D	1	int16	1	400002	D1	ble And W	1
🗳 TaskPlan	D2			D	2	int16	2	400003	D2	ble And W	1
	D3			D	3	int16	3	400004	D3	ble And W	1
DataServices	D4 D5			D	4	int16 int16	4 5	400005 400006	D4 D5	ble And W ble And W	1
Transparent transmission	D5 D6			D	6	int16	6	400008	D5 D6	ble And W	1
	D7			D	7	int16	7	400008	D7	ble And W	1
Modbus TCP Server     OPC UA     OPC UA     MQTT Client One     MQTT Client Two     Ali IOT Cloud     WAYS IOT Cloud     WAYS IOT Cloud     Wingpigeon MQTT     Wingpigeon Modbus											

# 4.2.8.4 OPC UA

Gateway BL102 supports OPC UA and provides data as OPC UA server.

WAN/LAN IP Address can be viewed by clicking WAN LAN

BL102UA 	Basic Information ————					
- an	[	DPC UA	resents the online status, gray repre	esents the	offline status	
- <b>%</b> 4G	Gateway Name	C Enable	pigeon Modbus Online Status 🌑	Port	Device Name	Online Status
Alarms And Events	Gateway Time	Ethernet Port WAN )	pigeon MQTT Online Status	COM1 WAN	FX3U S7-1200	
🔁 TaskPlan	Device Model		T Client One Online Status	LAN	\$7-2005MART	
DataServices	Version	Port 4840 (1-65535) Anonymous	T Client Two Online Status			
Transparent transmission	Signal Strength	User (MAX50)	T Cloud Online Status			
····· ● Modbus RTU   Modbus TCP	4G Module Model	Password (MAX50)	WEI IOT Cloud Online Status			
Modbus TCP Server	IMEI	Security Policy none v	IOT Cloud Online Status			
OPC UA	Mobile operators	Certificate	92.168.1.1 Ping			
Cloud Double click to set properties		PrivateKey				
MQTT Client One	SIM ICCID		w.baidu.com Ping 🔴			
MQTT Client Two	SIM Registration Status	OK Cancel				
Ali IOT Cloud			Refresh			
HUAWEI IOT Cloud						
- @ AWS IOT Cloud						

OPC UA Configuration					
ltem	Description				
Enable	Green indicates OPC UA is enabled				
	Gray indicates OPC UA is disabled. Default is disabled				
Ethernet Port	Select "WAN" or "LAN"				



Port	Input server port (required)
	Green indicates login anonymously. Default is Green.
Anonymous	Gray indicates login with Account and Password.
User	Input User Name
Password	Input User Password
Security Policy	Encryption policy. Select "none", "basic256", "basic128rsa15" or
	"basic256sha256"
Certificate	OPC UA certificate, select file to upload
PrivateKey	OPC UA encryption key, select file to upload
ОК	Confirm OPC UA setting
Cancel	Cancel OPC UA setting

Refer to <u>5.2.2.4 View Data in KEPServerEX 6</u> for OPC UA Client configuration OPC UA Client datapoints are retrieved from gateway and automatically generated. It's not necessary to configure.

### 4.2.9 Cloud Platform

Gateway BL102 can be online simultaneously in multiple cloud platforms.

# 4.2.9.1 MQTT Client One

MQTT Client One can be connected to cloud with certificate or without certificate It supports multiple publishing topics.

Click Add to set publish topic. Publish topic name can be viewed from drop-down list of Publish Topic. Select Publish Topic Name and click Delete to delete publish topic. MQTT Client One supports publishing certain datapoints of each topic. Move mouse cursor to the right box, right click it and click Add to enter datapoint dialog box. Select the datapoint to publish and click OK to confirm it. Double click datapoint to view its attributes.

Take below picture for example, only datapoint Y0 of COM1 Device FX3U is published and other datapoints are not published.

MQTT Client One , MQTT Client Two data format is the same as King Pigeon cloud MQTT data format. Refer to: King Pigeon Cloud MQTT Data Format

Note: Datapoint box is blank in default which means all datapoints will be published in default. If multiple topics are published, only the first topic datapoint box can be blank. Other topic datapoints must be selected.



ce Search <b>R</b> New Configuration	MQT	T Client
<ul> <li>COM1</li> <li>↓</li></ul>	Server IP/ Domain Name Server IP/ Domain Name Server Port 1883 (1-65535) Client ID User Name Password X.509 Root Certificate Client Secret Key Theme Settings Subscribe Topic Publish Topic topic Add Delete Automatic data upload cycle 30 (10-999;)	Variable Point         Type         Port         Device         Variable Name           Variable Point         COM1         FX3U         V0
HUAWEI IOT Cloud AWS IOT Cloud Kingpigeon MQTT	MQTT Data retransmission 🕥	OK Cancel

MQTT Client One Configuration				
ltem	Description			
Enable	Green indicates MQTT Client One is enabled			
Enable	Gray indicates MQTT Client One is not enabled.			
Server IP/ Domain Name	Input Server IP/Domain name			
Server Port	Input server port(required), default is 1883			
Client ID	Client Identifier of MQTT Connecting message.			
	Server uses it to identify Client			
User Name	User Name of MQTT Connecting message.			
User Name	Server uses it for ID verification and authorization			
Decoword	Password of MQTT Connecting message			
Password	Server uses it for ID verification and authorization			
X.509	Green indicates certificate is enabled			
(Enable Certificate)	Gray indicates certificate is not enabled			
Root Certificate	Select file to upload (Need enable Certificate first)			
Client Certificate	Select file to upload (Need enable Certificate first)			
Client Private Key	Select file to upload (Need enable Certificate first)			
Subseribe Tenie	Topic of MQTT subscribing message. After subscribing			
Subscribe Topic	server can send message to client for controlling			
	Topic of MQTT publishing message. It's used for MQTT to			
	identify message channel of sending valid load data. Wildcard			
Publish Topic	can't be included in publishing message topic name.			
	Click Add to add more public topics.			
	Click Delete to delete Public Topic			

Uploading Interval	Cycle time of MQTT data sending. Default is 30s
MQTT Data Re-transmission (Enable data re-transmission)	Green indicates offline data will be transmitted once network recovers; Gray indicates offline data will not be transmitted once network resumes. Max 100,000 datapoints can be re-transmitted. If more than that, the previous ones will be deleted
ОК	Confirm MQTT Client One setting
Cancel	Cancel MQTT Client One setting

### 4.2.9.2 MQTT Client Two

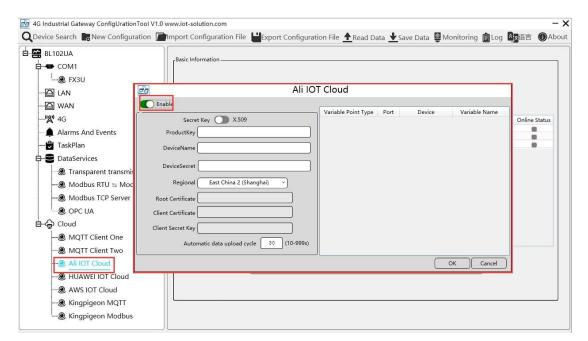
MQTT Client Two Configuration is the same as MQTT Client One

MQTT Client Two subscribe topic will not be working. MQTT Client Two is used for view data but not control data from cloud.

MQTT Client One , MQTT Client Two data format is the same as King Pigeon cloud MQTT data format. Refer to: <u>King Pigeon Cloud MQTT Data Format</u>

MQTT Client Two configuration refer to MQTT Client One

# 4.2.9.3 Alibaba Cloud



Alibaba Cloud Configuration				
Item	Description			
Enable	Green indicates Alibaba Cloud is enabled			



	PLC/Modbus to MQTT/OPC UA Gateway BL102
	Gray indicates Alibaba Cloud is not enabled. Default is disabled
Secret Key/X.509	Default is connecting with Secret Key. Click it to move the
Secret Rey/A.509	button on the right for connecting with Certificate.
Draduation	Set the same ProductKey as the one in Ali Cloud.
ProductKey	See below illustration (Device-Click DeviceSecret to view it)
DeviceName	Set the same DeviceName as the one in Ali Cloud
Deviceiname	See below illustration (Device-Click DeviceSecret to view it)
	Set the same DeviceSecret as the one in Ali Cloud
DeviceSecret	See below illustration (Device-Click DeviceSecret to view it)
Region	Select Alibaba Cloud Region, default is East China 2(Shanghai)
Root Certificate	Select file to upload (Need to select certificate X.509 first)
Client Certificate	Select file to upload (Need to select certificate X.509 first)
Client Secret Key	Select file to upload (Need to select certificate X.509 first)
Automatic Data	Cuele time of data conding. Default is 20a
Upload Cycle	Cycle time of data sending. Default is 30s
Dublich Detensint	Default is blank box with all datapoints to be uploaded
Publish Datapoint	Right click the box and click Add to select datapoint for
Selection	uploading. Click OK to confirm it.
ОК	Confirm Alibaba Cloud setting
Cancel	Cancel Alibaba Cloud setting

Alibaba Cloud device model is under development. Thus datapoint must be added one by one. MQTT flag must be the same as the one in configuration software. For example, collect datapoint VW8 of PLCS7-200SMART. MQTT flag in configuration software is VW8. Then set datapoint as VW8 in cloud. Function name can be different from variable name in configuration software.

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Groups		Device Information	Topic	Device Certificate Copy				DS	Tasl
Jobs		Device Information		ProductKey	Сору				
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4G Industrial Gatew Device Search B BL102UA COM1 CM1 CM1 CM1 CM1 CM1 CM1 CM1 C	ay ConfigUrationTool V1.0 New Configuration	0 www.iot-solut import Con Q0 Q1 Q2 Q3 Q4 Q5 Q6 Q7 Ww0 Ww2 Ww4 Ww4	figuratio		Type         A           Q         Q           Q         Q           Q         Q           Q         Q           Q         Q           Q         Q           Q         Q           Q         Q           Q         Q           Q         Q           Q         Q           Q         VW           VW         VW           VW         VW           VW         VW	Address I 0.0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0 0 2 4 4 6	Data type bool bool bool bool bool bool bool int16 int16 int16	Modbus Maps 8 9 10 11 12 13 14 15 8 10 12 14		Up PLC Address 000009 000010 000011 000012 000013 000014 000015 000016 400009 400011 400013	MQTT Flag Q0 Q1 Q2 Q3 Q4 Q5 Q6 Q7 VW0 VW2 VW2 VW4 VW4	语言 Enable le And W le And W	About Ratio none none none none none none 1 1 1
4G Industrial Gatew Device Search B BL102UA COM1 CM1 CM1 CM1 CM1 CM1 CM1 CM1 C	ay ConfigUrationTool V1.0 New Configuration	0 www.iot-solut import Con Q0 Q1 Q2 Q3 Q4 Q5 Q6 Q7 Ww0 Ww2 Ww4 Ww4	figuratio		Type         A           Q         Q           Q         Q           Q         Q           Q         Q           Q         Q           Q         Q           Q         Q           Q         Q           Q         Q           Q         Q           Q         Q           Q         VW           VW         VW           VW         VW           VW         VW	Address I 0.0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0 0 2 4 4 6	Data type bool bool bool bool bool bool bool int16 int16 int16	Modbus Maps 8 9 10 11 12 13 14 15 8 10 12 14		Up PLC Address 000009 000010 000011 000012 000013 000014 000015 000016 400009 400011 400013	MQTT Flag Q0 Q1 Q2 Q3 Q4 Q5 Q6 Q7 VW0 VW2 VW2 VW4 VW4	语言 Enable le And W le And W	About Ratio none none none none none none 1 1 1
4G Industrial Gatew Device Search B BL102UA COM1 CM1 CM1 CM1 CM1 CM1 CM1 CM1 C	ay ConfigUrationTool V1.0 New Configuration	0 www.iot-solut import Con Q0 Q1 Q2 Q3 Q4 Q5 Q6 Q7 Ww0 Ww2 Ww4 Ww4	figuratio		Type         A           Q         Q           Q         Q           Q         Q           Q         Q           Q         Q           Q         Q           Q         Q           Q         Q           Q         Q           Q         Q           Q         Q           Q         VW           VW         VW           VW         VW           VW         VW	Address I 0.0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0 0 2 4 4 6	Data type bool bool bool bool bool bool bool int16 int16 int16	Modbus Maps 8 9 10 11 12 13 14 15 8 10 12 14		Up PLC Address 000009 000010 000011 000012 000013 000014 000015 000016 400009 400011 400013	MQTT Flag Q0 Q1 Q2 Q3 Q4 Q5 Q6 Q7 VW0 VW2 VW2 VW4 VW4	语言 Enable le And W le And W	About Ratio none none none none none none 1 1 1

Note: Currently Alibaba cloud device shadow is not supported. Data is written through online debugging. Multiple data sending is not supported.

# 4.2.9.4 HUAWEI Cloud

HUAWEI Cloud can be connected with or without Certificate. It supports multiple service IDs. Click Add to set Service ID. ID can be viewed from the drop-down list. Click Delete to delete service ID. HUAWEI Cloud supports uploading certain datapoints of each Service ID. Right click the box and click Add to enter datapoint dialog box. Select the datapoint to upload and click OK to confirm it. Double click the datapoint to view its attributes.

Note: 1. Datapoint box is blank in default which means all datapoints will be uploaded. If there're multiple Service IDs, only one Service ID datapoint box can be blank. Datapoints for uploading must be selected for other Service IDs.

 2. HUAWEI Cloud device shadow function is not supported. Data is written through synchronization

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#### command.

L102UA	Basic Information			
COM1				
EX3U	E HUA	WEI IOT Cloud		
LAN	Enable			
	- Connection Address	Variable Point Type Por	t Device Varial	ble Name
🗃 WAN	Server IP/ Domain Name			
<b>&amp;</b> " 4G	Server Port 1883 (1-65535)			
Alarms And Events				
🕈 TaskPlan	Secret Key 🔵 X.509			
DataServices	Device ID			
Transparent transmission	Device Secret Key			
Modbus RTU ≒ Modbus TCP	Root Certificate			
Modbus TCP Server	Client Certificate			
OPC UA	Client Secret Key			
Cloud		elete		
- 🖲 MQTT Client One	Automatic data upload cycle 30 (10-999s)			
MQTT Client Two	MQTT Data retransmission			
Ali IOT Cloud	MQ11 Data retransmission		ОК	Cancel

	HUAWEI Cloud Configuration
ltem	Description
Enable	Green indicates HUAWEI Cloud is enabled. Gray indicates HUAWEI Cloud is disabled. Default is disabled
	Select connecting to HUAWEI Cloud via MQTT to enter console. Click Overview to get server IP address of device connection
Server IP/ Domain Name	HUAWEI CLOUD       Console       tellingd       Our         IoT Platform       Basic Instance / Instance Details         Image: Basic Instance / Instance Details       Basic Instance / Instance Details         Image: Basic Instance / Instance Details       Basic Instance / Instance Details         Image: Devices       Basic Instance / Instance Details         Image: Devices       Access Details         Image: Basic Instance / Instance Details       Image: Devices         Image: Basic Instance / Instance Details       Image: Device Instance / Image
Server Port	Default is 1883, input 1883 for connecting with Secret Key Input 8883 for connecting with Certificate (Required)
Secret Key/X.509	Default is connecting with Secret Key. Click it to move the button on the right for connecting with Certificate
Device ID	Set the same ID as the one in HUAWEI Cloud (Device-Device ID)

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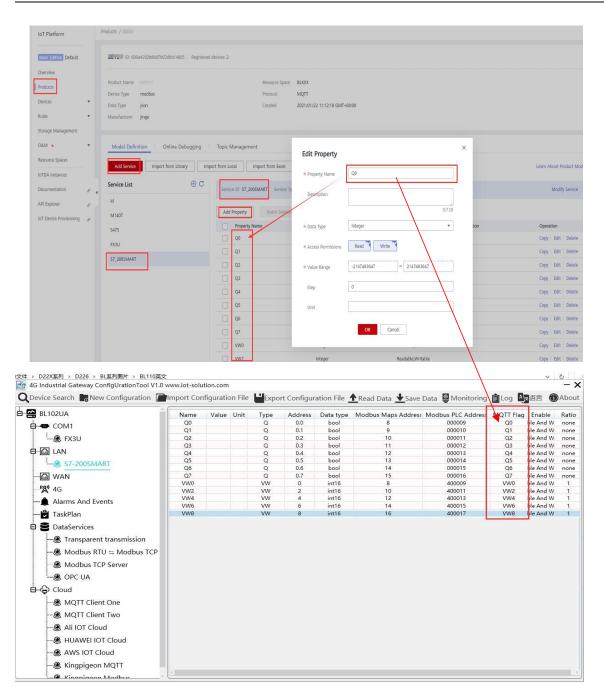


	T					
	Set the same Device Secret Key as the one in HUAWEI Cloud					
Device Secret	when creating device in HUAWEI Cloud. If it's forgot, it can be					
Key	reset in device authentication.					
	(Not necessary if connecting with certificate is selected)					
Root Certificate	Select file to upload (Need to select certificate X.509 first)					
Client Certificate	Select file to upload (Need to select certificate X.509 first)					
Client Secret Key	Select file to upload (Need to select certificate X.509 first)					
	Set the same Service ID as the one in HUAWEI Cloud.					
	(IOT Platform-Products-Add Service-Service ID)					
	HUAWEI CLOUD Console e Beijing4 • Search C					
	Froducts / BL101					
	Add Service ×					
a	Coverview Service ID					
Service ID	Products Device Type					
	Devices   Data Type Description Rules  Manufacturer  221					
	Storage Management 0/128					
	OSM      Model De     OK Cancel					
	Add Service Import non closary Import non closary Import non closary					
	C Documentation o Service ID: service Id 🗇					
	Multiple Service IDs are supported					
Automatic Data	Cycle time of data uploading. Default is 20a					
Upload Cycle	Cycle time of data uploading. Default is 30s					
	Green indicates offline data will be transmitted once network					
MQTT Data	recovers; Gray indicates offline data will not be transmitted once					
Re-transmission	network resumes. Max 100000 datapoints can be re-transmitted.					
	If more than that, the previous ones will be deleted.					
Datapoint	Default is blank box with all datapoints to be uploaded					
Uploading	Right click the box and click Add to select datapoint for					
Selection	uploading. Click OK to confirm it.					
OK	Confirm HUAWEI Cloud setting					
Cancel	Cancel HUWEI Cloud setting					
	·					

Set

datapoint in HUAWEI Cloud as below picture. If there're multiple service IDs in configuration software and each service ID has different datapoints, configure the same service ID in HUAWEI Cloud. Put MQTT flag as attribute name. For example, collect datapoint Q0 of PLC S7-200SMART, put configuration software MQTT flag Q0 as attribute name.





# 4.2.9.5 AWS Cloud

1. Datapoint box is blank in default which means all datapoints will be published. If multiple topics are published, only one topic datapoint box can be blank. For other topics, datapoints for publishing must be selected.

2. AWS Cloud data writing function is not supported



	nmport Configuration File 💾Export Configuration File 🛧 Read Data 👱 Save Data 🚇 Monitoring 自Log 🌆 语言	
BL102UA 	Basic Information	
Han Lan	AWS IOT Cloud	
S7-200SMART		
MAN	Connection Address Variable Point Type Port Device Variable Name	tatus
- <b>(X</b> ) 4G	Server IP/ Domain Name	
🏚 Alarms And Events	Server Port 8883 (1-65535)	
🗳 TaskPlan		
DataServices	Item Name	
• Transparent transmission	Client ID	
• Modbus RTU ≒ Modbus TCP	Root Certificate	
Modbus TCP Server	Client Certificate	
OPC UA		
H- Cloud	Publish Topic Add Delete	
MQTT Client One	Automatic data upload cycle 30 (10-999s)	
MQTT Client Two		
Ali IOT Cloud	OK Cancel	)
HUAWEI IOT Cloud		-

	AWS Configuration				
Item	Description				
Enable	Green indicates AWS is enabled.				
	Gray indicates AWS is disabled. Default is disabled				
	Input AWS Connection Endpoint				
	(Enter Console, click Things and then click Interact to get it)				
	aws     Services ▼     Q     Search for services, freatures, marketplace products, and does     [Alt+5]     (D)     A     •     Oregon ▼     s       Aws IoT     ×     Aws IoT     >     Things >     bl101				
Server IP/	Monitor Activity BL101 > Onboard Rixxx Actions -				
Domain Name	▼ Manage     Details     This thing already appears to be connected.     Connect a device       Things     Security     HTTPS       Billing groups     HITPS       Billing Groups     Billing Groups       Jobs     Billing Groups       Job templates     Shadow       Tunnets     Activity				
Server Port	Fleet Hub     County     MQTT     Jebs     Jebs     Volations     Secure     Jebs     Je				
	aws       Services       Q       Search for services, features, marketplace products, and docs       [Alt+5]       D       Image: Consequence of the services of the serv				
Item Name	Monitor THING Activity BL101 b Onboard BLXXX				
	Things     Details     Thing ARN       Types     Security     A thing Amazon Resource Name uniquely identifies this thing.       Thing groups     Thing groups       Billing groups     Billing Groups       Jobs     Shadows				
	Job templates Type Tunnels Interact				



	Input AWS Accou	nt ID		
	aws Services ▼ Q Searce AWS IoT ×	h for services, features, marketpl AWS IoT > Things >		Alt+5] D & Oregon V My Account My Organization
Client ID	Monitor Activity > Onboard < Manage Things Types Thing groups	THING BL101 BLOOX Details Security Thing groups	Thing ARN A thing Amazon Reso	My Service Quotas My Billing Dashboard My Security Credentials Sign Out source Name uniquely identifies this thing.
Root Certificate	Select file to uploa			
Client Certificate	Select file to uploa	ad it		
Client Secret Key	Select file to uploa	ad it		
Publish Topic	topic used for MQ Click Add to creat and click Delete to	e more Publishing	g message sh Topics. rketplace products, and Descriptio No descriptio Rule query The source o SRIRCT •	
Automatic Data Upload Cycle	Cycle time of data	a uploading. D	Default is 3	0s
Datapoint Publishing Selection	Default is blank b Right click the bo publishing. Click (	x and click Ad	ld to selec	-
OK	Confirm AWS set	ing		
Cancel	Cancel AWS setti	ng		

# 4.2.9.6 King Pigeon Cloud via MQTT

King Pigeon Cloud MQTT data format refer to: <u>King Pigeon Cloud MQTT Data Format</u> Configure it as below picture :



DETUZUA				
COM1	Basic Information			
EX3U				
LAN	🖆 Kin	gpigeon MQTT		
	Enable			
- WAN	Connection Address	Variable Point Type	Port Device	Variable Point Nam
- <b>'(ஜ)</b> 4G	Server IP/ Domain Name mqtt.dtuip.com			
Alarms And Events	Server Port 1883 (1-65535)			
🔁 TaskPlan				
DataServices	Client ID			
Transparent transmission	User Name MOTT	$\exists$		
		=		
• Modbus TCP Server	Password MQTTPW			
OPC UA	Subscribe Topic			
-⇔ Cloud	Publish Topic	=		
MQTT Client One	Automatic data upload cycle 30 (10-999s)			
MQTT Client Two	MQTT Data retransmission			
Ali IOT Cloud				
HUAWEI IOT Cloud				OK Cancel

King	Pigeon Cloud via MQTT Configuration					
Item	Description					
Enable	Green indicates King Pigeon cloud via MQTT is enabled					
спаре	Gray indicates King Pigeon cloud via MQTT is disabled					
Server IP/Domain Name	mqtt.dtuip.com					
Server Port	1883(Required)					
	Input device serial number issued by King Pigeon					
Client ID	(Contact King Pigeon sales to get the serial number if					
	required to connect to King Pigeon cloud)					
User Name	MQTT					
Password	MQTTPW					
Subscribe Topic	King Pigeon Device Serial Number/+					
Publish Topic	King Pigeon Device Serial Number					
Automatic Data Upload Cycle	Cycle time of data uploading. Default is 30s					
	Green indicates offline data will be transmitted once					
MQTT Data	network recovers; Gray indicates offline data will not be					
Retransmission	transmitted once network resumes. Max 100, 000					
Reliansinission	datapoints can be retransmitted. If more than that, the					
	previous ones will be deleted					
Publishing Datapoint	Default is blank box with all datapoints to be published					
Selection	Right click the box and click Add to select datapoint for					
	publishing. Click OK to confirm it.					
OK	Confirm King Pigeon Cloud via MQTT setting					
Cancel	Cancel King Pigeon Cloud via MQTT setting					

Configure datapoint with below procedure. First add datatpoint and then configure datapoint mark. It must be the same as MQTT flag in configuration software. For example, collect datapoint Q1 of PLC S7-200SMART, in configuration software MQTT flag is Q1, then set Q1 as read-write mark in King Pigeon cloud.

Device	default group	*						
Device	BL10x		<u> </u>					
Link	MQTT	-	3					
Dropping	Custom -	60	0					
Sensor	Append	Batch Addition						
	QO	Switch type (operable 👻	0 (declinal places) 🔻	Unit	0	J	Delete	r
	Q1	Switch type (operable 👻	0 (decimal places)	Unit	0	J	Delete	T
	Q2	Switch type (operable 👻	0 (decimal places) 🛛 👻	Unit	0	1	Delete	1
	Q3	Switch type (operable 👻	0 (decimal places) 📼	Unit	0	J	Delete	r
	Q4	Switch type (operable 👻	0 (decimal places)	Unit	0	1	Delete	r
	Q5	Switch type (operable 👻	0 (decimal places) 🗢	Unit	0	J	Delete	T
	Q6	Switch type (operable 👻	0 (decimal places)	Unit	0	1	Delete	T
	Q7	Switch type (operable -	0 (decimal places)	Unit	0	J	Delete	ī
	vwo	Numerical Type 🛛 👻	0 (decimal places)	<b>^</b>	0	J	Delete	1
	VW2	Numerical Type 🚽	0 (decimal places)	<b>^</b>	0	1	Delete	1
	VW4	Numerical Type 👻	0 (decimal places)	<b></b>	0	1	Delete	1
Monitoring Center						0		Con
Link Protocol	★ Device Ust yei Secretura					U	(	Cons
Link Protocol TCP Protocol HTTP Protocol	★ Device List			0			0	Bons
Link Protocol TCP Protocol HTTP Protocol MB RTU	★ Device List	n	ŋ	ĵ		9	۰ ۱	Cons
Link Protocol TCP Protocol HTTP Protocol MB RTU MB TCP	★ Device List		J	J	)			Cons
Link Protocol TCP Protocol HTTP Protocol MB RTU MB TCP MGTT Protocol	★ Device List	D D D	J OI	22			<b>.</b> 	Dons
Link Protocol ICP Protocol HTP Protocol WB RTU WB TCP WGTT Protocol UDP Protocol	★ Device List	Ĵ	J	J	725048		J	Cons
Link Protocol TCP Protocol HTTP Protocol MB TCP MGTT Protocol UDP Protocol TCP JSON Protocol	★ Device List	D D D	Q1	22	725048		Q3 ensor ID: 1725049	Cons
Link Protocol TCP Protocol HTTP Protocol WB RTU WB TCP USD Protocol JCP JSON Protocol CTCOAP Protocol	★ Device List	00 00 00 1725946	G1 Benser (D: 1725947	Q2 Sensor ID: 1	725048	s	Q3 ensor ID: 1725049 Q3	Wint
Link Protocol TCP Protocol 4TTP Protocol 4TTP Protocol 4W TCP 4W	★ Device List www.destauss	0 decario: 172546 Read write: 00	01 Sensor ID: 172547 Read write 01	Q2 Sensor ID: 1		s	Q3 ensor ID: 1725049 Q3	
Link Protocol TCP Protocol 4TTP Protocol 4TTP Protocol 4W TCP 4W	★ Device List www.destauss	0 decario: 172546 Read write: 00	01 Sensor ID: 172547 Read write 01	Q2 Sensor ID: 1		s	Q3 ensor ID: 1725049 Q3	
Link Protocol TCP Protocol 4TTP Protocol 4TTP Protocol 4W TCP 4W	★ Device List www.destauss	0 decario: 172546 Read write: 00	01 Sensor ID: 172547 Read write 01	Q2 Sensor ID: 1		s	Q3 ensor ID: 1725049 Q3	
Link Protocol TCP Protocol 4TTP Protocol 4TTP Protocol 4W TCP 4W	Device List     w versions      Control of the second	OF THE CONTROL OF THE	CI Bensor (D: 172547 Read write CI Vories	22 Sensor ID: 1 Read write 22		s	23 23 23 23 23 23 23 23 23 23 23 24 24 25 24 24 24 25 24 24 24 24 24 24 24 24 24 24 24 24 24	
Link Protocol TCP Protocol 4TTP Protocol 4TTP Protocol 4W TCP 4W	Device List     w versions      Control of the second	Construction of the second sec	C1 Sensor (D) 1725047 Read write C1 Votes C5	22 Sensor ID: 1 Read write 22 07	Witte	S Read write	a3	
Link Protocol TCP Protocol 4TTP Protocol 4TTP Protocol 4W TCP 4W	← Device List Terr unstations Setting Planemeter G G Bensor (D: 1725500	ead write 00 Construction Co	CI Sensor ID: 172547 Read write OI Vrite CS Bensor ID: 172592	22 Sensor ID. 1 Read write 2 Sensor ID. 1 Sensor ID. 1	Witte	Read write	23 23 23 23 23 23 23 23 23 23 24 24 24 24 24 24 24 24 24 24 24 24 24	
Link Protocol ICCP Protocol 48 RTU 48 TCP 40 TCP	Cevice List     Every descent and a second and a sec	ead write 00 General ID. 1725051 Read write 00 General ID. 1725051 Read write 02	G1 Sensor ID: 1725047 Read write O1 Vrite G5 Bensor ID: 1725052 Read write O6	22 Sensor ID: 1 Read write 22 07	VVID 725053	S Read write	a3 ensor ID: 1725049 a3 ensor ID: 1725054 wwo wwo	Wnt
Monitoring Center Link Protocol Int Protocol MI RTU MIB TCP MID TP Protocol UDP Protocol CCAAP Protocol CCAAP Protocol CCAAP Protocol CCAAP Protocol CCAAP Protocol	← Device List Terr unstations Setting Planemeter G G Setting Planemeter G Setting Planemeter	ead write 00 General ID. 1725051 Read write 00 General ID. 1725051 Read write 02	CI Sensor ID: 172547 Read write OI Vrite OS Bensor ID: 172592	22 Sensor ID. 1 Read write 2 Sensor ID. 1 Sensor ID. 1	Witte	Read write	a3 ensor ID: 1725049 a3 ensor ID: 1725054 wwo wwo	



4G Industrial Gateway ConfigUrationTool V1.0 w Device Search 🛛 🕞 New Configuration 🏾 🎢 I			Expo	rt Configur	ation File	Read Data Save	Data 🙆 Monitoring		语言	Ab
BL102UA	Name	Value	 Туре	Address		Modbus Maps Address			Enable	Ra
	Q0		Q	0.0	bool	8	000009	Q0	le And W	no
Τ.,	Q1		Q	0.1	bool	9	000010	Q1	le And W	no
E FX3U	Q2		Q	0.2	bool	10	000011	Q2	ele And W	n
E AN	Q3 Q4		Q	0.3	bool	11	000012	Q3 04	ele And W	no
	Q4 Q5		Q	0.4	bool	12	000013	Q4 Q5	le And W	no
S7-200SMART	Q6		Q	0.6	bool	14	000015	Q6	le And W	nc
	Q7		Q	0.7	bool	15	000016	Q7	le And W	nc
	VW0		VW	0	int16	8	400009	VW0	le And W	
- <b>'&amp;'</b> 4G	VW2		VW	2	int16	10	400011	VW2	ele And W	
🚊 Alarms And Events	VW4		VW	4	int16	12	400013	VW4	ele And W	
	VW6 VW8		VW	6	int16 int16	14	400015 400017	VW6 VW8	ele And W	
® Modbus RTU ≒ Modbus TCP ® Modbus TCP Server ® OPC UA ⊟® Cloud										

### 4.2.9.7 King Pigeon Cloud via Modbus

Both King Pigeon Cloud and custom Modbus cloud can be connected via Modbus RTU protocol. BL102 supports function code 01, 05 of Boolean data and function codes 03, 06 of numerical data. 16-bit byte sequence is AB and 32-bit byte sequence is ABCD.

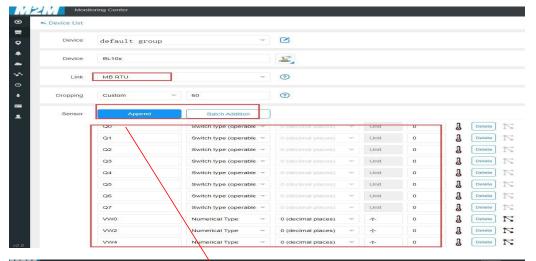
G Industrial Gateway ConfigUrationTool V1.0 w	ww.iot-solution.com	
	mport Configuration File	Log 上 Export Configuration File 全 Read Data ↓ Save Data ● Monitoring ● Log 日本語 ④
DLIUZUA	-	
COM1	Basic Information	
E@ FX3U	r i i i i i i i i i i i i i i i i i i i	
He LAN		🔯 Kingpigeon Modbus
S7-200SMART		Enable
- 🖾 WAN		Connection Address
<b>(ஜ)</b> 4G	Gateway Name	COM1 FX3U
📲 Alarms And Events	Gateway Time	Server Port 6651 (1-65535) LAN \$7-2005MART
- 🕏 TaskPlan	Device Mode	(You can change the server address to log in to other cloud platforms)
S DataServices	Version	
Transparent transmission	Signal Strength	Modbus Station 1 (1-247)
	4G Module Mode	Login Message (MAX100)
Modbus TCP Server	IME	
OPC UA	Mobile operators	
G Cloud	SIM ICCID	(MAX100)
- MQTT Client One	SIM Registration Status	(MAX100)
MQTT Client Two	5	Heartbeat Interval 60 (1-999s)
Ali IOT Cloud		
		OK Cancel
	L	
Kingpigeon MQTT		
Kingpigeon Modbus		

	King Pigeon Cloud via Modbus								
ltem	Description								
Enable	Green indicates King Pigeon Cloud via Modbus is enabled								
Enable	Gray indicates King Pigeon Cloud via Modbus is disabled								
Server IP/Domain Name	modbus.dtuip.com								
Server Port	6651 (Required)								



Set Modbus communication address of this Gateway device
Input device serial number issued by King Pigeon
(Contact King Pigeon sales to get the serial number)
Server acknowledges login messages (Not necessary for
King Pigeon Cloud)
Q (Heartbeat message to keep connection)
A (Server acknowledges heartbeat messages)
Cycle time of sending Heartbeat messages, default is 60s
Confirm King Pigeon Cloud via Modbus setting
Cancel King Pigeon Cloud via Modbus setting

Configure datapoint in King Pigeon Cloud as below picture. First create datapoint, then configure Modbus ID, function code, address, data format, byte sequence and data collection cycle. Modbus address in King Pigeon cloud and configuration software is deviated by 1. For example, datapoint Q0 of PLC S7-200SMART in configuration software is 8, then put 9 in cloud. Sensor names in cloud can be different from those in configuration software



Link Protocol	♠ Device List									
TCP Protocol		Read write instruct	on settings							-
HTTP Protocol	BL10x		$\lambda$	Slave						Acquisitie
MB RTU	<u>}</u>	Serial Number	Sensor	Address	Function Code	Bias	Data Format	Data Bits	Byte Order	Cycle
MB TCP	Serial Number 97DA	1	Q0	1	01Read and write 🔍	9	bit			10
MQTT Protocol	All Sensors	2	Q1	1	01Read and write v	10	bit			10
UDP Protocol										
TCP JSON Protocol		3	02	1	01Read and write v	-11	bž			10
CTCoAP Protocol		.4	Q3	1	01Read and write 🔍	12	bit			10
NB-IoT Protocol		5	Q4	Э	01Read and write 🔍	13	bit			10
		6	Q5	1	01Read and write 🔍	14	bit			10
	Read write instruction settings	7	Q6	1	01Read and write	15	bit			10
	ŋ	8	Q7	1	01Read and write 🔍	16	bit			10
	U.S.	9	VW0	1	03Read and write 🛛 👻	9	16Position Signed N $\forall$			10
	04	10	VW2	1	03Read and write 🔍	11	16Position Signed N 👻			10
	Can only be a number Write In	н	VW4	ł	03Read and write 🔍	13	16Position Signed N $$			10
		12	VW6	1	03Read and write v	15	16Position Signed N 👻			10

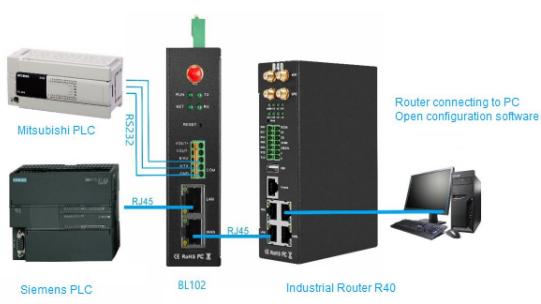
Industrial Gateway ConfigUrationTool V1.0 v			e'1	1.16			A		- <b>D</b>		- >
evice Search RNew Configuration 📄	mport Con	figuratio	on File	Expo	rt Configur	ation File	Read Data Y Save	Data 🚆 Monitoring	Log 🗳		Abou
	Name	Value	Unit	Type	Address	Data type	Modbus Maps Addres	Modbus PLC Address	MQTT Flag		Ratio
	Q0			Q	0.0	bool	8	000009	Q0	ble And W	none
	Q1			Q	0.1	bool	9	000010	Q1	ble And W	none
الم LAN	Q2			Q	0.2	bool	10 11	000011	Q2 Q3	ble And W ble And W	none
	Q3 Q4			Q	0.3	bool	12	000012	Q3 Q4	ble And W	none
	Q.4 Q.5			Q	0.5	bool	13	000014	05	ble And W	none
5 WAN	Q6			Q	0.6	bool	14	000015	Q6	ble And W	none
	Q7			Q	0.7	bool	15	000016	Q7	ble And W	none
🖞 4G	VW0			VW	0	int16	8	400009	VW0	ble And W	1
Alarms And Events	VW2			VW	2	int16	10	400011	VW2	ble And W	1
•	VW4 VW6			VW VW	4	int16 int16	12 14	400013 400015	VW4 VW6	ble And W ble And W	1
TaskPlan	VW8			VW	8	int16	14	400013	VW8	ble And W	1
® Transparent transmission ® Modbus RTU ≒ Modbus TCP											
Modbus TCP Server OPC UA											
® Modbus TCP Server ® OPC UA & Cloud											
Modbus TCP Server											
® Modbus TCP Server ® OPC UA & Cloud											
@ Modbus TCP Server @ OPC UA @ MQTT Client One											
® Modbus TCP Server ® OPC UA ® MQTT Client One ® MQTT Client Two											
Modbus TCP Server       OPC UA     Cloud       MQTT Client One      MQTT Client Two       MIT Client Two											
Modbus TCP Server     OPC UA     Cloud     MQTT Client One     MQTT Client Two     MQTT Cloud     HUAWEI IOT Cloud											

PLC/Modbus to MQTT/OPC UA Gateway BL102

# 5 Gateway BL102 Application Example

Below is the example of BL102 Gateway COM port collecting data of Mitsubish PLC FX3U and LAN port collecting data of Siemens PLC S7-200SMART. Other PLC configuration procedures are the same. Just set Device Brand and Device Model of the PLC to collect data. BL102 Gateway WAN port connects to industrial Router R40 for internet access.

# 5.1 FX3U & S7-200SMART Connect to Gateway BL102



BL102 Gateway Wiring Diagram:

Connect Siemens PLC S7-200SMART to Gateway BL102 LAN Port. Connect Mitsubishi PLC FX3U to Gateway BL102 COM Port with RS232 to RS422 converting cable. Connect Industrial Router R40 to BL102 Gateway WAN port. Collected PLC data is sent to cloud through 4G industrial router R40. Note: Both WAN and LAN ports can collect PLC data. This example is introduction to LAN port data collecting. WAN port configuration is the same as LAN port configuration.

#### 5.2 Configuration Software

Device, Datapoint and cloud connection should be configured.

### 5.2.1 Add Device and Datapoint

# 5.2.1.1 COM Port Configuration

COM port connects Mitsubish PLC FX3U with RS232 to RS422 converting cable. Configure it as below procedure.

4G Industrial Gateway ConfigUrationTool V1.0						- ×
QDevice Search 💽 New Configuration 📔	Import Configuration	n File 💾 Export Configur	ration File 🛧 Read Dat	a 🛨 Save Data 🚇 Monitoring	Log Ax语	言 <b>①</b> About
<ul> <li>BL102UA</li> <li>COMI</li> <li>LAN</li> <li>WAN</li> <li>WAN</li> <li>WAN</li> <li>WAN</li> <li>TaskPlan</li> <li>DataServices</li> <li>Transparent transmission</li> <li>Modbus RTU = Modbus TCP</li> <li>Modbus TCP Server</li> <li>OPC UA</li> <li>Cloud</li> <li>MQTT Client One</li> <li>MQTT Client Two</li> <li>Ali IOT Cloud</li> <li>HUAWEI IOT Cloud</li> <li>AWS IOT Cloud</li> <li>Kingpigeon MQTT</li> <li>Kingpigeon Modbus</li> </ul>		Serial Port A Mode Selection Device Brind M Device Model Baud 9600 ~ 2 Data Bit 7 ~ P		aps Address: Modbus PLC Address	, MQTT Flag Er	nable Ratio

- (1) Double click COM1 to enter COM attribute configuration box.
- (2) Select data collection Mode
- (3) Select Mitsubishi as Device Brand and select FX3U as Device Model

(4) Follow PLC FX3U RS422 port parameters to set the same baud rate, stop bit, data bit and parity bit

(5) Click OK to confirm it.

Note: Click Save Data. COM port configuration will be effective after gateway restart automatically.

### 5.2.1.2 Add COM Port Device-Mitsubish PLC FX3U

BL102UA	Name	Value	Unit	Туре	Address	Data type	Modbus Ma	ps Address I	Modbus PLC Address	MQTT Flag	Enable	Ratio
- CONT												
WAN												
<b>(%)</b> 4G			ala	Dev	rice Info	rmation						
Alarms And Events			D	evice Nam	FX:	3U (M)	AX30)					
🔁 TaskPlan							,					
DataServices			Dev	vice Propert	ties —							
Transparent transmission												
• Modbus RTU ≒ Modbus TCP												
Modbus TCP Server												
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• MQTT Client One												
MQTT Client Two												
Ali IOT Cloud												
HUAWEI IOT Cloud												
AWS IOT Cloud												
Kingpigeon MQTT												

- (1) Click COM1, right click it and click Add to enter device configuration box
- (2) Set Device Name at random like FX3U
- (3) Click OK to confirm adding FX3U PLC.

Note: After confirming configuration, FX3U device icon will appear below COM1. To add more devices, follow the same steps (1)-(3)

Note: Click Save Data. Gateway will restart automatically and adding PLC FX3U is effective

# 5.2.1.3 Add FX3U Datapoints

BL102UA	Name	Value	Unit	Type	Address	Data type	Modbus Maps A	ddress Mo	dbus PLC Address	MOTT Flag	Enable	Rati
	YO			Y	0	bool	0		000001	YO	ble And W	
1	¥1			Y	1	bool	1		000002	Y1	ble And W	
••• • FX3U	¥2			γ	2	bool	2		000003	Y2	ble And W	
	¥3			Y	3	bool	3		000004	¥3	ble And W	
	Y5			-	Manial	L. A.L.			000006	Y5	ble And W	non
🖾 WAN	Y6	<u>ala</u>			varian	le Attrik	outes		000007	Y6	ble And W	
<b>(%)</b> 4G	¥7						_		00008	Υ7	ble And W	none
A Aleren Aral Events	D0		Variab	le Name	YO		Variable Unit		400001	D0	ble And W	1
Alarms And Events	D1		. د د م	ess Type	Y	, j	Starting Address	0		D1	ble And W	1
🔁 TaskPlan	D2 D3		Auui	ess type (				•	400003	D2 D3	ble And W ble And W	1
DataServices	D4		Data ty	pe In DB		Ade	dress Offset In DB		00005	D4	ble And W	1
1	D5								400006	D5	ble And W	1
Transparent transmission	D6			ata type	bool	ý			400007	D6	ble And W	1
• Modbus RTU ≒ Modbus TCP	D7		Read-W	rite Type	Readable An	Writak v			00008	D7	ble And W	1
						)		8.000	-			
		Modbus	Maps A	ddresses	0	(0-2000)	MQTT Flag	YO				
E OPC UA							(Customizab	le)				
È⊷∯ Cloud							ОК	Cancel	ר ר			
MQTT Client One								cuncer				
- MQTT Client Two												
Ali IOT Cloud												
HUAWEI IOT Cloud												
- AWS IOT Cloud												
Kingpigeon Modbus												

Below is example of collecting PLC FX3U datapoints Y0-Y7 & D0-7

(1) Click FX3U, move mouse cursor to the right box, right click mouse and click Add to enter datapoint configuration window

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- (2) Set datapoint name, for example, Y0
- (3) Variable unit: Set any unit as required.
- (4) Address Type: Select the address type of Mitsubishi PLC register. Select Y for collecting Y0 datapoint
- (5) Starting Address: Input datapint register address, for example, Y0 register address in FX3U is 0, input 0
- (6) Data Type: Select data type according to PLC register. For example, select bool for Y as it's coil type.
- (7) Adding Qty: if consecutive addresses are collected, the same register can collect multiple addresses.
- (8) Read-write Type: Select from Read only and Read & Write according to PLC register.
- (9) Modbus Mapping Address: Input the address where the collected datapoint is saved in BL102. It can be any address from 0-2000 but can't be repeated. For example, Y0 data is saved in register address 0 of BL102
- (10)MQTT Flag: can be any identification mark, but can't be repeated. For example, set Y0 as the MQTT flag of datapoint Y0

(11) Click OK to confirm

Note: After clicking OK to confirm the configuration, datapoints will appear in the box lik above picture. If more datapoints to be added, right click the box and click Add to enter datapoint configuration box, repeat Step (2)-(11)

Note: Click Save Data. Gateway will restart automatically. After restarting, PLC FX3U datapoints are added successfully

### 5.2.1.4 LAN Port Configuration

Below is the example of connecting Siemens PLC S7-200SMART to BL102 LAN port.



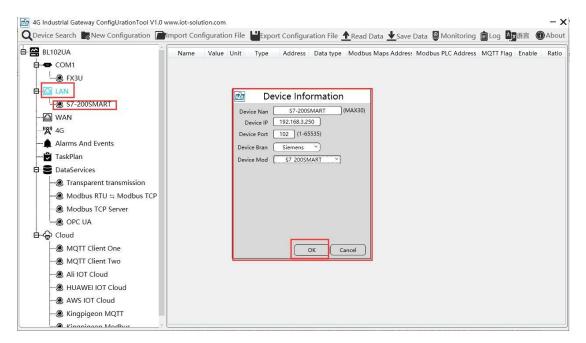
BL102UA	Name	Value	Unit	Туре	Address	Data type	Modbus	Maps Addr	es: Modbu	s PLC Addre	ss MQTT Flag	Enable	Ratic
сом1													
EX3U													
- Can LAN													
Double click to set properties,right click t	o add device		<i>m</i>	🖉 Eth	nernet S	ettings							
<b>(%)</b> 4G					-								
Alarms And Events				DHCP		Routing (							
🔁 TaskPlan				IP Address		192.168.3.1							
- DataServices													
Transparent transmission													
• Modbus RTU ≒ Modbus TCP													
• Modbus TCP Server				MAC Add	ess 08:	0:27:9d:c1:9b	ם 📗						
OPC UA					<u> </u>		- 1						
∃ Ç Cloud													
					ОК	Cancel							
MQTT Client Two													
Ali IOT Cloud													
HUAWEI IOT Cloud													
@ AWS IOT Cloud													

- (1) Double click LAN to enter configuration box
- (2) DHCP: enable auto IP distribution. Default is disabled.
- (3) Routing: Enable network routing function. Default is disabled. For example, PLC S7-200SMART does not need network. Thus it's necessary to enable it.
- (4) IP Address: defaut is 192.168.3.1, the IP addresses assigned to LAN port devices must be within the range. WAN and LAN IP address can't be the same. For example, S7-200SMART IP is fixed, then change IP address of gateway.
- (5) MAC Addres: Input LAN port MAC address
- (6) Click OK to confirm it

Note: Click Save Data and Gateway will restart. Turn off the power of Gateway and restart it. After that LAN port configuration is done successfully

Note: LAN Port IP Address specifies the IP address arrange of LAN port device. If device IP address is not within the range, data can't be collected. Thus it's necessary to change LAN port IP address according to requirement. IP Address change will not be effective until gateway is power off and powered on again

### 5.2.1.5 Add LAN Port Device-Siemens PLC S7-200SMART



- (1) Click LAN and right click mouse and click Add to enter device configuration box
- (2) Device Name: set device name, for example, set S7-200SMART as device name.
- (3) Device IP: input PLC IP address. For example, PLC S7-200SMART IP is 192.168.3.250, thus put 192.168.3.250 here. This is PLC IP address. PLC IP address and LAN Port IP address must be in the same range.
- (4) Device Port: input LAN port device port.
- (5) Device Brand: Select Siemens as Device Brand and select S7-200SMART as device model
- (6) Click OK to confirm adding PLC S7-200SMART

Note: S7-200SMART device icon will appear after confirming the configuration. If more devices to be added, perform the same procedure as Step (1)-(6)

Note: Click Save Data and gateway will restart automatically. After restarting, PLC S7-200SMART is added successfully

### 5.2.1.6 Add LAN Port Device PLC S7-200SMART Datapoints

Below is example of adding some datapoints of PLC S7-200SMART register Q & VW

BL102UA	Name	Value Unit	Type	Address	Data type	Modbus Mans Address	Modbus PLC Address	MOTT Flag	Enable	Rati
COM1	Q0		Q	0.0	bool	8	000009	Q0	ble And W	non
	Q1		Q	0.1	bool	9	000010	Q1	ble And W	non
FX3U	Q2		Q	0.2	bool	10	000011	Q2	ble And W	non
LAN	Q3		Q	0.3	bool	11	000012	Q3	ble And W	
	Q4		Q	0.4	bool	12	000013	Q4	ble And W	non
••• • • • • • • • • • • • • • • • • •	Q5 Q6		Q	0.5	bool	13	000014	Q5 Q6	ble And W ble And W	none
WAN	07		0	0.7	bool	14	000015	07	ble And W	
	VW0		VW	0	int16	8	400009	VW0	ble And W	1
4G	VVV2	1 1	VVV	2	Inclo	10	400011	VVV2	ble And W	
Alarms And Events	VW4		VW	4	int16	12	400013	VW4	ble And W	1
	VW6		VW	6	int16	14	400015	VW6	ble And W	1
askPlan	VW8	-	VW	8	int16	16	400017	VW8	ble And W	1
® Modbus RTU ≒ Modbus TCP ® Modbus TCP Server ® OPC UA ⊃ Cloud			Data typ Da Read-Wri	e In DB ta type te Type Re	VW0 VW int16 adable And W					
- • • • • • • • • • • • • • • • • • • •				dresses	8 /0	0-2000) MQTT Flag	VW0			

- (1) Click S7-200SMART, move mouse cursor to the right box, right click the mouse and click Add to enter datapoint configuration box
- (2) Variable Name: Set the name of datapoint, for example, VW0
- (3) Variable Unit: set any unit according to actual requirement
- (4) Address Type: select address type according to PLC register. Here VW0 address type is VW
- (5) Starting Address: Register address of datapoint. Here VW0 address is 0
- (6) Data Type: select data type according to PLC register type
- (7) Adding Qty: If addresses are consecutive, the same register will collect multiple addresses.
- (8) Read-Write Type: select from Read only and Read & Write.
- (9) Ratio: set the ratio to be multiplied or minified for uploading to cloud
- (10) Modbus Mapping Address: Set address where datapoint will be saved in BL102.

Modbus mapping address can be any from 0 to 2000 and it can't be repeated

For example, set 8 as VW0 mapping address

(11)MQTT Flag: It can be any identification mark and can't be repeated. For example: VW0

(12) Click OK to confirm.

Note: After confirming the configuration, datapoints will appear in the box like above picture. To add more datapoints, right click the box and click Add to enter configuration box. Perform the same procedure as Step (2)-(11)

Note: Click Save Data. Gateway will restart automatically and S7-200SMART datapoint is added successfully.

# 5.2.2 Upload PLC FX3U & S7-200SMART Data to Cloud

Below is the example of unloading PLC FX3U & S7-200SMART data to Modbus TCP Server, OPCUA, Alibaba Cloud, HUAWEI Cloud, AWS, and King Pigeon Cloud via MQTT & Modbus simultaneously. MQTT Client One and MQTT Client Two are for private platform and support connection with certificate. Configuration procedure is the same as King Pigeon cloud via MQTT.

# 5.2.2.1 Modbus TCP Server Configuration

🛃 4G Industrial Gateway ConfigUrationTool V1.0 w	ww.iot-solution.com					- ×
QDevice Search 🐚 New Configuration 👘 Ir	mport Configuration File	Export Configuration File 🛧	lead Data 👤 Save Data	Monitoring	自Log Ax语言	🗄 🛈 About
BL102UA	Basic Information					
E COM1						
S7-200SMART	Gateway Name		epresents the online status, gra gpigeon Modbus Online Status		line status wice Name Onlin	ne Status
<b>(X</b> ) 4G			pigeon MQTT Online Status	COM1	FX3U -200SMART	
- 🚊 Alarms And Events	Device Model	- Set up	T Client One Online Status T Client Two Online Status	•		
DataServices	Version Signal Strength	Ethernet Port WAN Y	DT Cloud Online Status			
® Transparent transmission ® Modbus RTU ≒ Modbus TCP	4G Module Model	Port 502 (1-65535)	WEI IOT Cloud Online Status	•		
• Modbus RT0 ≒ Modbus TCP	IMEI	OK Cancel	IOT Cloud Online Status	•		
OPC UA     Double click to set proper	ties SIM ICCID	89860043191574315142 w	92.168.1.1 Ping	•		
E - Cloud ⊛ MQTT Client One	SIM Registration Status					
- @ MQTT Client Two			Refresh			
Ali IOT Cloud     Jon Cloud     Jon Cloud		<u></u>				
- AWS IOT Cloud						
Kingpigeon MQTT     Kingpigeon Modbus						

- (1) Doubel click Modbus TCP Server to enter configuration box
- (2) Ethernet Port: Select WAN (In this example, industrial router R40 is connected through WAN) . Click WAN to view its IP address: 192.168.1.164
- (3) Port: This gateway is used as Modbus TCP Server monitoring port. Input any port within range 1-65535. For example, put 502
- (4) Click OK to confirm the setting of Modbus TCP Server.
- (5) Click Save Data. Gateway will restart automatically. After restarting, Modbus TCP Server configuration is done successfully.

### 5.2.2.2 View Data in KEPServerEX 6

Gateway provides data as Modbus TCP server. Modbus TCP host computer will collect data from BL102, like SCADA, MES host PCs. Function codes supported for collecting gateway data: 01 & 05 for boolean data; 03 & 06 for numerical data. Below example is simulating KEPServerEX 6 as host computer to collect BL102 data.



BL102UA	Name	Value	Unit	Туре	Address	Data type	Modbus Maps Address	Modbus PI	C Address	MQTT Flag	Enable	Rat
COM1	YO			γ	0	bool	0	0000	001	YO	ble And W	
L FX3U	Y1 Y2			Y	1	bool	1	0000		Y1 Y2	ble And W ble And W	
	¥3			Y	3	bool	3	0000	004	¥3	ble And W	
	Y4 Y5			Y	4	bool	4	0000		Y4 Y5	ble And W ble And W	no
S7-200SMART	Y6			Y	6	bool	6	0000	007	Y6	ble And W	no
- WAN	V7 D0			Y D	7	bool int16	7	4000		Y7 D0	ble And W ble And W	nc
( <b>X</b> ) 4G	D1			D	1	int16	1	4000	002	D1	ble And W	
Alarms And Events	D2 D3			D	2	int16 int16	2	4000		D2 D3	ble And W ble And W	
🗟 TaskPlan	D4			D	4	int16	4	4000	005	D4	ble And W	
DataServices	D5 D6			D	5	int16 int16	5	4000		D5 D6	ble And W ble And W	
Transparent transmission	D7			D	7	int16	7	4000		D7	ble And W	
. Modbus RTU ≒ Modbus TCP												
Modbus TCP Server												
OPC UA												
Cloud												
MQTT Client One												
MQTT Client Two				Right clic	ck to add vari	able point, do	ble click to display variable	e point attribu	ite			
Ali IOT Cloud						/						
- AWS IOT Cloud												
- Kingpigeon MQTT						/						
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登録を行す] - KEPServerEX 6 証言 編集(6) 初思(V) 耳真(T) 法行时(R) 報約(H) ② ② ③ ① ③ ③ ④ ③ ⑦ ⑦ 》 ③ ③ ③ ③ ③ ③ ③ ③ ③ ③ ③ ③ ③ ③ ③ ③	記名称 100 101 102 103 103 104 105 106 107 100 107 100 101 102 103 104 104	40 40 40 40 40 40 40 00 00 00 00 00 00 0	001 0002 0003 0004 0005 0006 0007 0008 0007 0008 0009 0010 0011 0011 0012 0013 0014		<b>属性组</b> <b>常规</b> 扫描模式 定时 自动降级 标记生成 变里导入设置		Word           Ward	100 100 100 100 100	BL102 Modbus TCP/IF Modbus	无 无 无 无 子 r P Bihemet		
日本語(F 計 J - KEPServerEX 6 配置 希報(6) 税用(V) 工具(T) 运行行け(N) 称約(H) 一 図 ② ① ① ③ ② ④ ⑦ ⑦ ⑦ ◎ ③ ③ ⑦ 第 1 ⑨ メ ③ ③ 注意性 ● 100 178 Server ● 100 17	記名称 100 101 102 103 104 105 106 107 100 101 102 103 104 103 104 105 106	40 40 40 40 40 40 40 00 00 00 00 00 00 0	001 0002 0003 0004 0005 0006 0007 0008 0009 0010 0011 0011 0012 0013 0014 0015		属性组 常規 扫描 精描 常 間 精 構 成 式 二 定 助 即 単 の 成 の で ま の の の の の の の の の の の の の		Word         Word	100 100 100 100 100	BL102 Modbus TCP/IF Modbus BL102-TCP Ser	无 无 无 无 子 r P Bihemet		
日日に  日本	記名称 100 101 102 103 103 104 105 106 107 100 107 100 101 102 103 104 104	40 40 40 40 40 40 00 00 00 00 00 00 00 0	001 0002 0003 0004 0005 0006 0007 0008 0007 0008 0009 0010 0011 0011 0012 0013 0014		<b>属性组</b> <b>常规</b> 扫描模式 定时 自动降级 标记生成 变里导入设置		Word	100 100 100 100 100	BL102 Modbus TCP/IF Modbus BL102-TCP Ser <192.168.1.164	无 无 无 无 子 r P Bihemet		
日朝田(1) - KEPServerEX 6 都通 新聞(5) 初田(1) 正有(7) 正方(7)() 新聞(H) 日間(2) (2) (2) (2) (2) (2) (2) (2) (2) (2)	記録 100 101 101 102 103 104 105 105 105 105 105 105 105 105	40 40 40 40 40 40 40 40 00 00 00 00 00 0	001 0002 0003 0004 0005 0006 0007 0008 0007 0008 0009 0010 0011 0012 0013 0014 0015 0016 0009 0011		■性组 常規 扫描 指描 指 前 が 記 号 外 理 男 次 四 浅 太 四 、 次 出 規 で 式 二 定 助 が 記 号 時 の 総 記 号 の の の の の の の の の の の の の の の の の の		Word	100 100 100 100 100 100 100	BL102 Modbus TCP/IF Modbus BL102-TCP Ser <192.168.1.164 启用 否	无 无 无 无 子 r P Bihemet		
野田伝行町) - KEPServerEX 6 配置 編集(に) 和風(Y) 正角(T) 正合で町(R) 単和(H) 一 (日)	記名称 100 101 102 103 104 105 105 105 106 107 103 104 105 103 104 105 103 104 105 105 105 105 105 105 105 105	40 40 40 40 40 40 40 00 00 00 00 00 00 0	001 0002 0003 0004 0005 0006 0007 0008 0009 0011 0012 0013 0014 0015 0016 0009 0011 0015 0016 0009 0011 0013		屬性组 常規 招描 時 加 建 等 外 理 令 处 理 以 改 置		Word	100 100 100 100 100 100 100	BL102 Modbus TCP/IF Modbus BL102-TCP Ser <192-168.1.164 启用	无 无 无 无 子 r P Bihemet		
###E(F 해외) - KEPServerEX 6 臣皇 ###E(F) 初臣(Y) 王月(T) 法行时(R) 報約(H)     ·································	記録 100 101 101 102 103 104 105 105 105 105 105 105 105 105	40 40 40 40 40 40 40 00 00 00 00 00 00 0	001 0002 0003 0004 0005 0006 0007 0008 0007 0008 0009 0010 0011 0012 0013 0014 0015 0016 0009 0011		■性组 常規 扫描 指描 指 前 が 記 号 外 理 男 次 四 浅 太 四 、 次 出 規 で 式 二 定 助 が 記 号 時 の 総 記 号 の の の の の の の の の の の の の の の の の の		Word	100 100 100 100 100 100 100 100	BL102 Modbus TCP/IF Modbus BL102-TCP Ser <192.168.1.164 启用 否	无 无 无 无 子 r P Bihemet		
# Server EX 6 配置     # (明(Y) 工具(T) 运行时(R) 報和(H)     # (明)     # (H)	記名称 100 101 102 103 104 105 105 105 106 107 103 104 103 104 105 104 105 104 105 104 105 104 105 104 105 105 105 105 105 105 105 105	40 40 40 40 40 40 40 00 00 00 00 00 00 0	001 0002 0003 0004 0005 0006 0007 0008 0007 0008 0007 0008 0007 0001 0001		屬性组 常規 招描 時 加 建 等 外 理 令 处 理 以 改 置		Word	100 100 100 100 100 100 100 100	BL102 Modbus TCP/IF Modbus BL102-TCP Ser <192.168.1.164 启用 否	无 无 无 无 子 r P Bihemet		
문화문行과] - KEPServerEX 6 配置 編集(5) 19(B(V) 耳阜(T) 运行과(R) 幕和(H) 교 교 교 교 (T) 运行과 (R) 독和(H) - 교 교 (T) - 도구라가(R) 幕和(H) - 표 (T) - 도구라가(R) - 도구라가(R) - 도구라가(R) - 표 (T) - 도구라가(R) - 도구라가(R) - 도구라가(R) - 표 (T) - 도구라가(R) - 도구라가(R) - 도구라가(R) - 표 (T) - 도구라가(R) - 도구라)(R) - 도구라)(R) - 표 (T) - 도구라)(R) - 도구라)(R) - 도구라)(R) - 도구라)(R) - 표 (T) - 도구라)(R) - 도구라)(R) - 도구라)(R) - 도구라)(R) - 도구라)(R) - 표 (T) - 도구라)(R) - 도구라)(R) - 도구라)(R) - 도구라)(R) - 도구라)(R) - - 표 (T) - -	記名称 記名称 100 101 102 103 104 105 105 106 107 103 104 103 104 105 104 105 106 107 104 105 106 107 107 107 107 107 107 107 107	40 40 40 40 40 40 40 00 00 00 00 00 00 0	001 0002 0003 0004 0005 0006 0007 0008 0007 0008 0007 0008 0007 0001 0001		屬性组 常規 招描 時 加 建 等 外 理 令 处 理 以 改 置		Word	100 100 100 100 100 100 100 100	BL102 Modbus TCP/IF Modbus BL102-TCP Ser <192.168.1.164 启用 否	无 无 无 无 子 r P Bihemet		
日朝田(ハ) 工具(八) 法斤行时(R) 単約(H)  ■ (回) 知思(ハ) 工具(八) 法斤行时(R) 単約(H)  ■ (回)	記名称 100 101 102 103 104 105 105 105 106 107 103 104 103 104 105 104 105 104 105 104 105 104 105 104 105 105 105 105 105 105 105 105	40 40 40 40 40 40 40 40 40 00 00 00 00 0	001 0002 0003 0004 0005 0006 0007 0008 0007 0008 0007 0008 0007 0001 0001		屬性组 常規 招描 時 加 建 等 外 理 令 处 理 以 改 置		Word	100 100 100 100 100 100 100 100	BL102 Modbus TCP/IF Modbus BL102-TCP Ser <192.168.1.164 启用 否	无 无 无 无 子 r P Bihemet		
日本語(日本) 日本) 日本語(日本) 日本語(日本) 日本語(日本) 日本語(日本) 日本(日本) 日本) 日本(日本) 日本(日本) 日本) 日本(日本) 日本) 日本(日本) 日本) 日本(日本) 日本(日本) 日本(日本) 日本) 日本(日本) 日本(日本	i22.5%           ID0           ID1           ID2           ID3           ID4           ID5           ID6           ID7           ID0           ID1           ID2           ID3           ID4           ID5           ID6           ID5           ID1           ID2           ID3           ID4           ID5           ID6           ID7           ID8           ID8           ID9  <	40 40 40 40 40 40 40 40 60 00 00 00 00 00 00 00 00 00 00 00 00	001 0002 0003 0004 0005 0006 0005 0006 0007 0008 0007 0008 0001 0011 0011 0011		屬性组 常規 招描 時 加 建 等 外 理 令 处 理 以 改 置		Word	100 100 100 100 100 100 100 100	BL102 Modbus TCP/IF Modbus BL102-TCP Ser <192.168.1.164 启用 否	无 无 无 无 子 r P Bihemet		
문원문(구방] - KEPServerEX 6 8년년 유립(6) 10년(V) 正員(T) 法所行时(R) 神形(H) 교 교 (1) 10(1) 25(7학(R) 神形(H) - 21(1) 25(7학(R) 학자(H) - 21(1) 25(1)	i228m           ID0           ID1           ID2           ID1           IVW0           IVW0           IVW0           IV1           IV2           IV3	40 40 40 40 40 40 40 40 00 00 00 00 00 0	0001 00002 00005 00006 00005 00006 00005 00008 00009 00010 00011 00012 00013 00014 00015 00011 00013 00015 00017 00017 00017 00017 00017 00010001 00017 00017 00017 00017 00017 00017 00017 00017 00017 00017 00017 00017 00017 00017 00017 00015 00014 00015 0005 0005 0005 0005 0		屬性组 常規 招描 時 加 建 等 外 理 令 处 理 以 改 置		Word	100 100 100 100 100 100 100 100	BL102 Modbus TCP/IF Modbus BL102-TCP Ser <192.168.1.164 启用 否	无 无 无 无 子 r P Bihemet		
Blit2DIAOPC UA     Go on 1-FX3U	i224m           ID0           ID1           ID2           ID1           ID2           ID2           ID2           ID3           ID4           ID5           ID6           ID7           IQ0           IQ1           IQ2           IQ3           IQ4           IQ5           IQ6           IQ7           IWW2           IWW2           IWW4           IWW8           IY2           IY3           IY4           IY5           IY6	40 40 40 40 40 40 40 00 00 00 00 00 00 0	001 0002 0003 0004 0005 0006 0005 0006 0007 0008 00010 0011 0013 00014 00015 00014 00015 00014 00013 00014 00013 00014 00013 00014 00013 00014 00013 00014 00013 00014 00013 00014 00014 00015 0007 0002 0002 0003 0004 0005 0007 0005 0006 0007 0005 0006 0005 0006 0006		屬性组 常規 招描 時 加 建 等 外 理 令 处 理 以 改 置		Word         Word           WithUP         Word           Word         Word           Word         Word           Word         Word           Word         Word           Word         Word           Word         Word      <	100 100 100 100 100 100 100 100	BL102 Modbus TCP/IF Modbus BL102-TCP Ser <192.168.1.164 启用 否	无 无 无 无 子 r P Bihemet		
日田道行封] - KEPServerEX 6 証言 編集(6) 知思(V) 耳見(T) 运行封(R) 報約(H)	i228m           ID0           ID1           ID2           ID1           IVW0           IVW0           IVW0           IV1           IV2           IV3	40 40 40 40 40 40 40 00 00 00 00 00 00 0	0001 00002 00005 00006 00005 00006 00005 00008 00009 00010 00011 00012 00013 00014 00015 00011 00013 00015 00017 00017 00017 00017 00017 00010001 00017 00017 00017 00017 00017 00017 00017 00017 00017 00017 00017 00017 00017 00017 00017 00015 00014 00015 0005 0005 0005 0005 0		屬性组 常規 招描 時 加 建 等 外 理 令 处 理 以 改 置		Word         Word           WithUP         Word           Word	100 100 100 100 100 100 100 100	BL102 Modbus TCP/IF Modbus BL102-TCP Ser <192.168.1.164 启用 否	₹ ₹ ₹ Pehemet 		



元     元       元     元       元     元       元     二       本     ×       正用     邦助         Timestamp     Quality     Update Count       16:52:05:165     良好     21       16:52:05:165     良好     17       16:52:05:163     良好     17       16:47:15:167     良好     2
<ul> <li>売売売売売売売売売売売売売売売売売売売売売売売売売売売売売売売売売売売売</li></ul>
<ul> <li>売</li> <li>売</li></ul>
<ul> <li>売</li> <li>売</li></ul>
<ul> <li>元</li> <li>ズ</li> <li>ズ</li> <li>(A) (A) (A) (A) (A) (A) (A) (A) (A) (A)</li></ul>
工mestamp         Qualty         Update Count           16:52:65:163         良好         21           16:52:65:163         良好         17           16:52:67:163         良好         17           16:47:15.167         良好         2
<u> 正用 称助 </u> Timestamp Quality Update Count 16.52-05.165 良好 21 16.52-56.169 良好 17 16.52-56.169 良好 17 16.42-115.167 良好 2
Timestamp         Quality         Update Count           16:52:40.165         良好         21           16:52:56:169         良好         17           16:52:56:169         良好         17           16:47:15:167         良好         2
Timestamp         Quality         Update Count           16:52:40.165         良好         21           16:52:56:169         良好         17           16:52:56:169         良好         17           16:47:15:167         良好         2
Timestamp         Quality         Update Count           16:52:40.165         良好         21           16:52:56:169         良好         17           16:52:56:169         良好         17           16:47:15:167         良好         2
Timestamp         Quality         Update Count           16:52:40.165         良好         21           16:52:56:169         良好         17           16:52:56:169         良好         17           16:47:15:167         良好         2
Timestamp         Quality         Update Count           16:52:40.165         良好         21           16:52:56:169         良好         17           16:52:56:169         良好         17           16:47:15:167         良好         2
Timestamp         Quality         Update Count           16:52:40.165         良好         21           16:52:56:169         良好         17           16:52:56:169         良好         17           16:47:15:167         良好         2
Timestamp         Quality         Update Count           16:52:40.165         良好         21           16:52:56:169         良好         17           16:52:56:169         良好         17           16:47:15:167         良好         2
Timestamp         Quality         Update Count           16:52:40.165         良好         21           16:52:56:169         良好         17           16:52:56:169         良好         17           16:47:15:167         良好         2
Timestamp         Quality         Update Count           16:52:40.165         良好         21           16:52:56:169         良好         17           16:52:56:169         良好         17           16:47:15:167         良好         2
Timestamp         Quality         Update Count           16:52:40.165         良好         21           16:52:56:169         良好         17           16:52:56:169         良好         17           16:47:15:167         良好         2
Timestamp         Quality         Update Count           16:52:40.165         良好         21           16:52:56:169         良好         17           16:52:56:169         良好         17           16:47:15:167         良好         2
Timestamp         Quality         Update Count           16:52:40.165         良好         21           16:52:56:169         良好         17           16:52:56:169         良好         17           16:47:15:167         良好         2
Timestamp         Quality         Update Count           16:52:40.165         良好         21           16:52:56:169         良好         17           16:52:56:169         良好         17           16:47:15:167         良好         2
Timestamp         Quality         Update Count           16:52:40.165         良好         21           16:52:56:169         良好         17           16:52:56:169         良好         17           16:47:15:167         良好         2
Timestamp         Quality         Update Count           16:52:40.165         良好         21           16:52:56:169         良好         17           16:52:56:169         良好         17           16:47:15:167         良好         2
Timestamp         Quality         Update Count           16:52:40.165         良好         21           16:52:56:169         良好         17           16:52:56:169         良好         17           16:47:15:167         良好         2
16.52-40.165 良好 21 16.52.56.169 良好 17 16.52.56.169 良好 17 16.47:15.167 良好 2
16.52-40.165 良好 21 16.52.56.169 良好 17 16.52.56.169 良好 17 16.47:15.167 良好 2
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16:46:51.167 良好 2
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16:45:51.172 良好 1
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16:45:51.172 良好 1
16:45:51.174 良好 1 16:45:51.174 良好 1

# 5.2.2.3 OPC UA Configuration

BL102UA ← COM1 └─@ FX3U	rBasic Information						
ST-200SMART		da -	OPC UA	resents the online status, gray re	presents th	ne offline status	
<ul> <li>WAN</li> <li>WAN</li> <li>Alarms And Events</li> <li>TaskPlan</li> <li>DataServices</li> <li>Transparent transmission</li> <li>Modbus RTU = Modbus TCP</li> <li>Modbus TCP Server</li> <li>Opc UA</li> <li>Cloud Double click to set properties</li> <li>MQTT Client One</li> </ul>	Gateway Name Gateway Time Device Model Version Signal Strength 4G Module Model IME Mobile operators SIM ICCID SIM Registration Status	Enable Ethernet Por Por Anonymou: Use Password Security Polic Certificate PrivateKer	t 4840 (1-65535) (MAX50) (MAX50) (MAX50) (MAX50) (MAX50) (MAX50)	sigeon Modbus Online Status Digeon MQIT Online Status T Client One Online Status T Cloud Online Status T Cloud Online Status VEI IOT Cloud Online Status IOT Cloud Online Status <u>92.168.1.1</u> Ping wbaidu.com Ping	Port COM1 LAN	Device Name FX3U S7-2005MART	Online Stat
MQTT Client Two     MQTT Cloud     MI IOT Cloud     HUAWEI IOT Cloud     WAYS IOT Cloud     Wingpigeon MQTT     Kingpigeon MQTT				Refresh			

- (1) Double click OPC UA to enter configuration box
- (2) Click Enable to enable(green color) OPC UA. Default is disabled(gray color).
- (3) Ethernet Port: Select WAN (This example is connecting router R40 through WAN) Click WAN to view its IP address: 192.168.1.164
- (4) Port: OPC UA Port, default is 4840
- (5) Anonymous: If enabled, OPC UA can be connected without ID and password
- (6) User, Password: only to be set when anonymous is disabled
- (7) Security Policy: Select connection encryption policy(This example is connecting without encryption, thus select None)
- (8) Certificate, PrivateKey: This example is connecting without encryption, then it's not necessary to upload certificate and privatekey.
- (9) Click OK to confirm OPC UA configuration
- (10) Click Save Data. Gateway will restart automatically. After device restarting, OPC UA is configured successfully.

# 5.2.2.4 View Data in KEPServerEX 6

Gateway BL102 provides data as OPC UA server. View data in KEPServerEX 6 as below:



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◎ 項目 □ (前) 连接性 □ (二) 正初2-TCP Server □ (二) □ (1) 102 □ (2)	设备名称 聞BL102UA-OPC UA	/ 型号 OPC UA		ID	说明	
□ 1102UAOPC UA □ 10 getwewy □ 10 m _FX3U □ 10 m _FX3U □ 4 模拟器示例 □ 4 模拟器示例		@ 屬性编辑器 - BL102UA-OF 属性组	日端点		×	
→ 584 + 50 Annuel Taps + 50 Annuel & Events - 51 Annuel & Even		常規 写仇化 <u>海路</u> ( <u>A 1862</u> ) ( <u>A 1862</u> )	線点 URL 安全論略 消息模式	<u>ゅ</u> ゅにねア//192.168.1.1 え え	64 4840	
L \Lambda Add Agent			<b>我认信</b>	<b>議定</b> 取消	应用 探助	
····································	Image: Section 2016         Section 2016           Image: Section 2016         Section 2017           Image: Section 2016         Section 2016           Image: Section 2016         Section	ns=1;g=(00090007 ns=1;g=(00010000 ns=1;g=(00010001 ns=1;g=(00010002 ns=1;g=(00010003 ns=1;g=(00010005 ns=1;g=(00010005	0000-6560 Word 0000-6560 Word 0000-6560 Word 0000-6560 Word 0000-6560 Word 0000-6560 Word 0000-6560 Boolean 0000-6560 Boolean 0000-6560 Boolean 0000-6560 Boolean	月到規定年 100 100 100 100 100 100 100 100 100 10	缩无无无无无无无无无无无无无无无无无无无无无无无无无无无无无无无无无无无无无无	<b>说明</b>
Image: Shift in the second	#i22sti         II 572005MAR	T_Q1         m=1s_4(01010)           T_Q2         ms1s_6(01010)           T_Q3         ms1s_9(01010)           T_Q4         ms1s_9(01010)           T_Q6         ms1s_9(01010)           T_Q6         ms1s_9(01010)           T_Q6         ms1s_9(01010)           T_Q7         ms1s_9(01010)           T_Q7         ms1s_9(01010)           T_Q7         ms1s_9(01010)           T_W0         ms1s_9(01000)           T_W2         ms1s_9(01000)           T_W44         ms1s_9(01000)           T_W44         ms1s_9(01000)           T_W44         ms1s_9(01000)	抗ちた豆     (抗ちた豆)     (加入の00016660… Boolean     100006660… Boolean     10200005660… Boolean     10200005660… Boolean     10500005660… Boolean     10500005660… Boolean     1000005660… Word     1000005660… Word     100005660… Word     108-00005660… Word	13冊座軍 100 100 100 100 100 100 100 100 100 10	缩 无无无无无无无无无无无无无	<b>识明</b>



Kepware.KEPServerEX.V6	项ID	数据类型	· 值	Timestamp	Quality	Update Count
DataLogger	BL102UA-OPC UA.BL102UA-OPC UA.gateway.lan_S7-200SMART.S7-200SMART_VW0	Word	8	17:13:57.501	良好	75
System	BL102UA-OPC UA.BL102UA-OPC UA.gateway Jan S7-200SMART S7-200SMART VW2	Word	0	17:13:57.501	良好	75
_ThingWorx	BL102UA-OPC UA.BL102UA-OPC UA.gateway Jan_S7-200SMART.S7-200SMART_VW4	Word	0	17:13:57.501	良好	75
BL102-TCP ServerCommunicationSerialization	BL102UA-OPC UA.BL102UA-OPC UA.gateway Jan S7-200SMART.S7-200SMART VW6	Word	0	17:13:57.501	良好	75
BL102-TCP ServerStatistics	BL102UA-OPC UA.BL102UA-OPC UA.gateway Jan S7-200SMART.S7-200SMART VW8	Word	18	17:13:57.502	良好	75
BL102-TCP Server_System BL102-TCP Server.BL102	BL102UA-OPC UA.BL102UA-OPC UA gateway Jan S7-200SMART.S7-200SMART Q0	Boolean	1	17:09:11.491	良好	27
BL102-TCP Server.BL102 BL102-TCP Server.BL102. Statistics	BL102UA-OPC UA.BL102UA-OPC UA.gateway Jan S7-200SMART.S7-200SMART Q1	Boolean	0	17:09:11.491	良好	25
BL102-TCP Server.BL102_Statistics	BL102UA-OPC UA.BL102UA-OPC UA.gateway.lan S7-200SMART.S7-200SMART Q2	Boolean	0	17:09:11.492	良好	25
BL102UA-OPC UA. Statistics	BL102UA-OPC UA.BL102UA-OPC UA.gateway Jan S7-200SMART.S7-200SMART Q3	Boolean	0	17:09:11.492	良好	25
BL102UA-OPC UA. System	BL102UA-OPC UA.BL102UA-OPC UA.gateway.Jan S7-200SMART.S7-200SMART Q4	Boolean	0	17:09:11.492	良好	25
DE 1020A OF C OAL System	BL102UA-OPC UA.BL102UA-OPC UA.gateway Jan S7-200SMART.S7-200SMART Q5	Boolean	0	17:09:11.492	良好	25
BL102UA-OPC UA.BL102UA-OPC UA.gateway	BL102UA-OPC UA.BL102UA-OPC UA.gateway Jan S7-200SMART.S7-200SMART Q6	Boolean	0	17:09:11.492	良好	25
1210.257 (M. Stausucs	BL102UA-OPC UA.BL102UA-OPC UA gateway Jan S7-200SMART.S7-200SMART Q7	Boolean	1	17:09:11.492	良好	25
樟拟器示例 System	BL102UA-OPC UA.BL102UA-OPC UA.gateway.com1 FX3U.FX3U D0	Word	27	17:01:50.464	良好	4
複拟器示例:函数	BL102UA-OPC UA.BL102UA-OPC UA gateway.com1 FX3U.FX3U D7	Word	85	17:01:50.473	良好	4
■ 模拟器示例 函数 _System	BL102UA-OPC UA.BL102UA-OPC UA.gateway.com1 FX3U.FX3U D1	Word	0	17:01:50 472	良好	3
■ 數据类型示例Statistics	BL102UA-OPC UA.BL102UA-OPC UA gateway.com1 FX3U.FX3U D2	Word	0	17:01:50.472	良好	3
動 a 据类型示例System	BL102UA-OPC UA.BL102UA-OPC UA.gateway.com1 FX3U.FX3U D3	Word	0	17:01:50.472	良好	3
■ 数据类型示例.16 位设备System	BL102UA-OPC UA.BL102UA-OPC UA.gateway.com1 FX3U.FX3U D4	Word	0	17:01:50.472	良好	3
■ 数据类型示例 16 位设备 B 寄存器	BL102UA-OPC UA.BL102UA-OPC UA.gateway.com1 FX3U.FX3U D5	Word	0	17:01:50.472	良好	3
■ 数据类型示例 16 位设备 K 寄存器	BL102UA-OPC UA.BL102UA-OPC UA.gateway.com1 FX3U.FX3U D6	Word	ő	17:01:50.473	良好	3
動 据类型示例 16 位设备 R 寄存器	BL102UA-OPC UA.BL102UA-OPC UA.gateway.com1 FX3U.FX3U Y0	Boolean	1	16:46:51.981	良好	2
■ 数据类型示例 16 位设备 S 寄存器	BL102UA-OPC UA.BL102UA-OPC UA.gateway.com1 FX3U.FX3U Y7	Boolean	1	16:46:54 483	良好	2
■ 数据类型示例 8 位设备_System	BL102UA-OPC UA.BL102UA-OPC UA.gateway.com1 FX3U.FX3U Y1	Boolean	0	16:45:52.475	良好	1
■ 数据类型示例 8 位设备 B 寄存器	BL102UA-OPC UA.BL102UA-OPC UA.gateway.com1 FX3U.FX3U Y2	Boolean	0	16:45:52 476	良好	1
■ 数据类型示例 8 位设备 K 寄存器	BL102UA-OPC UA.BL102UA-OPC UA.gateway.com1 FX3U.FX3U Y3	Boolean	0	16:45:52.477	良好	1
■ 数据类型示例 8 位设备 R 寄存器 ■ 教据类型示例 8 位设备 S 寄存器	BL102UA-OPC UA.BL102UA-OPC UA.gateway.com1 FX3U.FX3U Y4	Boolean	0	16:45:52.478	良好	1
■ 劉炳尖望示例。1212頁頁。○ 奇仔器	BL102UA-OPC UA.BL102UA-OPC UA.gateway.com1 FX3U.FX3U Y5	Boolean	0	16:45:52.479	lear 良好	1
	BL102UA-OPC UA.BL102UA-OPC UA.gateway.com1 FX3U.FX3U Y6	Boolean	0	16:45:52 480	Reid 良好	

# 5.2.2.5 Alibaba Cloud Configuration

Ali IO	DT Cloud	
Deable     Secret Key     X509     ProductKey     DeviceName     BL102     DeviceSecret     Regional     East China 2 (shanghai)     ×     Root Certificate     Client Certificate     Client Secret Key     Automatic data upload cycle     30     10-9996)	Variable Point Type Port Device Variable Name	Ted represents the online status, gray represents the offline status         Kingpigeon Modbus Online Status         Minipigeon MOIT Online Status         MQTT Client One Online Status         All IOT Cloud Online Status         All IOT Cloud Online Status         AWS IOT Cloud Online Status         IN2 T Status         J12 T Status         AWS IOT Cloud Online Status         IN2 T Status
By Cloud      MQTT Client One     MQTT Client Two     MIOT Cloud     MIOT Cloud     MKI IOT Cloud	OK Cancel	Refresh

- (1) Double click Ali IOT Cloud to enter configuration box
- (2) Click Enable to enable(Green) Alibaba Cloud. Default is disabled (Gray )
- (3) Secret Key/X.509: Click it to move the button on the right for connecting with certificate. Default is connecting with Private Key with button on the left
- (4) Product Key: Input the same ProductKey as the one in Alibaba cloud
- (5) Device Name: Input the same device name as the one in Alibaba cloud
- (6) Device Secret: Input the same device secret as the one in Alibaba cloud
- (7) Region: Select Alibaba cloud region. Default is East China 2(Shanghai)
- (8) Root Certificate: Upload root certificate if connecting with certificate is enabled
- (9) Client Certificate: Upload client certificate if connecting with certificate is enabled
- (10) Client Secret Key: Upload client secret key if connecting with certificate is enabled
- (11) Automatic Data Upload Cycle: Cycle time of data uploading, default is 30s
- (12) Datapoint Uploading Selection: select the datapoints to be uploaded on the right box. In default the box is blank with all datapoints to be uploaded.

- (13) Click OK to confirm the setting
- (14) Click Save Data. Gateway will restart automatically and Alibaba cloud is enabled successfully. Open configuration software and login the device. Alibaba cloud connection status can be viewed from basic information. If indicator button is red, it means device is connected with Alibaba cloud. Slave device connection status can be viewed from the right box

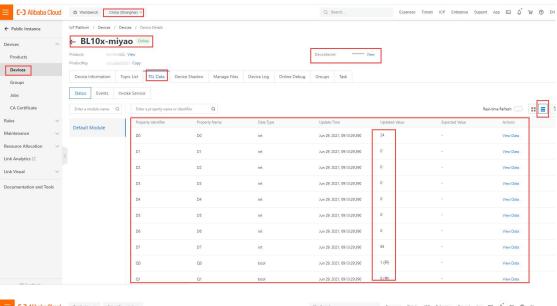
### 5.2.2.6 View Data in Alibaba Cloud

Add datapoint to Alibaba Cloud as below picture. Make sure datapoint mark is the same as MQTT flag in configuration software. For example, MQTT flag of datapoint VW8 of PLC S7-200SMART is VW8 in configuration software, then set VW8 as datapoint mark in Ali Cloud. Function name and variable name can be different.

Device Search	New Configuration	Import Cor	nfiguratio	n File 📙	Expor	t Configur	ation File	🛧 Read Data 🛓 Save	Data 🧧 Monitorino	a 💼 Log 🗛 🙀	語 🔞	
BL102UA		Name	Value		ype	Address		Modbus Maps Addres	1997		Enable	Ratio
		Q0	value	on i	Q	0.0	bool	8	000009		e And W	none
COM1		Q1			Q	0.1	bool	9	000010		e And W	none
•@ FX3U		Q2			Q	0.2	bool	10	000011		e And W	none
		Q3 Q4			Q	0.3	bool	11	000012		e And W e And W	none
		Q4 Q5			Q	0.4	bool bool	12	000013		e And W	none
	SMART	Q6			Q	0.6	bool	14	000015		e And W	none
WAN		Q7			Q	0.7	bool	15	000016		e And W	none
" <b>&amp;</b> " 4G		VW0			VW VW	0	int16	8	400009		e And W	1
	81.7597 - 98	VW2 VW4			VW	2	int16 int16	10	400011 400013		e And W e And W	1
Alarms And	Events	VW6			vw	6	int16	14	400015		e And W	1
🕏 TaskPlan		VW8			vw	8	int16	16	400017		e And W	1
DataService												
1 7												
Transpa	arent transmission									/		
Modbu	s RTU ≒ Modbus TCF	P										
Modbu	s TCP Server								/			
OPC UA	<b>\</b>											
Cloud												
_												
- MQTT C	Client One											
MQTT C	client Two											
Ali IOT	Cloud											
- O HUAWE	I IOT Cloud											
AWS IO	Ticlaud											
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Kingpig	eon MQTT	-										
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Data received in Alibaba cloud:





C-J Alibaba Cloud 🛛 🗢	Workbench China (S	Shanghai) 🗸			Q Search	Exper	ises Tickets ICP Enterprise	Support App 🖸 🛕 🗑 🕐
Public Instance		44	44	0001	Julh 29, 2021, 09119/02/918	vilo		view Data
		Q5	Q5	bool	Jun 29, 2021, 09:19:02.918	0(关)		View Data
Products		Q6	Q6	bool	Jun 29, 2021, 09:19:02.918	0 ( <del>X</del> )		View Data
Devices		Q7	Q7	bool	Jun 29, 2021, 09:19:02.918	0 (关)		View Data
Groups		VW0	VWD	int	Jun 29, 2021, 09:19:02.918	8		View Data
Jobs		VW2	VW2	int	Jun 29, 2021, 09:19:02.918	0		View Data
CA Certificate		VW4	VW4	int	Jun 29, 2021, 09:19:02.918	0		View Data
intenance V		VW6	VW/6	int	Jun 29, 2021, 09:19:02.918	0		View Data
ource Allocation		VW8	VW8	int	Jun 29, 2021, 09:19:02.918	0		View Data
k Analytics 🖸		YD	YO	bool	Jun 29, 2021, 09:19:02.918	1 (开)		View Data
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cumentation and Tools		¥2	Υ2	lood	Jun 29, 2021, 09:19:02.918	0 (0)		View Data
		¥3	Y3	bool	Jun 29, 2021, 09:19:02.918	0 (0)		View Data
		¥4	Y4	lood	Jun 29, 2021, 09:19:02.918	0 (0)		View Data
		Υ5	Y5	bool	Jun 29, 2021, 09:19:02.918	0 (0)		View Data
		¥6	Y6	loool	Jun 29, 2021, 09:19:02.918	0 (0)		View Data
		¥7	Υ7	bool	Jun 29, 2021, 09:19:02.918	1 (1)		View Data
T Feedback							•	

# 5.2.2.7 HUAWEI Cloud Configuration

DLIUZUA	^ (	port Configuration File 🏼 Export C	-					
COM1		Basic Information						
. FX3U	-Za		LIOT Claud				_	
- Can		HUAWI	I IOT Cloud					
\$ \$7-200SMART	Connection Address		-				_	
- WAN			Variable Point Type		Device	Variable Name Y0	e status	
	Server IP/ Domain N	Name	- Variable Point Variable Point	COM1 COM1	FX3U FX3U	Υ0 Υ1	Name	Online Statu
	Server	Port 1883 (1-65535)	Variable Point	COM1	FX3U	Y2	SMART	
Alarms And Events	C		Variable Point	COM1	FX3U	Y3	USWINKT	
🛱 TaskPlan	s	ecret Key 🔵 X.509	Variable Point	COM1	FX3U	Y4		
DataServices	Device IE		Variable Point	COM1	FX3U	Y5		
• Transparent trar	Device Secret Key	/	Variable Point	COM1	FX3U	¥6		
— 🖲 Modbus RTU ≒	Root Certificate		Variable Point	COM1	FX3U	¥7		
Modbus TCP Se			Variable Point Variable Point	COM1 COM1	FX3U FX3U	D0 D1		
OPC UA	Client Certificate		Variable Point	COM1	FX3U FX3U	D1 D2		
Cloud	Client Secret Ke	/	Variable Point	COM1	FX3U	D3		
MQTT Client On	Service IE	FX3U Add Delet		COM1	FX3U	D4		
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S Industrial Gateway ConfigU evice Search R New Con DETUZUA 	JrationTool V1.0 ww nfiguration internation	Port Configuration File Export (		Read Da	ta 🛃 Save Data	Monitoring	Log A	3语言 🔘
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- (1) Double click HUAWEI IOT Cloud to enter configuration box
- (2) Click Enable to enable(green) HUAWEI Cloud. Default is disabled(gray)
- (3) Server IP/Domain Name: input HUAWEI Cloud connecting address(Login to HUAWEI Cloud, enter console, click overview to get server IP address)
- (4) Server Port: Default is 1883 for connecting with secret key. If connecting with certificate is selected, server port is 8883
- (5) Secret Key/X.509: click it to move the button on the right to set connecting with certificate. In default the button is on the left with setting of connecting with secret key.
- (6) Device ID: set the same device ID as the one in HUAWEI Cloud
- (7) Device Secret Key: Set the same device secret key as the one in HUAWEI Cloud

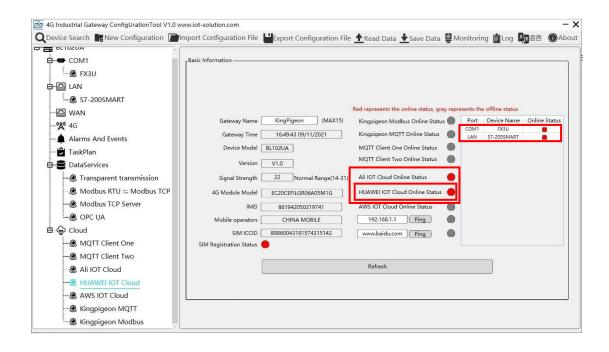
Page 72 of 88 Pages

(8) Root Certificate: Upload root certificate if connecting with certificate is selected

KING PIGEON

-

- (9) Client Certificate: Upload client certificate if connecting with certificate is selected
- (10) Client Secret Key: Upload client secret key if connecting with certificate is selected.
- (11)Service ID: Input the same service ID as the one in HUAWEI Cloud. Mutiple service IDs can be set. This example is service IDs FX3U and S7\_200SMART
- (12) Automatic Data Upload Cycle: Cycle time of uploading data, default is 30s
- (13)MQTT Data Retransmission: Click it to enable(green) MQTT offline data retransmission once network resumes. Gray indicates disabled
- (14) Datapoint Uploading Selection: Right click the box to select datapoints for uploading. In default the right box is blank with all datapoints to be uploaded. For example, select Service ID FX3U datapoints to upload. Right click the box to enter datapoint box, select FX3U datapoint Y0 and hold the mouse to drag it to uploading points. Click OK to confirm and the datapoint will appear in the box. Select service ID S7\_200SMART, right click the box to enter datapoint box, select datapoint and click OK to confirm it.Click OK to confirm HUAWEI Cloud configuration
- (15) Click Save Data. Gateway will restart automatically and HUAWEI Cloud is enabled successfully. Open gateway configuration software and login device. HUAWEI Cloud connection status can be viewed from basic information. Red indicates device is connected with HUAWEI Cloud. On the right side, slave device connection status can be viewed

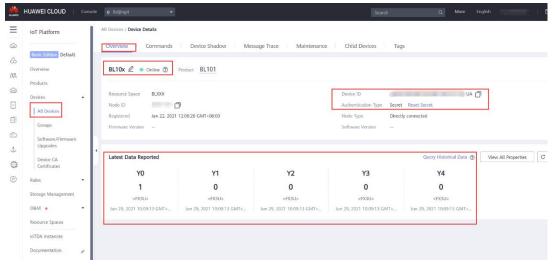


# 5.2.2.8 View Data in HUAWEI Cloud

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Ξ	IoT Platform	Products / BL				
6	ior riacioni					
8	Basic Edition Default	BL ID: Registered	devices: 2			
	Overview					
.00.	Products	Product Name B	Resource Space			
	Devices •	Device Type modbus		MQTT		
0	Rules 👻	Data Type Json Manufacturer Jinge	Created	2021/01/22 11:12:18 GMT+08:00		
Ð		Manufacturer Jinge				
Ø	Storage Management					
4	• M80	Model Definition Online Debugging	Topic Management			
	Resource Spaces	Add Service Import from Library Imp	ort from Local Import from Excel			Learn About Produc
۲	IoTDA Instances					
©	Documentation d <sup>p</sup>	Service List	Service ID FX3U Service Type FX3U	Description		Modify Ser
	API Explorer de					
	IoT Device Provisioning 🖉	400	Add Property Batch Deletion			
			Property Name	Data Type	Access Mode Description	Operation
		FX3U	10	Integer	Readable,Writable	Copy Edit De
		S7_200SMART	<u> </u>	Integer	Readable,Writable	Copy Edit De
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			□ Y3	Integer	Readable,Writable	Copy Edit De
			Y4	Integer	Readable, Writable	Copy Edit De
			□ Y5	Integer	Readable, Writable	Copy Edit De
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Ξ	IoT Platform					
0		Product Name BL111	Resource S	space BLXXX		
ය	Basic Edition Default	Device Type modbus	Protocol	MQTT		
	Overview	Data Type json	Created	2021/01/22 11:12:18 GMT+08:00		
.002	Products	Manufacturer jinge				
	Devices •					
0		Model Definition Online Debugging	Topic Management			
61	Rules 👻					
	Storage Management	Add Service Import from Library	Import from Local Import from Ex	cel		×
	0&M • •	Service List 💮 🛈	Service IE FX3U Service Type	Edit Property		
$\triangle$	Resource Spaces		Server of the server spec	* Property Name	YO	
$\oplus$	IoTDA Instances		Add Property Batch D			
O	م Documentation		Property Name	E Description		
	•	< (III)	- Y0	1		0/128
	API Explorer e	FX3U				*
	IoT Device Provisioning de	\$7_2005MART	□ Y2	* Data Type	Integer	•
			U 13	* Access Permissions	Read Write	
			□ Y4	* Value Range	-2147483647 - 2147483647	
			□ Y5	II Step	0	
			□ Y6	h		
			□ ¥7	li Unit		
			D0	h		
			D1	b	OK Cancel	
			10 Total Records: 16	1 2 >		



-	HUAWEI CLOUD	Console	♥ Beijing4 ▼		Search	Q	Billing Center	Resources	Service Tickets	Enterprise	ICP License	Support	English
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				10 • Total Records: 1 < 1 >									



Click View All Attributes or Device Shadows to view all data as below picture:

AWEI			humidity	Read-only	6930	
Ξ	IoT Platform		power	Read-only	1217	
2	Basic Edition Default	FX3U	YO	Read-only,Writable	1	
3	Overview		Y1	Read-only,Writable	0	
٨	Products		Y2	Read-only,Writable	0	
2	Devices 🔺		Y3	Read-only,Writable	0	
0	All Devices		Y4	Read-only,Writable	0	
1	Groups		Y5	Read-only,Writable	0	
2	Software/Firmware Upgrades		Y6	Read-only,Writable	0	
D	▲ Device CA		Y7	Read-only,Writable	1	
5	Certificates		D0	Read-only,Writable	24	
2	Rules 👻		D1	Read-only,Writable	0	
	O&M		D2	Read-only,Writable	0	
	Resource Spaces		D3	Read-only,Writable	0	
	IoTDA Instances		D4	Read-only,Writable	0	
	Documentation o		D5	Read-only,Writable	o	
	API Explorer de		D6	Read-only,Writable	0	
	IoT Device		D7	Read-only,Writable	85	



UAWEI CLOUD   Co						Q, More English
27.27.17.17.10			D4	Read-only, Writable	0	
IoT Platform			D5	Read-only, Writable	0	
Basic Edition Default			D6	Read-only, Writable	0	
Overview			D7	Read-only, Writable	85	
Products		\$7_2005MART	Q0	Read-only, Writable	1	
Devices 🔺			Q1	Read-only, Writable	0	
All Devices			Q2	Read-only, Writable	0	
Groups			Q3	Read-only, Writable	0	
Software/Firmware Upgrades			Q4	Read-only, Writable	0	
Device CA	4		Q5	Read-only, Writable	0	
Certificates			Q6	Read-only, Writable	0	
Rules 🔻			Q7	Read-only, Writable	0	
Storage Management	×		VW0	Read-only, Writable	8	
Resource Spaces			VW2	Read-only, Writable	0	
IoTDA Instances			VW4	Read-only, Writable	0	
Documentation @			VW6	Read-only, Writable	0	
			VW8	Read-only,Writable	0	

#### 5.2.2.9 AWS Cloud Configuration

AWS supports publishing multiple topics. Configuration is the same as that of configuring multiple service ID of HUAWEI Cloud. Below example is configuring single topic with all datapoints to be published.

		le ▲Read Data ¥Save Data ❷Monitoring 會Log 國语言 ④Ab
Za AWS	IOT Cloud	
Client Certificate	Variable Point Type Port Device Variable Name	Red represents the online status, gray represents the offline status Kingpigeon Modbus Online Status Kingpigeon MQIT Online Status MQIT Client One Online Status MQIT Client Two Online Status Ali IOT Cloud Online Status HUAWEI IOT Cloud Online Status H
Client Secret Key		AWS IOT Cloud Online Status
Ali IOT Cloud     B HUAWEI IOT Cloud     AWS IOT Cloud     AWS IOT Cloud     Kingpig Double click to set p     Kingpigeon Modbus	roperties	Refresh

- (1) Double click AWS to enter configuration box
- (2) Click Enable to enable(green) AWS, default is disabled(gray)
- (3) Server IP/Domain Name: Input endpoint of connecting to AWS (Login to AWS, enter console, click Things and click Interact to view it)
- (4) Server Port: 8883
- (5) Item Name: Input thing ARN(Click Details of Thing to view ARN in AWS)
- (6) Client ID: Input AWS Account ID (view from user information in AWS)
- (7) Root Certificate: Select root certificate and upload it
- (8) Client Certificate: Select client certificate and upload it



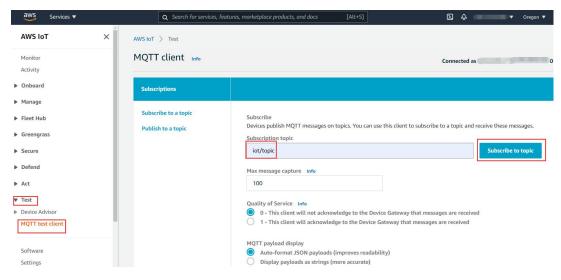
- (9) Client Secret Key: Select client secret key and upload it.
- (10) Publish Topic: Input the topic of rule created in AWS. It's the topic of MQTT message publishing. Click Add to set more publishing topics. Click Delete to delete selected topic. For example, login to AWS, click Act and click Rules to view the topic. It's iot/topic, thus input iot/topic

Rule query statement The source of the messages you want to process with this rule. SELECT \* FROM 'iot/topic'

- (11) Automatic Data Upload Cycle: Cycle time of uploading data, default is 30s.
- (12) Datapoint Uploading Selection: Select datapoint to upload in the right box. Default is blank box with all datapoints to be uploaded
- (13) Click OK to confirm AWS configuration
- (14) Click Save Data. Gateway will restart and AWS is enabled successfully. Open configuration software and login the device. AWS connection status can be viewed from basic information.
   Red light indicates AWS is connected. Slave device connection status can be viewed from the right box

#### 5.2.2.10 View Data in AWS Cloud

Login to AWS, click Act, click Test and select subscription topic "iot/topic" to view messages published by BL102 gateway





aws Services ▼		stures, marketplace products, and docs [Alt+S]	∑ ¢ Oregon ▼
AWS IoT $\times$	Subscriptions	iot/topic	Export Clear Pause
Monitor Activity	Subscribe to a topic Publish to a topic	Publish Specify a topic and a message to publish with a QoS of 0. iot/topic	Publish to topic
Onboard	iot/topic X	1 (	
Manage		2 "message": "Hello from ANS IoT console" 3 )	
<ul> <li>Fleet Hub</li> <li>Greengrass</li> </ul>			
<ul> <li>Secure</li> </ul>			
Defend			
▶ Act		iot/topic June 29, 2021, 10:53:30 (UTC+0800)	Export Hide
Test     Device Advisor     MQTT test client  Software Settings Learn		( "ime": "02:53:30 06/29/2021 UTC 0.0.0", "ime": "0.0000", "Y0": 1, "Y0": 0, "Y2": 0, "Y2": 0, "Y3": 0, "Y6": 0, "Y6": 0, "Y6": 1,	
aws Services <b>v</b>		tures, marketplace products, and docs [Alt+S]	∑ 💠 Vregon ▼
aws Services ▼ AWS IoT ×	Q Search for services, feat	tures, marketplace products, and docs [Alt+S]	∑
Ú			
AWS IoT × Monitor	Subscriptions	iot/topic Publish	
AWS IoT × Monitor Activity	Subscriptions Subscribe to a topic Publish to a topic	юсткоріс Publish Specify a topic and a message to publish with a QoS of 0.	Export Clear Pause
AWS IoT     ×       Monitor     Activity       > Onboard        > Manage     Fleet Hub       > Greengrass     > Secure	Subscriptions Subscribe to a topic Publish to a topic	Publish Specify a topic and a message to publish with a QoS of 0.	Export Clear Pause

## 5.2.2.11 King Pigeon Cloud via Modbus Configuration

- (1) Double click KingPigeon Modbus to enter configuration window
- (2) Click Enable to enable(green) King Pigeon cloud via Modbus. Default is disabled (Gray)
- (3) Server IP/Domain Name: modbus.dtuip.com. (Automatic filling in default)
- (4) Server Port: 6651 (Automatic filling in default)
- (5) Modbus Station: Set Gateway BL102 Modbus communication address
- (6) Login Message: Input device serial number issued by King Pigeon.
- (7) Login ACK Message: Not necessary for King Pigeon cloud connection
- (8) Heartbeat Message: Q (Automatic filling in default)
- (9) Heartbeat ACK Message: A(Automatic filling in default)
- (10) Heartbeat Interval: Set cycle time of sending Heartbeat message. Default is 60s
- (11) Click OK to confirm the configuration.
- (12) Click Save Data. Gateway will restart and King Pigeon Cloud via Modbus is enabled successfully. Open configuration software and login device. King Pigeon cloud via Modbus connection status can be viewed from basic information. Red indicates device is connected King Pigeon cloud via Modbus. Slave devices connection status can be viewed from the right box.

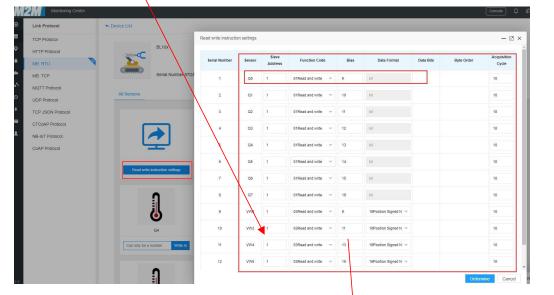
## 5.2.2.12 View Data in King Pigeon Cloud via Modbus

Configure datapoint in cloud like below picture. First create datapoint, then enter connection setting and put datapoint Modbus ID, function code, address, data format, byte sequence and collecting cycle. Modbus address in King Pigeon cloud and configuration software is deviated by 1. For example, datapoint VW0 of PLC S7-200SMART in configuration software is 8, then put 9 in cloud.



#### Sensor names in cloud can be different from those in configuration software

+ Device List									
Device	default group	-							
Device	BL10x		<b></b>	<b></b>					
Link	MB RTU		0						
Dropping	Custom	60	0						
Sensor	Append	Batch Addition							
	20	Switch type (operable	• 0 (decimal places)	×.	Unit	0	1	Delete	]
	Q1	Switch type (operable	• 0 (decimal places)	-	Unit	0	1	Delete	]
	Q2	Switch type (operable	<ul> <li>0 (decimal places)</li> </ul>	1	Unit	0	1	Delete	]
	Q3	Switch type (operable ~	O (decimal places)	~	Unit	0	1	Delete	)
	Q4	Switch type (operable	0 (decimal places)	100	Unit	0	1	Delete	]
	Q5	Switch type (operable	O (decimal places)	-	Unit	0	1	Delete	]
	Q6	Switch type (operable	<ul> <li>0 (decimal places)</li> </ul>		Unit	0	1	Delete	]
	Q7	Switch type (operable	• 0 (decimal places)	~	Unit	0	1	Delete	)
	VVV0	Numerical Type	0 (decimal places)		$\uparrow$	0	1	Delete	)
	VW2	Numerical Type	0 (decimal places)	~	$\uparrow$	0	1	Delete	]
	VW4	Numerical Type	0 (decimal places)	~	$\uparrow$	0	a	Delete	1



Name Q0 Q1 Q2 Q3 Q4 Q5 Q6 Q7 VW0	Value	Type Q Q Q Q Q	Address 0.0 0.1 0.2 0.3	Data type bool bool bool		8	Modbus PLC Address 000009 000010	Q0 Q1	ble And W ble And W	none
Q2 Q3 Q4 Q5 Q6 Q7		Q Q	0.2				000010	01	ble And W	
Q3 Q4 Q5 Q6 Q7		Q		bool					DIE AITU W	non
Q4 Q5 Q6 Q7			0.3		-	10	000011	Q2	ble And W	non
Q5 Q6 Q7		Q		bool		11	000012	Q3	ble And W	non
Q6 Q7			0.4	bool		12	000013	Q4	ble And W	non
Q7		Q	0.5	bool		13 14	000014	Q5 Q6	ble And W ble And W	non
		Q	0.0	bool		14	000015	Q0 Q7	ble And W	non
		VW	0	int16		8	400009	VW0	ble And W	1
VW2		VW	2	int16		10	400011	VW2	ble And W	1
VW4		VW	4	int16		12	400013	VW4	ble And W	1
VW6		VW	6	int16		14	400015	VW6	ble And W	1
				Right click to a	dd var	iable point, double o	lick to display variable po	int attribute		
	VW8 VW8			W8 W 8	VW8 VW 8 int16	VW8 VW 8 int16	VW8 VW 8 int16 16	VW6 VW 8 int16 16 400017		VW8         VW         8         int16         16         400017         VW8         ble And W

Data collected is like below picture



Device name (ID 🛛 🔍	BL10x-三费 Serial Numb	xer:		E @ B
All Equipment Alarm 🔟 Unline 🔟	Y0 ID:1602303	Gonnected Updated:2021/06/29 11:56:50		AlmQ RT Curve© Hist Qu
新設館 0/4 <u> い</u> 070223	¥1 ID:1602304	🖵 Connected Updated:2021/06/29:11:56:50	OFF	AlmQ. RT Curve@ Hist Que
<u><u>5</u><sup>6</sup> 8265</u>	¥2 ID. 1602305	Gennected Updated 2021/06/29 11:56:50	OFF	AlmQ RT Curve® Hist Que
▲ RTU5022 ♦ 8282	Y3 ID:1602306	Connected     Updated:2021/06/29.11:56:50	OFF	AlmQ. RT Curve⊙ Hist Que
✓ BL 1/14	¥4 ID 1602307	무 Connected Updated 2021/06/29 11:56:50	OFF	AlmQ RT Curve® Hist Que
SL10x.Ξ\$ D225-Ξ\$2MOTT	¥5 ID:1602308	Connected     Updated:2021/06/29 11:56:50	OFF	Alm.Q RT Curve⊖ Hist Que
5 BL 10x 57-2005MART	¥6 ID:1602309	😨 Connected Updated:2021/06/29 11:56:50	OFF	AlmQ RT Curve⊙ Hist Que
SE 8L102-S7-200MQTT SE 8L102-S7-200MQTT-1	¥7 ID:1602310	Gonnected Updated:2021/06/29 11:56:50		Alm⊖ RT Curve⊙ Hist Que
SIL 102-57-200MQTT-2	D0 ID:1602311	Connected     Updated:2021/06/29 11:56:49	24.0000 🛧 🛩	AlmQ RT Curve⊝ Hist Que
<u>5</u> <sup>€</sup> S275 <u>5</u> <sup>€</sup> S272 (modbus TCP)	D1	Connected Updated 2021/06/29 11:56-49	0.0000 🛧 🛩	AlmQ RT Curve® Hist Que
E BL(Modsus RTU)	A second day of the			
E <sup>C</sup> BLMGTT				

Device name /ID Q	BL10x-三姜 Serial Numb	er.			
All Equipment Alarm 0 Unline 18	D2 ID: 1602313	Connected     Updated 2021/06/29 11:59:03	0.0000 🛧 🛩	AlmQ	RT Curve Hist Qu
✓ 数以相 0/2 - 立 DTU223	D3 ID:1602314	Gonnected Updated:2021/06/29 11:59:03	0.0000 🛧 🛩	AlmQ	RT Curve Hist Qu
<u><u></u><u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u></u></u>	D4 ID:1602315		0.0000 🛧 🛩	AlmQ	RT Curve : Hist Que
∑ RTU5022	D5 ID:1602316	Connected Updated 2021/06/29 11:59:03	0.0000 🛧 🛩	AlmQ	RT Curve : Hist Que
✓ BL 1/14	D6 ID:1602317	Gennected Updated.2021/05/29 11:59:03	0.0000 🛧 🛩	AlmQ	RT Curve : Hist Que
Sc BL10x-三差 Sc D225-三党MQTT	D7 ID:1602318	Gennected Updated:2021/05/29 11:59:03	85.0000 🛧 🛩	AlmQ	RT Curve⊙ Hist Que
EL 10x S7-200SMART	Q0 ID:1602319	Connected     Updated: 2021/06/29 11:59:05		AlmQ	RT Curve : Hist Que
∑ BL102-87-200MQTT ∑ BL102-87-200MQTT-1	Q1 ID: 1602320	Gonnected Updated 2021/06/29 11:59:05	OFF	AlmQ	RT Curve : Hist Que
<u>∑</u> <sup>€</sup> BL102-S7-200MQTT-2	Q2 ID: 1602321	Connected     Updated:2021/06/29 11:59:05	OFF	AlmQ	RT Curve⊖ Hist Que
∑ \$275 —	Q3 ID: 1602322	Connected     Updated 2021/06/29 11:59:05	OFF	AlmQ	RT Curve : Hist Que
E BL(Modbus RTU)	L				

Device name /iD Q	BL10x-三英 Serial Numbe	er		502
All Equipment Alarm D Unine 16	Q4 ID:1602323	☐ Connected Updated:2021/06/29 12:00:05	OFF	AlmQ RT Curve© Hist Que
✓ ¥KUM 0/4 – ≦ DTU223	Q5 ID.1602324	딡 Connected Updated 2021/06/29 12:00:05	OFF	Alm.Q RT Curve⊙ Hist Qu
∑ <sup>c</sup> 5265	06 ID:1602325	Connected     Updated 2021/06/29 12:00:05	OFF	AlmQ RT Curve⊝ Hist Que
∑ RTU5022 \$282	07 ID:1602326	Gennected Updated:2021/06/29 12:00:05	OFF	Alm© RT Curve⊖ Hist Qu
✓ BL 1/14	VW0 ID:1602327	Connected Updated.2021/06/29 12:00:04	8.0000 🛧 🛩	AlmΩ RT Curve@ Hist Qu
SEL10x.Ξ# <u>5</u> D225-Ξ#MQTT	VW2 ID:1602328	Connected Updated 2021/06/29 12:00:04	0.0000 🛧 🛩	AlmQ RT Curve@ Hist Qu
∑ <sup>€</sup> BL10x-57-200SMART	VW4 ID:1602329	Connected     Updated:2021/06/29 12:00:04	0.0000 🛧 🛩	AlmQ RT Curve⊙ Hist Qu
≦ ВL102-57-200МQTT-1	VW6 ID:1602330	☐ Connected. Updated:2021/06/29 12:00:04	0.0000 🛧 🛩	AlmD RT Curve® Hist Qu
£ 8L102-97-200MQTT-2	VW8 ID:1602331	Connected Updated 2021/06/29 12:00:04	0.0000 🛧 🛩	AlmQ RT Curve@ Hist Qu
∑ <sup>C</sup> 5275 ∑ <sup>C</sup> 5272 (modbus TCP)				
E <sup>e</sup> BL(Modbus RTU)				

## 5.2.2.13 King Pigeon Cloud via MQTT Configuration

COM1		e ▲Read Data ▲Save Data ❷Monitoring 會Log 魯西吉 ④Ab
	yariable Point Type Port Device Variable Point Nam	Red represents the online status, gray represents the offine status         Kingpigeon Modbus Online Status         MQTT Client One Online Status         MQTT Client Two Online Status         Ali IOT Cloud Online Status         HUAWE IOT Cloud Online Status         INUS IOT Cloud Online Status         INUS IOT Cloud Online Status         Inuscription         Inuscription         MUST Refresh
HUAWEI IOT Cloud     Wes IOT Cloud     Wingpigeon MQT     Kingpigeon MQT     Kingpigeon Double click to	set properties	

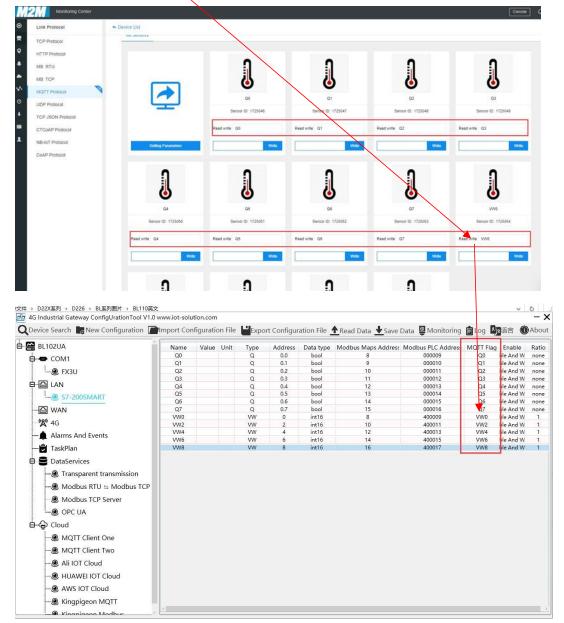
- (1) Double click King Pigeon MQTT to enter configuration box
- (2) Click Enable to enable(green) King Pigeon cloud connection via MQTT. Default is disabled(gray)
- (3) Server IP/Domain Name: mqtt.dtuip.com(Automatic filling in default)
- (4) Server Port: 1883 (Automatic filling in default)
- (5) Client ID: Input device serial number issued by King Pigeon
- (6) User Name: MQTT (Automatic filling in default)
- (7) Password: MQTTPW(Automatic filling in default)
- (8) Subscribe Topic: Input device serial number/+ issued by King Pigeon
- (9) Publish Topic: Input device serial number issued by King Pigeon.
- (10) Automatic Data Upload Cycle: Cycle time of uploading data. In default it's 30s
- (11)MQTT Data Retransmission: Click it to enable(green) offline data retransmission once network resumes.
- (12) Datapoint Uploading Selection: Select the datapoint to upload in the right box. In default it's blank with all datapoints to be uploaded
- (13) Click OK to confirm King Pigeon Cloud via MQTT configuration
- (14) Click Save Data. Gateway will restart and King Pigeon Cloud via MQTT is configured successfully. Open configuration software and login the device. King Pigeon Cloud connection status via MQTT can be viewed from basic information. Red indicates King Pigeon cloud via MQTT is connected. Slave device connection status can be viewed from the right box.

## 5.2.2.14 View Data in King Pigeon Cloud via MQTT

Create datapoint in cloud first. Set datapoint mark is the same as MQTT flag in configuration software. Below is example of some datapoint configuration. For example, MQTT flag of datapoint VW0 in configuration software is VW0, then set read-write mark VW0 in King Pigeon cloud



Device	default group	1	~ Z							
Device	BL10x									
Link	MQTT	-	0							
Dropping	Custom -	60	0							
Sensor	Append	Batch Addition								
	Q0	Switch type (operable 👻	0 (decimal places)	Unit	0	Delete				
	Q1	Switch type (operable 👻	0 (decimal places)	Unit	0	Delete 1				
	Q2	Switch type (operable 👻	0 (decimal places)	Unit	0	Delete 1				
	Q3	Switch type (operable 👻	0 (decimal places)	Unit	0	Delete 1				
	Q4	Switch type (operable 👻	0 (decimal places)	Unit	0	Delete 1				
	Q5	Switch type (operable 📼	0 (decimal places)	Unit	0	Delete 1				
	Q6	Switch type (operable 👻	0 (decimal places)	Unit	0	Delete 1				
	Q7	Switch type (operable -	0 (decimal places)	Unit	0	Delete 1				
	VW0	Numerical Type 🛛 👻	0 (decimal places)	1	0	J Delete				
	0000									
	VW2	Numerical Type -	0 (decimal places)	1	0	Delete T				



Data collected is as below picture:



Monitoring Center					
Device name /ID	Q	BL102-S7-200MQTT Serial	lumber		Contole 💭 🕅 English 📳
All Equipment Alarm		D85587 D8X0 0	Unconnected		AlmQ RT CurveG Hist Que
	0/4	1 YO	Updated 2021/06/29 09 03:02		Alm. RT Curve Hist Que
∑ 0TU223 ∑ \$265	-	0 ID:1602384	Updated 2021/06/29 12:26:26	OFF	Nm⊕ RT Curve⊙ Hist Que
£ <sup>≤</sup> RTU5022		¥1 ID.1602385 Y2	Updated 2021/06/29 12:26:26	OFF	Nma RT Curve S Hist Que
8282 BL	2/14	<ul> <li>ID:1602386</li> <li>Y3</li> </ul>	Updated 2021/06/29 12:26:26		
C BL10x.三英	-	UD:1602387	Updated 2021/06/29 12:26:26	OFF	NmQ RT Curve⊗ Hist Que
€ 0225-三歳матт 5 лино, от техница	-	UD:1602388	Updated 2021/06/29 12:26:26	OFF	Nmậ RT Curve⊙ Hist Quer
SL104-57-2005MART		Y5 ID:1602369 Q Y6	Updated 2021/06/29 12:26:26	OFF	Nm.Q RT Curve⊙ Hist Quer
BL 102-97-200MQTT-1		UD:1602390	Updated 2021/06/29 12:26:26	OFF	AlmQ RT Curve⊙ Hist Que
81.102-57-200MQTT-2 5275		U:1602391			AlmQ RT Curve⊝ Hist Quer
SZ72 (modbus TCP)		DO ID:1602392	Connected     Updated 2021/06/29 12:26:26	24.0000 🛧 🛩	Alm⊖ RT Curve⊝ Hist Que
SE BLMOTTI SE BLMOTT2 Monitoring Center Device name /ID	Q	BL102-S7-200MQTT Seria	Nantori		Concealer D 🖉 English
All Equipment Alarm 🚺	Unline 17	<b>1</b> D1	⊊ Connected	0.0000 🛧 🛩	AlmQ RT Curve⊙ Hist
/ 默认组	0/4	D1 1602393	Updated 2021/06/29 12:27:27	0.0000 🛧 🛩	Alm⊖ RT Curve⊙ Hist
5 DTU223		D3	Updated:2021/06/29 12:27:27	0.0000 🛧 🛩	AlmQ RT Curve⊝ Hist
RTU5022		D D4	Updated: 2021/06/29 12:27:27	And the constraints of the second sec	
8282 BL	2/14	D 1602396	Updated 2021/06/29 12 27 27	0.0000 🛧 🛩	AlmQ RT Curve© Hist
SL10x.Ξ	2/14	ID:1602397	Updated 2021/06/29 12:27:27	0.0000 🛧 🛩	Almû RT Curve© Hist
D225-EMMQTT		UD:1602398	Updated:2021/06/29 12:27:27	0.0000 🛧 🛩	AlmQ RT Curve⊙ Hist
E BL 10x S7-2005MART		D7 ID:1602399	Connected     Updated: 2021/06/29 12:27:27	85.0000 🛧 🛩	AlmQ RT Curve⊖ Hist
BL102-S7-200MQTT-1		Q0 ID.1602400	⊊ Connected Updated 2021/06/29 12:27:27		AlmQ RT Curve@ Hist
BC102-57-200WD11-1		<b>1</b> Q1	☐ Connected Updated:2021/06/29 12:27:27	OFF	
5 BL 102-57-200MQTT-2		B:1602401			AlmQ RT Curve⊝ Hist
<ul> <li>BL102-S7-200MQTT-2</li> <li>S275</li> <li>S272 (modbus TCP)</li> </ul>		Q 1D:1602401	Connected Updated 2021/06/29 12 27 27	OFF	
∑         BL 102-S7-280MQTT-2           ∑         S275           ∑         S272 (modbus TCP)           ∑         BL(Modbus RTU)           ∑         BL(MQTT           ∑         BLMQTT	Q	1. 1923	Updated 202106529 12 27 27	() orr	AlmC RTCurveS Hist
Ista 35 37 2006077 2           Ista 35 37 20077 2	Unline 17	02 10.1602402	Updated 202106529 12 27 27	() orr	AlmC RT CurveC Hist Commit Q C English
Istastart 20040071-2		Q2         ID. 1602402           BL102:57-200MQTT         Series           Q3         Q3	Updated 2021/06/29 12.27.27		AlmO RT CurveS Hist
Image: State	Unline 17	Q2         ID. 1602402           BL 102-57-200MQTT         Senial           Q3         ID. 1602403           Q4         ID. 1602404	Updated 2021/05/29 12.27.27 Number: ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	() orr	AlmQ RT Curve© Hist Concole Q @ Engent @ @ @ 1 AlmQ RT Curve© Hist Q AlmQ RT Curve© Hist Q
IL 103 07 20060712           S275	Unline 17	Q2         ID. 1602402           ID. 1602402         ID. 1602402           ID. 1602403         ID. 1602403           ID. 1602404         ID. 1602404           ID. 1602405         ID. 1602405	Updated 2021/06/29 12.27.27 Number: Q Connected Updated 2021/06/29 12.28.69 Q Connected Updated 2021/06/29 12.28.09 Updated 2021/06/29 12.28.09 Q Connected Updated 2021/06/29 12.28.09	() orf () orf	AlmO RT CurveS Hist Concette Q 20 English ( Careette Q AlmO RT CurveS Hist Q AlmO RT CurveS Hist Q
✓         EL 103 07 2006077 2           ✓         S275           ✓         S272 (moltans TCP)           ✓         S20 moltans TCP)	Unline 17	Q2         ID. 1602402           BL102-57-200MQTT         Serial           Q         G3           ID. 1602403         G           Q         G4           ID. 1602403         G           Q         G5           ID. 1602405         ID. 1602405           Q         G5           ID. 1602405         ID. 1602405	Updated 2021/06/29 12.27.27 Number: ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	Corp Corp Corp Corp	AlmO RT CurveS Hist Correct AlmO RT CurveS Hist AlmO RT CurveS Hist Q AlmO RT CurveS Hist Q AlmO RT CurveS Hist Q AlmO RT CurveS Hist Q
Isabari 20040071-2           Isabari 2004071-2           Isabari 20040	Unline 12	Q2         10.1602402           BL102-57-200MQTT         Sector           Q1         100-1602402           Q1         100-1602403           Q1         100-1602403           Q1         100-1602403           Q1         100-1602403           Q1         100-1602403           Q1         100-1602405           Q2         40-160-1602405           Q3         100-1602405           Q4         100-1602405           Q4         100-1602405           Q4         100-1602405           Q4         100-1602405           Q4         100-1602405           Q5         100-1602405           Q5         100-1602405	Updated 2021/06/29 12.27.27 Number: □ □ □ □ □ □ □ □ □ □ □ □ □	Corr Corr Corr Corr Corr	Almic RT Curve Hist County Q County Q County Q C
Image: State	Unline 12	Q2         ID. 1602402           ID. 1602402         ID. 1602402           ID. 1602403         ID. 1602403           ID. 1602403         ID. 1602405           ID. 1602405         ID. 1602405	Updated 2021/06/29 12.27.27           Number:           Q1 Connected           Updated 2021/06/29 12.28.59           Q2 Connected           Updated 2021/06/29 12.28.59	© orr © orr © orr © orr © orr B.0000 ↑ ♥	Almic RT Curve Hist
Isabari 20040071-2           Isabari 2004071-2	Unline 12	Q2         C2           BL102-57-200MQTT         Sectul           Q         C3           Q         C3           Q         C4           Q         C4           Q         C5           Q         C6           Q         VW0           Q         WW4	Updated 2021/06/29 12.27.27 Number:	© orr © orr © orr © orr © orr 8.0000 ↑ ← 0.0000 ↑ ←	Almú RT Curve Hist Comot Q RT Curve Hist Comot Q RT Curve Hist Almú RT Curve RT Curve RT Hist RT Curve RT Curve RT Curve RT RT Curve RT RT Curve RT RT Curve RT RT RT RT RT RT RT Curve RT
✓         BLADD AFT 200000TT-2	Unline 12	Q2         C2           ID. 1602402         ID. 1602402           ID. 1602403         ID. 1602403           ID. 1602403         ID. 1602404           ID. 1602404         ID. 1602404           ID. 1602404         ID. 1602404           ID. 1602405         ID. 1602405           ID. 1602406         ID. 1602406           ID. 1602407         ID. 1602407           ID. 1602407         ID. 1602407	Number:         Image: Connected         Image: Connected	© orr © orr © orr © orr 8.0000 ↑ ♥ 0.0000 ↑ ♥	AlmO RT CurveS Hist CurveS Hist CurveS Hist AlmO RT CurveS Hist AlmO
	Unline 12	Q2         C2           BL102-57-200MQTT         Sectul           Q         C3           Q         C3           Q         C4           Q         C4           Q         C5           Q         C6           Q         VW0           Q         WW4	Updated 2021/06/29 12.27/27           Number           Q: Connected           Updated 2021/06/29 12.28 //9	© orr © orr © orr © orr © orr 8.0000 ↑ ← 0.0000 ↑ ←	Almú RT CurveS Hist Correct Q 2 Englo 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2

## 5.2.2.15 King Pigeon Cloud MQTT Data Format

MQTT Client One , MQTT Client Two and King Pigeon Cloud MQTT data formats are the same. See below:

(1) Valid Load Data Format in device Publishing messages

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```
Publish Topic: Serial Number (Configured publish topic)
  {
    "sensorDatas": [
        {
              //Boolean value
             "flag": "REG001", //Read-write identification mark
             "switcher": 0 //Data Type and Value
        },
      {
             //Numeric Type
             "flag": "REG005", //Read-Write identification mark
             "value": 3 //Data Type and Value
        }
    ],
   "state":"alarm", //Alarm mark(Set Alarm Event in configuration software. Once
alarm is trigger, this mark will appear. It's not included in scheduled automatically
uploaded data)
   "state":"recovery", //Alarm recovery mark (Only appear when there's alarm
recovery. It's not included in scheduled automatically uploaded data)
    "time": "1622700769", //Time mark, it's time stamp of data uploading
    "addTime": "2021-06-03 06:12:49" //Time mark, it's time of device data uploading
    "retransmit":"enable" //Retransmission mark, MQTT historical data (Only appear
when there's historical data retransmission. It's not included in scheduled
automatically uploaded data)
  }
```

Note:

//Read-Wrtie Mark: character is "flag", followed by " Datapoint MQTT flag", it's the MQTT mark set in configuration software when adding datapoint.

Note:

//Read-Wrie Mark: character is "flag", followed by " Datapoint MQTT flag", it's the MQTT mark set in configuration software when adding datapoint.



BLIUZUA	Name	Value	Unit	Type	Address	Data type	Modbus Maps Address	Modbus PLC Address	MQTT Flag	Enable	Rat
COM1	YO			Ŷ	0	bool	0	000001	YO	ble And W	nor
EX3U	¥1			γ	1	bool	1	000002	L Y1	ole And W	no
	¥2			γ	2	bool	2	000003	Y2	ple And W	no
LAN	¥3			γ	3	bool	3	000004	¥3	ple And W	no
	Y Do			V	/ariable	Attribute	s	000005	Y4	ple And W	nc
2010	Y						-	000006	Y5 Y6	ble And W ble And W	nc
- WAN	Y				<i>(</i> 0)			000007	¥0 ¥7	ble And W	no
- ( <b>%</b> ) 4G	, D	Var	riable Na	ame	/0	v	'ariable Unit	400001	DO	ble And W	ne
	D	۵.	ddress T	ivne	Y	<ul> <li>Start</li> </ul>	ing Address 0	400002	D1	ble And W	
Alarms And Events	D	~	aaress r	,pc (				400003	D2	ole And W	
🕏 TaskPlan	D	Data	a type In	DB	. 4	Address	Offset In DB	400004	D3	ple And W	
	D			_	-			400005	D4	ole And W	
B DataServices	D		Data t	ype	bool	~		400006	D5	ole And W	
	D		-Write T		able And Wr			400007 400008	D6	ple And W	
	U	Kead	-write i	уре Кеас	table And Wr	tar v		400008	D7	ole And W	
● Modbus RTU 🛱 Modbus TCP	Mo	dbus Map	s Addres	sses	0 (0-	2000)	MQTT Flag Y0				
Modbus TCP Server							(Customizable)	-			
- OPC UA							(Customizable)				
OPC UA							OK Cancel	)			
Cloud											
MQTT Client Two											
Ali IOT Cloud											
HUAWEI IOT Cloud											
AWS IOT Cloud											
- , Kingpigeon MQTT											

#### //Data Type and Value:

- Boolean data: character is "switcher", followed by "0" or "1"(0 represents open, 1 represents close)
- 2) Numeric Data: character is "value", followed by actual value

//Alarm, Recover mark, character is "state", followed by "alarm" or "recovery"(alarm represents alarm data, recovery represents alarm recovery data)

//Time mark: character is "time", followed by actually data uploading timestamp

//Time mark, character is "addtime", followed by "gateway time"

//Retransmission mark: character is "retransmit", followed by "enable"

Offline collected data will be temporarily saved in gateway device. Once network resumes, the data will be re-transmitted. Use "retransmit" mark for historical data (MQTT Data Retransmission must be enabled in configuration software)

#### (2) Valid Load Data Format in device Subscribing messages

Subscribe Topic: Serial Number/+ (Subscribe topic set in configuration software) (King Pigeon cloud message publishing topic is "serial number/sensor ID", thus wildcard "/+" must be added for device Subscribing Topic so that cloud can publishing data for controlling)

```
{
    "sensorDatas":
    [
        {
            "sensorsId": 211267, // cloud sensor ID
            "switcher":1, //Data Type and Value
            "flag":"REG001" //Read-Write Mark
        }
    ],
```



"down":"down" //Cloud downlink message mark

#### Note:

}

//cloud sensor ID: character is "sensorsID", followed by ID (automatically generated by cloud. Not necessary if it's self-built cloud)

//Data Type and Value:

1) Boolean Data: character is "switcher", followed by "0" or "1"

(0 represents open, 1 represents close)

2) Numeric Data: character is "value", followed by "actual value"

//Read-Write Mark: character is "flag", followed by "datapoint MQTT flag"

//Cloud Downlink Message Mark: character is "down", followed by "down", representing cloud downlink data.

## 6 Firmware Upgrading

Please contact King Pigeon if it's necessary to upgrade firmware for any new requirements. This gateway supports upgrading firmware via configuration software. Click About in configuration software, click Firmware Upgrade, select update folder and click OK to confirm. Once upgrading is completed, a prompt box will pop up. Click it to confirm. Contact King Pigeon technical support to get update folder.

Device Search 🕞 New Configuration 📄	Import Configuration File 出Export Configuration File 全Read Data 生Save Data 曼Monitoring 面Log 国語語	
E ← COM1 - ● FX3U E ← CAN - ● S7-200SMART		×
WAN     WAN	Gateway Name Kingpigeon (MAX15) Kingpige Gateway Time 18:29:15 09/11/2021 Kingpige Device Mo Version Number: V1.0 Release Time: 2021/6/1 Kingpige Gateway Time Release Time: 2021/6/1 Firmware Update SiM Registration Status SiM Registration Status Refresh	atus



#### 7 Warranty Terms

1) Warranty period is 1 year from the date of purchase. If any quality issues within warranty period, it will be repaired for free.

2) Device fault caused by wrong operation is beyond warranty.

### 8 Technical Support

King Pigeon Communication Co., Ltd. Telephone: 0086-755-29451836 Website: www.iot-solution.com