S7-TCP to MODBUS-TCP and MQTT Gateway MG-IOT03

User Manual



ODOT Automation System Co., Ltd.

2019-06

Copyright ©2019 ODOT Automation all rights reserved

Version information

DateVersion
numberRevise contentAuthor2019/07/02V1.0Release versionCCL

The following changes have been made to the document:

Ownership rights information

Without the permission of the copyright owner, all or part of this document shall not be republished as a paper or electronic document.

Disclaimer

This document is only intended to assist the reader in using the products, and the company shall not be responsible for any loss or error caused by the use of the information in this document. The product and text described in this document are under constant development and refinement. ODOT Automation System Co., Ltd. has the right to modify this document without notifying users.

Software download

Please log on the official website: www.odotautomation.com and click on the corresponding product page to download.

Catalogue

1.]	Product overview4	
	1.1. Introduction4	
	1.2. Function Introduction4	
	1.3. Technical parameters5	
2.	Hardware description	
	2.1. Product appearance5	
	2.2. Indicator light description	
	2.3. Terminal definition6	
	2.4. A one-key reset6	
	2.5. Installation dimensions7	
3.	Siemens S7 Ethernet to Modbus-TCP and MQTT protocols	
	3.1 Create a configuration acquisition channel8	
	3.2. Creating a publish channel 12	
	3.2.1 Collection points are automatically published to Modbus TCP server1	2
	3.2.2 Manual release of collection points1	4
	3.2.2.1 Manual Modbus TCP channel configuration1	5
	3.2.2.2 MQTT channel configuration	6
	3.3 configuration file 21	
	3.4 Modbus Poll software testing 22	

1. Product overview

1.1. Introduction

MG-IOT03 is an industrial-grade Ethernet gateway with protocol conversion functions; it carries with 5*100Mbps ports, all of which support 10/100Mbps auto-negotiation and Auto-MDI /MDIX. The gateway could convert Siemens S7 Ethernet protocol to Modbus TCP and MQTT through ODOT software configuration.

1.2. Function Introduction

◆ It supports Siemens S7 Ethernet to

MODBUS-TCP and MQTT protocols

◆ It supports Auto negotiation 10/100Mbps, half/full duplex, Auto MDI/MDIX

Supports 200 collection points

◆ It supports equipment search, lighting test

◆ It supports data sort swap

◆ It supports data type conversion

◆ It supports data calculation

• It supports IAP download, update and upgrade the firmware program in the product through the network port

• It supports wide temperature work: working environment temperature -40 $\sim 85 \text{ }^{\circ}\text{C}$

◆ It supports one-key reset

◆ It supports 35mm standard guide rail installation

• It supports $9 \sim 36V$ DC wide voltage input and anti-back connection protection

◆ It supports broadcast storm protection

1.3. Technical parameters

Environmental Parameters	
Operating temperature	-40~85°C
Storage temperature	-55~125°C
Working humidity	5%~95% (no condensation))
Power Supply	
Power ports no.	1 port
Input voltage	9~36V DC
Power consumption	Max.200mA@24V
Ethernet parameters	
Ethernet port number	5 RJ45, 10M, 100M adaptive rate,
	with gateway function
Network protocols	ETHERNET、ARP、IP、TCP、
	ICMP、MQTT
PLC number collected	Max. 4pcs
Number of data points supported	200

2. Hardware description

2.1. Product appearance



Identification	State	Definition		
	Normally on a red light	Power supply normal		
PWK	The red light out	Abnormal power supply		
DIDI	Normally on	System operating normally		
RUN	Flashing	Normal data exchange		
	Put out	System failure		

2.2. Indicator light description

RUN Indicator status description:

Green LED always on: release and capture connected successfully.

Green LED flashes at 1HZ, PLC connects successfully, MQTT is not connected.

Green LED flashes at 2.5Hz, MQTT is connected successfully, and PLC is not fully connected.

Green LED flashing at 0.5Hz, unknown abnormal.

2.3. Terminal definition

Interface number	Connection identifier	Wiring instructions
8	PE	Protected land (land)
9	V-	Negative power input
10	V+	Positive power input

2.4. A one-key reset

In order to facilitate the use of customers, the gateway has set the function of one-key reset, which is located in the round hole at the bottom of the gateway. The system reset can be achieved by pressing the button for about 0.5 seconds. After reset, the default gateway IP is 192.168.1.254



2.5. Installation dimensions



3. Siemens S7 Ethernet to Modbus-TCP and MQTT protocols

3.1 Create a configuration acquisition channel

Please open "Odot Configuration Software" and select Tool → Scan Device

IOT gateway configuration software	– 🗆 X
File View Tools	
Progect Scan device	About -
Software config	odot IOT gateway configuration software
	Company profile: Sichuan Odot Automation System Co.,Ltd. was founded in 2003, is specialized in industrial communications product development, industrial automation and control system design, high-tech enterprise integration and technical services.Product family includes: Protocol Converter, Intelligent Distributed I/O, Industrial Switches, Industrial Wireless, Serial servers, Embedded Modules and related accessories for industrial communication
	Version: V 1.0.19.1128
Property 👻 म्	Website: http://www.odot.com.cn
Search ×	Tel: (86)400-1024-485
	Message Image: Content for the source of t

Click Scan device in the device Search dialog box, and click OK when finished. Lighting tests could be performed on modules; this could distinguish multiple MG-IOT03 modules in the same network.

🖪 Searching									—	
Network card	d: 以太网 2:Intel(R) 8	2579LM Gigabit Netv	work Connection #2 192.168	.1.101 🝷						
Device Type	Hardware version	Software version	MAC	IP	Subnet mask	Gatwayt ip	DNS server ip	DNS server	ip(spare)	Enable DH
MG-IOT03-S7	2.0.17.4	1.3.19.6	40:01:E5:06:02:06	192.168.0.254	255.255.255.0	192.168.0.1	114.114.114.114	0.0.0.	. 0	
4										
			Gateway Info	rmation						
						[c		OK	6	-1
State: Search h	as been completed					Sea	rening	OK	Canc	ei
			INTO 2020/8/21 14	5. OdotConfiguatio	on. Handshake faile	ed, no response				

Double-click "MG-IOT03-S7" in the project bar, and the "Network Port" window and parameters of the gateway pop up on the right side.

🖪 IOT gateway configur	ation software							\times
File View	Tools							
Progect		About	MG-IOT03-S7	′ ×				÷
▲ MG-IOT03-S7		Ethernet P	ort					
Collection cha	nnel	Paramete	er name	Parame	ter value			
Collection channel		MAC Ac	dress (00:00:00	:00:00:00			-
Publish channe		IP Add	Iress 1	92.168.1	1.254			-
		Net N	lask 2	255.255.2	55.0			-
		Net Gat	teway 1	92.168.	1.1			-
		Configu	Configure Port					-
		DHCP e	nable	Disable	Ŧ			-
		DNS server	IP address 1	14.114.1	14.114			-
Property	-	# IP Address	(Release) 1	92.168. 2	2.254			-
Search 2	>	Net Mask(Release) 2	255 255 2	55 0			-
IP	192.168.0.254	Message						- 4
Remarks		CATEGORY	TIME	SOU	RCE	CONTENT		
Device type	MG-IOT03-S7	Info	2020/8/21	14:5. Main		Build device: lot getway Name: MG-IOT03-S7		11
Communication port	1024	🔵 Info	2020/8/21	14:5 Odot	Configuation.	Start Uploading		
		📕 🛑 Info	2020/8/21	14:5. Odot	tConfiguation.	Handshake failed, no response		
		📕 🛑 Info	2020/8/21	15:1 Main		Build device: lot getway Name: MG-IOT03-S7		
		Info	2020/8/21	15:1 Odot	tConfiguation.	Start Uploading		_
		Info	2020/8/21	15:1 Odot	tConfiguation.	Handshake failed, no response		-

The main parameters have the following meanings:

IP address: Gateway IP, the gateway creates Modbus TCP server IP, and the user accesses this IP address and port 502 to log in Modbus TCP server.

Right-click "Collection channel" in the project bar and select Add S7(Ethernet) protocol. Under the drop-down menu, appear

IOT gateway configuration software						-	×
File View Tools							
rogect	About M	MG-IOT03-S	7 X				
MG-IOT03-S7	Ethernet Po	ort					
Collection channel	Add collection ch	annel 🕨	S7	(Ethernet)			
Publish channel	IP Add	ress	192.1	68.1.254			
	Net M	ask i	255.2	55.255.0			
	Net Gat	eway	192.168.1.1				
	Configur	e Port	1024				
	DHCP er	nable	Disable 💌				
	DNS server I	P address	114.1	14.114.114			
roperty	P Address(Release)	192.1	68.2.254			
Search	Net Mask(Release)	255 2	55 255 0			_
Channel name Collection channel	Message						
Collection command 0	CATEGORY	TIME	145	SOURCE			
Collection command 200	Info	2020/8/21	14:5	Main	Build device: lot getway Name: MG-I0103-S7		
	Info	2020/8/21	14:5	OdotConfiguation.	Start Oploading		
	Info	2020/0/21	15.1	Main	Build device: lot getway Name: MG-IOT03-S7		
	Info	2020/8/21	15:1	OdotConfiguation.	Start Uploading		
	l Info	2020/8/21	15.1	OdotConfiguration	Handshaka failed, no response		

"S7(Ethernet) 1."

Click "S7(Ethernet)_1" and the configuration channel parameters and configuration collection point window will pop up on the right. In the configuration channel parameters window, PLC IP is the IP address of the actual PLC, and the port number is fixed as 102.

🔂 IOT gateway configuration softw	ware					-	×
File View Tools							
Progect	~ û	About M	G-IOT03-S7	S7(Ethernet)_1 \times			Ŧ
▲ MG-IOT03-S7		Collection cl	hannel conf	ig / Collection	point config		
Collection channel		Siemens S7	protocol(Etl	nernet)			^
S7(Ethernet) 1	Paramet	er name	Parameter value			^	
Dublish shares		Channe	l Name	S7(Ethernet)_1			
Publish channel		Prot	ocol	S7(Ethernet) *			
		PLC	C IP	192.168.1.10			
		PLC communication port		102			
		Message inte	rval time(ms)	1000			-
Property	~ û						
₽ A Search	×						
Command amount 0		Message					~ û
Channel description Siemens	S7 protocol(E	CATEGORY	TIME	SOURCE	CONTENT		- 14
Channel type S7(Etherr	net)	Info	2020/8/21 14:5	OdotConfiguation.	Start Uploading		
		🔵 Info	2020/8/21 14:5	OdotConfiguation.	Handshake failed, no response		- 11
		Info	2020/8/21 15:1	Main	Build device: lot getway Name: MG-IOT03-S7		- 11
		🔵 Info	2020/8/21 15:1	OdotConfiguation.	Start Uploading		- 11
		🔵 Info	2020/8/21 15:1	OdotConfiguation.	Handshake failed, no response		- 11
		🔵 Info	2020/8/21 15:2	Collection channel	Collection channel		-

Click "Configure collection point" and add read or write commands in the "Add Collection Point" column.

🙆 IOT gateway configuration software					– 🗆 ×
File View Tools					
Progect 👻 🏾	About M	IG-IOT03-S7	S7(Ethernet) 1 ×		
▲ MG-IOT03-S7	Collection of	hannel confi	g / Collection	i point con	nfig
A Collection channel	Collection poi	int	1		Parameter
S7(Ethernet) 1	Command n	ame Collectio	n point name De	elete Copy	Parameter name Parameter value
Publish channel					
					Automatic publish
	Add collection	n point			Automatic publish: Disable To modbusTCP server
	Command n	ame Operatio	n 🚩		Data area: 4XXXX *
Property 👻 🖡	Read	Add		Â	Star address: 0
Search ×	Write	Add			Address Interval:
Command amount 0					Quick publish: Publish All to modbusTCP server
Channel description Siemens S7 protocol(E	K				
channel type 37(Ethemet)	Message				<u>▲</u> t
	CATEGORY	TIME	SOURCE	CONTENT	
	Info	2020/8/21 14:5	OdotConfiguation.	Handshake fa	ailed no response
	● Info	2020/8/21 15:1	Main	Build device:	: lot getway Name: MG-IOT03-S7
	 Info 	2020/8/21 15:1	OdotConfiguation.	Start Uploadir	ing T

When the command is added, it will be displayed in the collection point column. All collection point information could be configured in the parameter

column. For example, the collection point CPoint 1 reads the command, could set to read the PLC internal data register area, starting address, data offset bit, data type, Enable trigger mode, calculation and other parameters.

🔟 IOT gateway configurat	tion software							– o x
File View To	ools							
Progect	▲ ù	About MG-IO	1 S7(Ethernet)_1	¢.				
▲ MG-IOT03-S7		Collection chan	nel config <mark>/</mark> Collect	ion poi	nt config			
 Collection chan 	nel	Collection point				Parameter		
S7(Ethernet) 1		Command name	Collection point name	Delete	Сору	Parameter name	Parameter value	e
Publish channel		Read	CPoint 1	Delete	Copy&Paste	Collection Point Name	CPoint 1	
		Write	CPoint 2	Delete	Copy&Paste	Read Or Write	Read *	
		Read DB	CPoint 3	Delete	Conv&Paste	Function code	Read -	
				Delete	copyeraste	Register Area	c .	,
		Read	CPoint 4	Delete	Copy&Paste	DB Number	0	
		Write DB	CPoint 5	Delete	Copy&Paste	Star address	23	
		Write DB	CPoint 6	Delete	Copy&Paste	Data Offset Bits	0	
						PLC data type	Bool •	·
Property	~ ₽					Enable trigger mode	Enable •	
Search	×			_	_	Calculation	No •	
Publish command a	0	Add collection point	nt			Base	0	
Channel name	Publish channel	Command name	Operation			Multiple rate	0	
		Read	Add			Store data type sort	Default •	,
		Write	Add			Store data type	Bool •	
		Read DB	Add			Automatic publish		
		Write DB	Add			Automatic publish:	Enable 🔻 To m	nodbusTCP server
						Data area:	4XXXX -	
						Star address:	0	
	_	4						
		Message						1 🔻

The main parameters have the following meanings:

Register: where the data point belongs to the PLC, such as I, Q, M, DB of s7-300PLC

DB number: The number of DB data area in PLC

Starting address: byte, word, double word, etc.

For example: db1.dbx2.5 starting address is "2", data offset bit is "5"

DB1.DBW10 starting address is "10"

Data offset Bits: The Bit of a data area's data address. For example,

DB1.DBX2.5 data offset bit is "5".

PLC data type: The type and length of data read and written from the PLC.

Enable trigger mode:

enable: To send a command to the PLC when there is a data change.

Disable: Write command loop sent to PLC.

Calculation: no operation

(Multiplication/Division: Calculated value = base + multiplier (* or /) collected value)

Base: Same as above

Multiple rate: Same as above

Store data type sort: The default is Little-endian in front; there are other data word, double word, floating point sort type optional.

Store data type: The data type of the data store, such as PLC data type is INT, store data type float, and the data will have type conversion.

3.2. Creating a publish channel

3.2.1 Collection points are automatically published to Modbus TCP server

After all collection points are configured, select the function of enabling automatic publication in the automatic publication column, set the data publication area, starting address and address interval parameters, and click publish to publish all collection points to Modbus TCP server. Modbus TCP can be automatically generated in the release channel drop-down menu in the project bar.

🚺 IOT gateway configuration software								—	□ ×
File View Tools									
Progect 💌 🎗	About	MG-IOT03-S7 S7(Etherr	iet)_1 ×						Ţ
▲ MG-IOT03-S7	Collection	channel config / C	ollectio	n point confi	g				
Collection channel	tion point				Parameter				
S7(Ethernet) 1	mand name	Collection point name	Delete	Сору	Parameter name	Paramete	er value		^
Publish channel	Read	CPoint 1	Delete	Copy&Paste	Collection Point Name	e CPoint 1			
- I donsh channer	Write	CPoint 2	Delete	Copy&Paste	Read Or Write	Read	Ŧ		
	and DR	(Point 2	Delete	ConvelDado	Function code	Read	Ŧ		
	lead DD	CPOINT 5	Delete	CopyorPaste	Register Area	С	•		
	Read	CPoint 4	Delete	Copy&Paste	DB Number	0			
	/rite DB	CPoint 5	Delete	Copy&Paste	Star address	23			
	/rite DB	CPoint 6	Delete	Copy&Paste	Data Offset Bits	0			
					PLC data type	Bool	•		
Property 💌 🖡	1				Enable trigger mode	Enable	•		
Search X	1				Calculation	No	•		-
Publish command a 0	ollection poi	nt			Automatic publish				
Channel name Publish channel	nand name	Operation			Automatic publish:	Enable 🔻	To mo	dbusTCP server	
	Read	Add			Data area:	4XXXX -			
	Write	Add			Star address:	0			
	ead DB	Add			Address interval:	1			
		Auu			Quick publish:	Publish	All to m	odbusTCP server	
	/rite DB	Add					1		
	Message								~ ‡

🚺 ІОТ	gateway conf	guration :	software										—	o x
File	View	Tools												
Progect			- û	About MG-IOT03	-S7 S7(Et	hernet)_1 Mo	odbus	TCP ×						÷
⊿ MG	-IOT03-S7			Publish channel co	nfig <mark>/</mark> P	ublish point	con	fig						
⊿ Ci	ollection c	hannel		Publish point										
1	S7(Etherne	et)_1		Publish point name	Data area	Star address		Collection channel	Collection point	Property	Data area	Star address	Store type	Disconnec
⊿ Pi	ublish chai	nnel		RPoint 1	4	0	<>	S7(Ethernet)_1	CPoint 1	Read	с	23	Bool	Cancel
	Modbus T	СР	1	RPoint 2	4	1	<>	S7(Ethernet)_1	CPoint 2	Write	м	0	Bool	Cancel
			_	RPoint 3	4	2	<>	S7(Ethernet)_1	CPoint 3	Read	V(DB)	0	Bool	Cancel
				RPoint 4	4	3	<>	S7(Ethernet)_1	CPoint 4	Read	м	0	Bool	Cancel
				RPoint 5	4	4	<>	S7(Ethernet)_1	CPoint 5	Write	V(DB)	0	Bool	Cancel
				RPoint 6	4	5	<>	S7(Ethernet)_1	CPoint 6	Write	V(DB)	0	Bool	Cancel
Property	/		~ ↓											·
2	Search		×											
Comr Chan	nand amount nel descriptio	6 n Mod	bus TCP											
Chan	nel type	Mod	bus TCP											
				Add publish point										
				Command name O	peration									
				Read/Write	Add									
				4										
				Message										- ù

3.2.2 Manual release of collection points

Right-click the publishing channel in the left "Project bar" and select the publishing channel to be added. There are two options, Modbus TCP channel and MQTT channel.

IOT gateway configuration software									-	□ ×
File View Tools										
Progect	About MG-IO	103-S7 S7(E	thernet)_1 Mod	bus TCP 🛛 🗙						÷
▲ MG-IOT03-S7	Publish channel	config / F	Publish point c	onfig						
Collection channel	Publish point									
S7(Ethernet)_1	Publish point nar	ne Data area	Star address	Collection of	hannel Collection point	t Property	Data area	Star address	Store type	Disconnec
✓ Publish channel	RPoint 1	4	0 <	> S7(Ethern	et)_1 CPoint 1	Read	С	23	Bool	Cancel
Modbus TCP Add p	publish channel 🔸 🛛 🕅	Nodbus TCPCI	hannel <	> S7(Ethern	et)_1 CPoint 2	Write	м	0	Bool	Cancel
	RPoint	AQTTChannel	<	> S7(Ethern	et)_1 CPoint 3	Read	V(DB)	0	Bool	Cancel
	RPoint 4	4	3 <	> S7(Ethern	et) 1 CPoint 4	Read	м	0	Bool	Cancel
	PBoint 5	-	4 4	C7/Ethorn	at) 1 CBaint F	W/rite		0	Paal	Comment
	KFOINT 5	4	4 <	> S/(culeri	et)_1 CFOINTS	write	V(DB)	U	BOOI	Cancel
	RPoint 6	4	5 <	> S7(Ethern	et)_1 CPoint 6	Write	V(DB)	0	Bool	Cancel
Description of the second seco										
Property Search	Ĵ.									
Bublich command a 6										
Channel name Publish chann	nel									
	Add publish point									
	Command name	Operation								
	Read/Write	Add								
IOT gateway configuration software									_	
File View Tools										
Proget	About MG-IO	T03-57 57/F	thernet) 1 × Mod	ous TCP						=
A MG-IOT03-S7	Collection chan	nel config	Collection p	pint config						
A Collection channel	Collection point				Parameter					
= Collection charliner	Command name	Collection p	oint name Delet	е Сору	Parameter name	Parameter	[,] value			A
57(Ethemet)_1	Read	CPoin	t 1 Delet	e Copy&Paste	Collection Point Name	CPoint 1				
Publish channel	Add publish channel	Modbu	us TCPChannel	Copy&Paste	Read Or Write	Read	-			
Modbus TCP	Devid DR	MQTTO	Channel		Function code	Read	*			- 11
	Read DB	CPoin	it 3 Delet	e Copy&Paste	Register Area	С	•			
	Read	CPoin	nt 4 Delet	e Copy&Paste	DB Number	0				
	Write DB	CPoin	nt 5 Delet	e Copy&Paste	Star address	23				
	Write DB	CPoin	nt 6 Delet	e Copy&Paste	Data Offset Bits	0				
					PLC data type	Bool	•			
Property	· #				Enable trigger mode	Enable	•			
tearch Search	×				Calculation	No	-			
Publish command a 6	Add collection poin	ht			Automatic publish	^				
Channel name Publish chann	Command name	Operation			Automatic publish:	Enable 🔻	To modbu	sTCP server		<u>^</u>
	Read	Add			Data area:	4XXXX -				
	Write	Add			Star address:	0				
	Read DB	Add			Address interval:	1				

Add

Quick publish: Publish All to modbusTCP server

3.2.2.1 Manual Modbus TCP channel configuration

Click Modbus TCP channel, Modbus TCP server parameters can be configured, port number default 502, watchdog enable or disable, and watchdog time.

🖸 IOT gateway configuration software	- •	
. File View Tools		
Progect 👻 🖡	About MG-IOT03-S7 S7(Ethernet)_1 Modbus TCP ×	Ŧ
▲ MG-IOT03-S7	Publish channel config Publish point config	
 Collection channel 	ModbusTCP Server Parameters	
S7(Ethernet) 1	Parameter name Parameter value	
Publish channel	Port 502	
Modbus TCP	Watchdog Enable Disable	
initia da rei	Watchdog Time(s) 30	
Property 🔻 🖡		
Search X		
Command amount 6 Channel description Medhus TCD		
Channel type Modbus TCP		
	Message	- 4

Click "Configure Publish Point" and select "Add read and write command" in the "Add Publish point" bar. Configuring the publishing point name, Modbus register area, and starting address in the Parameters column. Then select the associated collection channel, the collection point, and click the associated point. Figure: Add a read command, release point name is RPoint 1, publish to 40001 address, collect CPoint 1 data from PLC.

IOT gateway configuration software								
File View Tools								
Progect 👻 🖡	About MG-IOT03-	S7 S7(Et	hernet)_1 Mo	odbus 1	CP ×			
▲ MG-IOT03-S7	Publish channel co	nfig <mark>/</mark> P	ublish point	conf	ig			
Collection channel	Publish point						Parameter	
S7(Ethernet) 1	Publish point name	Data area	Star address		Collection channel	Collection point	Parameter name	Parameter value
Publish channel	RPoint 1	4	0	<>	S7(Ethernet)_1	CPoint 1	Point Name 2	RPoint 2
Madhus TCP	RPoint 2	4	2	<>	S7(Ethernet)_1	CPoint 2	Register Area	4XXXX •
WOODUS TCP	RPoint 3	4	2	<>	S7(Ethernet) 1	CPoint 3	Star address	2
	RPoint 4	4	4 3	<>		CPoint 4		
	RPoint 5	4	4	<>	S7(Ethernet)_1	CPoint 5		
	RPoint 6	4	5	<>	S7(Ethernet)_1	CPoint 6		
	RPoint 7	0	0	<>				
Property • 1								
2 ↓ Search X								l
Command amount 7 Channel description Modbus TCP								•
Channel type Modbus TCP	4		_			\sim		
	Add publish point	4		/				
	Command name Or	eration						3
	Read/Write	Add	1 /				Relation	
		Adu					Collection chann	el: S7(Ethernet)_1 🔻
							Collection point:	Read CPoint 1 🔻
							Relation: Relation	n

3.2.2.2 MQTT channel configuration

Click the MQTT channel, and MQTT can be configured to publish channel parameters, including MQTT Sever parameter, Device parameter, and Communication parameter.

1. MQTT Sever Parameter

IOT gateway configuration software		
File View Tools		
Progect 💌 🖡	About MG-IOT03-S7 S7(Ethernet)_1	MQTT X
MG-IOT03-S7	Publish channel config 7 Publish	point config
 Collection channel S7(Ethernet) 1 	Parameter name Parameter value	
✓ Publish channel	Port 502	
ΜQTT	TLS enable Disable •	
	Server domain name ServerHostName	
	Server IP 0 . 0 . 0 . 0	
	Device parameter	
	Parameter name Parameter value	
-	Device name DeviceName	
Property 💌 🖡	Password Password	
Ê 2 ↓ Search X	Client ID ClientID	
Command amount 0 Channel description MQTT	Communication parameter	
Channel type MQTT	Parameter name Parameter val	ue
	Session Sign Hold	•
	Requst timeout time(ms) 1000	
	Keep alive time(ms) 3000	

The parameter	Parameter description			
Dort	Remote port of the server.			
TOIT	The default is 502			
Connection mode	Connection way			
	(IP address connection or domain name			
TI S enable	Encryption enablement			
I LS chable	(encryption is not currently supported)			
MQTT server	Server domain name			
domain name	(ignored if connected via IP)			
MQTT server IP	Server IP (ignored if connected via domain			

2. Device parameter

🚺 IOT gateway configuration software							
File View Tools							
Progect 💌	About MG-IOT03-S7 S7(Ethernet)_1 MQTT ×						
▲ MG-IOT03-S7	Publish channel config // Publish point config						
	Server domain name ServerHostName						
Collection channel	Server IP 0.0.0.0						
S7(Ethernet)_1	Dovice parameter						
A Publish channel							
	Parameter name Parameter value						
МОПТ	Device name DeviceName						
	Password Password						
Property 🔻	Client ID ClientID						
🚉 ⊉↓ Search 🗙	Communication parameter						
Command amount 0	Parameter name Parameter value						
Channel description MQTT							
Channel type MQTT	Session Sign Hold •						
	Requst timeout time(ms) 1000						
	Keep alive time(ms) 3000						
	Message						

The parameter name	Parameter description		
Device name	Corresponds to the user name in MQTT, the name of the user identifying the connection, the user name that could be used for authentication needs to be less than 128 characters.		
Password	The Password corresponding to the Password in MQTT identifies the connected user, the password that can be used for authentication needs to be less than 128 characters.		
Client ID	Corresponding to the Client identifier in MQTT, the unique identity of the Client to the server. It must be unique for all clients to connect to a server and is key in handling Qos level 1 and 2 message ID.		

3.	Commun	ication	parameter
			1

🐻 IOT gateway configuration software				
File View Tools				
Progect 💌 🕂	About MG-IOT	03-S7 S7(Ethernet)_1	MQTT ×	
▲ MG-IOT03-S7	Publish channel of	config 🕖 Publish poi	int config	
4 Collection channel	Server domain nam	ne ServerHostName		
	Server IP	0.0.0.0		
S7(Ethernet)_1	Device paramete	r		
Publish channel	Demonster remained	Da wa wa ata wa kua		
MOTT	Parameter name Parameter value			
	Device name			
	Password	Password		
Property 👻 🖟	Client ID ClientID			
the search ★	Communication	parameter]	
Command amount 0	Parameter nan	ne Parameter value		
Channel type MQTT	Session Sign	Hold •		
	Requst timeout time(ms) 1000			
	Keep alive time(ms) 3000		
	Message		<u></u>	

Parameter name	Parameter description
	Corresponding To the Clean Session in MQTT
	Hold; To keep the session truncated and recover
	the previous session information after the
	cluster is disconnected and reconnected, the
C	client and server need to have relevant session
Session sign	persistence mechanism
	Clear: Clear the previous Session. Each connect
	is a new Session,
	The session lasts only as long as the network
	connection
Request timeout	MOTT request timeout time (ms)
time	MQ11 request timeout time (IIIs)
Keep alive time	MOTT survival time (ms)

Click "Publish Point Config" and select the command in the "Add publish Point" bar to add. The type of command added is optional: MQTT Subscribe /MQTT Publish.

1. MQTT Publish parameter configuration

Configure the published parameters in the parameter list

IOT gateway configuration software		- 🗆 X
File View Tools		
Progect 👻 🖡	About MG-IOT03-S7 S7(Ethernet_1 MQTT ×	Ŧ
▲ MG-IOT03-S7	Publish channel config / Publish point config	
 Collection channel 	Publish point Parameter	Relation collection point
S7(Ethernet) 1	Command name Publish point name Operation Copy Parameter name Parameter value	Collection channel Command name
4 Publish chappel	MQTT Subscribe TopicName 1 Delete Copy&Paste Topic Name TopicName 2	
	MQTT publish TopicName 2 Delete Copy&Paste Qos 0 -	
MQTI	Send mode Trigger •	
	Delay time(ms) 0	
Property 👻 🎚	Data format Binary 💌	Relation
tearch X	Add publish point	Relation
Command amount 2	Command name Operation	Collection channel: S7(Ethernet)_1 *
Channel description MQTT Channel type MOTT	MOTT Subscribe Add	Collection point: •
chamer type main that i		Relation: Relation Relation all
	MQTT publish Add	Relation Relation an
	<u>`</u>	
	Message	▲ ů

The parameter name	Parameter description	
Topic name	A name that needs to be published to the topic.	
Qos level	MQTT message level, currently only supported at 0,1	
Send mode	Ways to push messages: trigger, loop	
Delay time (ms)	The release cycle time, triggers can be ignored	
Data format	The message format for publishing: binary, JSON	

2. MQTT subscription parameter configuration

IOT gateway configuration software		- 🗆 X
File View Tools		
Progect 👻 🕂	About MG-IOT03-S7 S7(Ethernet)_1 MQTT ×	÷
▲ MG-IOT03-S7	Publish channel config / Publish point config	
 Collection channel 	Publish point Parameter	Relation collection point
S7(Ethernet) 1	Command name Publish point name Operation Copy Parameter name Parameter value	Collection channel Command name
A Publish chapped	MQTT Subscribe TopicName 1 Delete Copy&Paste Topic Name TopicName 1	
	MQTT publish TopicName 2 Delete Copy&Paste Qos 0 -	
MQTI	Data format Binary •	
Property 👻 🖡		Relation
E 2↓ Search ×	Add publish point	
Command amount 2	Command name Operation	Collection channel: S7(Ethernet)_1 *
Channel description MQ11 Channel type MQTT	MQTT Subscribe Add	Collection point:
	MQTT publish Add	Relation: Relation Relation all
		· · · · · · · · · · · · · · · · · · ·
	Message	~ ņ

Parameter name	Parameter description	
Topic name	Need to subscribe to the name of the topic	
Qos level	MQTT message level, currently only supported at 0,1	
Data format	The message format of the subscription: binary, JSON	

After the MQTT publish and subscribe parameter is set, it can be independently associated with collection, or all collection points can be associated with one click.

3.3 configuration file

After you have configured all the collection and distribution points, right-click MG-IOT03 and choose to download the configuration to the gateway.

You can also choose to upload, import, and export configurations. When uploading and importing the configuration, you need to first create an MG-IOT03 project. If the download fails, please check whether the COMPUTER IP address and the gateway IP address are in the same network segment, and check whether the gateway IP address is set correctly. If you forget the http:// www.odotautomation.com 21 / 24 TEL: +86-0816-2538289 gateway IP address, you can reset the gateway by using the reset key. After reset, the gateway IP address is the default factory IP address.

Note: Make sure that the computer and gateway are in the same network segment when downloading and uploading.

3.4 Modbus Poll software testing

Please open the MODBUS POLL software, select the Connection/ Connect menu, and select Modbus TCP/IP input gateway IP address 192.168.1.100, Server Port For 502, click the OK button.

onnection Setup	-	×
Connection		ОК
Modbus TCP/IP	▼	
Serial Settings		Cancel
COM6		Mode
19200 Baud 🔻		RTU O ASCII
7 Data bits 👻		Response Timeout 1000 [ms]
Even Parity 📼		- Delau Between Polls
2 Stop Bits 👻	Advanced	20 [ms]
Remote Modbus Server		
IP Address or Node Name		
192.168.1.100		•
Server Port	Connect Timeout	IPv4
502	3000 [ms]	© IPv6

IOT gateway configuration software				
File View Tools				
Progect	~ ù	About MG-IOT03-	S7 × S7(Ethernet)_1 N	MQTT
▲ MG-IOT03-S7		Ethernet Port		
▲ Collection channel		Parameter name	Parameter value	
C7/Ethornat) 1		MAC Address	00:00:00:00:00:00	
S/(Ethernet)_1		IP Address	192.168. 1.100	
Publish channel	el	Net Mask	255.255.255.0	
MQTT		Net Gateway	192.168.1.1	
		Configure Port	1024	
Property	~ џ	DHCP enable	Disable 🔹	
Barch Search	×	DNS server IP address	114.114.114.114	
Command amount	2	IP Address(Release)	192.168.2.254	
Channel description	MQTT	Net Mask(Release)	255.255.255.0	
Channel type	MQTT	Net Gateway(Release)	192.168.2.1	
		Marrage		
		Message		

Select Step/Read/Write Definition, select function code 03, and click OK.

Read/Write	Definition			
Slave ID:	1]		ОК
Function:	03 Read Holding Registers (4x) 🔻 Cancel			
Address:	0 Protocol address. E.g. 40011 -> 10			
Quantity:	10]		
Scan Rate:	100	[ms]		Apply
Disable Read/Write Disabled				
Disable on error Head/Write Unce			Read/Write Unce	
View Rows (© 10	◎ 20 ◎	50 🔘	100 🔘 Fit to	Quantity
Hide Alias Columns		PLC Addresses (Base 1)		
Addres	s in Cell		Enron/Da	niel Mode

File Edit Connection	n Setup Function	ns Display View
🗅 🚅 🖬 🎒 🗙 🖂 🗎	皇自二 05	06 15 16 17 22
Tx = 10471: Err = 0: ID =	1: F = 03: SR = 1	00ms
Alias	00000	
0 Data written to the PLC	50	
1 Read PLC data	50	
2	0	
3	0	
4	0	
5	0	
	1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 -	

Odot Automation System Co., Ltd.

Add: No.6 Hongsheng Road, Hi-Tech District, Mianyang, Sichuan, China.



Tel: +86-0816-2538289 Zip Code: 621000 Email:sales@odotautomation.com Web: www.odotautomation.com