MITSUBISHI QJ71MT91 Modbus TCP/IP

The QJ71MT91 is used to connect the MELSEC-Q series PLC to a MODBUSR /TCP network.

http://www.modbus.org http://www.mitsubishi-automation.com/

HMI Setting:

Parameters	Recommend	Option	Notes
PLC type	MODBUS TCP/IP		
Com port	Ethernet		
HMI Station No.	0	Does not apply	
PLC Station No.	1	Does not apply	
TCP Port	502		

PLC Setting:

Communication mode

Device address:

Bit/Word	Device Type	Format	Range	Memo
В	0x	ddddd	1-65535	Output bit
В	1x	ddddd	1-65535	Input bit (read only)
В	3x_Bit	ddddd(dd)	100-6553515	Input Register bit (read only)
В	4x_Bit	ddddd(dd)	100-6553515	Output Register bit
W	3x	ddddd	1-65535	Input Register (read only)
W	4x	ddddd	1-65535	Output Register
DW	5x	ddddd	1-65535	4x double word swap
W	6x	ddddd	1-65535	4x single word write

NOTE:

Address type "5x" are mapping to Hold Reg. The communication protocol of 5x almost same as "4x" except "5x"making double word swap.

If 4x have following information

Address	1	2	3	4	5	6	
Data in word	0x1	0x2	0x3	0x4	0x5	0x6	
Data	0x200	01	0x400	03	0x600	05	

For 5x, it become

Address	1	2	3	4	5	6	
Data in word	0x2	0x1	0x4	0x3	0x6	0x5	
Data	0x100	02	0x300	04	0x500	06	

Modbus RTU function code:

0x	0x01 Read coil	0x05 write single coil				
1x	0x02 Read discrete input	N/A for write operation				
3x	0x04 Read input register	N/A for write operation				
4x	0x03 Read holding register	0x10 write multiple register				
5x	0x03 Read holding register	0x10 write multiple register				
(note:	reverse word order in double word for	rmat)				
3xbit i	s equivalent to 3x					
4xbit i	s equivalent to 4x					
бx	0x03 Read holding register	0x06 write single register				
(note: use 6x device is limited to device of one word only)						

Wiring diagram:

Ethernet (to switch, hub or router):

MT80 RJ45	00 Ethernet	Wire color	_	Etherr RJ45	net Hub or Switch	
1	TX+	White/Orange		1	RX+	
2	TX-	Orange		2	RX-	
3	RX+	White/Green		3	TX+	RJ45 connector
4	BD4+	Blue		4	BD4+	
5	BD4-	White/Blue		5	BD4-	
6	RX-	Green		6	TX-	
7	BD3+	White/Brown		7	BD3+	
8	BD3-	Brown		8	BD3-	



Ethernet: Direct connect (crossover cable)

MT80 RJ45	00 Ethernet	Wire color	_	Modbu RJ45	IS TCP Device
1	TX+	White/Orange		3	RX+
2	TX-	Orange		6	RX-
3	RX+	White/Green		1	TX+
4	BD4+	Blue		4	BD4+
5	BD4-	White/Blue		5	BD4-
6	RX-	Green		2	TX-
7	BD3+	White/Brown		7	BD3+
8	BD3-	Brown		8	BD3-



MT8000 192.168.0.80



Modbus RTU TCP/IP Device 192.168.0.154

PLC Setting:



- 1. Click "PLC parameter"
- 2. Click "I/O assignment"
- 3. Select "Intelli." At slot 1.
- 4. Click "Switch setting"

(III)	Paran are li	eter PLC system PLC	file	IPLC BAS Dev	ke i Pi	ogram Bo	a B	e lisec	Г	/D assignment
1/0	Assigne	vent(")							-	
	SI	st Type		Model nam	ė	Points		StatkY	٠	
0	PLC	PLC	٠				٠			Switch setting
1	0(0-0)	Inteli.	٠	QJ71MT91		32points				
2	1(0-1)		٠				+			Detailed setting
3	20-21		٠				٠			
4	3(0-3)	_	*				*			
5	404		٠				*			
6	-		*				*			
Bao	e setting	nis seeing biank v a(")		or cause an error o	o occur					Dava mode
		Base model name	Ρ	ower model name	Exten	sion cable	5	ilots 📍		C Auto
М	an		Γ				1	5 .		Detail
Ext.E	Base1		Ľ					*		
[xt]	Lase2		1				-	*		and a set
Ext	ane3		∔							8 Slot Default
Ext	Sase4		⊢				+-	*		12 Skit Default
Cr.	Settings using n	should be set as a ultiple CPU.	am	e whening	port Mul	tiple CPU P	aran	veter	P	lead PLC data
ckn	owledg	XY assignment	M	Alple CPU settings	De	lauk (hec	k 📃	End	Cancel

		101 110 11	d intelligent function	a mod ale				
					Input	format	HEX	-
	Sibt	Tupe	Model name	Switch 1	Switch 2	Switch 3	Switch 4	Switch 5
) P	1.C	PLC						
1 0	10-01	Intelli.	QJ71MT91			COAB	0094	
2 1	(8-1)							
) 2	10-21							
4 3	10-31	-		-	_	_		_
5 4	(0-4)							
5				-		_	_	
4					_	_		_
+								
2					_	_	_	
Ť								
2								
3								
4								
5								

Switch No.	Description	Initial ∀alue
Switch 1	Operation mode setting	0000н
Switch 2	Communication condition setting	0000н
Switch 3	IP address setting (high order)	С001н
Switch 4	IP address setting (low order)	00FEH

Entering the values in hexadecimal makes the setting easy. Change the input format into HEX before entering the values.

C0A8 009A = 192.168.0.154

After setting, write the data to the PLC, and power the PLC OFF, then ON or reset the PLC CPU.

EC/GPPW/QOOMT9	1 - [LD(Read mode)	MAIN	35 Step]
Online Diagnostics	Tools Window Help		_
	Check program Merge data Check parameter Transfer ROM Delete unused comment Clear all parameters IC memory card	► 13	1
	Start ladder logic test Set TEL data	•	
	Intelligent function utili	ty 🕨	Utility list
0	Customize keys		Start

In GX Developer, click [Tools]/[Intelligent function utility]/[Start].

🖉 Intelligent (unction Module utility C:W	HELSEC 10 P7	** 🔳 🗖 🔀
File Online To	sols Help		
Intelligent have 1. 0000	ction module parameter setting m No. 2. Package name Module model: Module model: Commodule parameter setting m	odule select	•
Start I/O No. 0000 (Module model name U/71MT91	Initial setting	Auto refresh
4.	a Auto refresh	Delete	Ext

Intelligent function module parameter setting module select screen.

Enter "Start I/O No." and select "Module type" and "Module model name".

Click [Initial setting]

sitial setting		1
Module information		Click [Basic parameter]
Module model name: QJ71MT91	Start I/O No.: 0000	
Module type: MODBUS(R) Module		
Setting item	Setting value	
MODBUS is a registered trademark of Schweider Electric SA		
Basic parameter	Basic parameter	
Automatic communication parameter	Automatic communication parameter	
MODBUS(R) device assignment parameter	MODBUS(R) device assignment	
Make text file En	d retup Cancel	Set Default router IP ad Click [End] setup
Make text file En	d retup Cancel	Set Default router IP ac Click [End] setup
Make text like En	d setup Cancel	Set Default router IP ac Click [End] setup
Make text Re En	d setup Cancel	Set Default router IP ad Click [End] setup
Make text file En	d setup Cancel	Set Default router IP ac Click [End] setup
Make text file En	d setup Cancel	Set Default router IP ac Click [End] setup
Make text file En	d setup Cancel	Set Default router IP ad Click [End] setup
Make text file En Andule information Module information Module information Module model name: QJ71MT51 Module type:: M0DBUS(R) Module Setting Rem KeepAlive interval timer value(Unit: 500ms) Kee	d retup Cancel	Set Default router IP ac Click [End] setup
Make text file En Module information Module information Module type: MODBUS(R) Module Setting Rem KeepAlive interval time value(Lnit: 500ms) KeepAli	d setup Cancel	Set Default router IP ad Click [End] setup
Make text Re En	d setup Cancel	Set Default router IP ad Click [End] setup

router IP address.

setup

le Coller To Monitor Read for Wate to pocco	nols Help And paramete PLC Paci Mod Cfon module parameter	rr setting module selec kage name ODBUS(P() Module kile model name (71MT91 rr setting module	v
Start I/O No. 0000 (Module model n 1J71MT91	ame Initial sett	ng Autoretiesh Unavailsble

2. End setup

Make text file

Click [Online]/[Write to PLC]

Cancel