MITSUBISHI Electric Corporation MELSEC-Q Series

SERIAL (QJ71C24, Format 5) Driver

Compatibl OS e version Over 4.0



XDesignerPlus Over 4.0.0.0

CONTENTS

Thank you for using M2I's "Touch Operation Panel(M2I TOP) Series". Please read out this manual and make sure to learn connection method and process of "TOP – External device"

1. System configuration Page 2

It explains device for connection, setup of, cable and structural system.

Please choose proper system referring to this point.

2. Types of TOP and Selecting

External Device

Page 3

It is to select the type of TOP and external device.

3. Example of system settings Page 4

It explains setup example for communication connection between the device and external terminal.

Select example according to the system you choose in "1. System structure"

4. Communication settings details Page18

It explains the way of configuring TOP communication.

If external setup is changed, make sure to have same setup of

TOP with external device by referring to this chapter.

5. Cable diagram

Page 19

Explains cable specifications required for access.

Select proper cable specifications according to the system you chose in "1. System configuration".

6. Support address

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Check available addresses to communicate with external devices 1 / 26 referring to this chapter.



1. System configuration

System Configuration of TOP and "MITSUBISHI Electric Corporation - MELSEC-Q Series SERIAL(QJ71C24, Format5)" is as follows.

Series	CPU	Link I/F	Method	System settings	Cable
Series	CPU Q02CPU Q02HCPU Q06HCPU Q12HCPU Q25HCPU Q00JCPU Q00CPU Q01CPU Q01UCPU Q01UCPU Q03UDCPU Q04UDHCPU Q06UDHCPU Q00UCPU Q01UCPU	Link I/F In case if Channel 1 (QJ71C24 *caution1) QJ71C24-R2 *caution1) QJ71C24N QJ71C24N-R2 QJ71C24N-R2 QJ71C24-R4 QJ71C24-R4 QJ71C24N QJ71C24N-R4	Method ch1) is used RS-232C RS-422 (4 wire) RS-485 (2 wire)	System settings	Cable
MELSEC-Q		In case if Channel 2 (QJ71C24-R2 *caution1) QJ71C24N-R2 QJ71C24N-R2 QJ71C24-R4 QJ71C24N QJ71C24N QJ71C24N	ch2) is used RS-232C RS-422 (4 wire) RS-485 (2 wire)		

*Caution1) In case if it is the "QJ71C24"/ "QJ71C24-R2" communication module, please refer to the list below.

(1) If you use communication card, please set the total sum of communication speed of channel 1(CH1), channel2(CH2) less than **115200[BPS]**.

(2) It is not compatible with $Q \square UDE \square CPU$.

Connection configuration

• 1 : 1(1 TOP and 1 External Device) Connection - it is for RS232C/422/485 communication.



• 1 : N(1 TOP and Several External Devices) Connection - It is for RS422/485 communication.





2. Selecting TOP model and External Device

Select the external devices to connect to TOP.

	HMI / PLC Uint				
Series XTOP Series Model XTOP15TX-SA/S	Vendor MITSUBISHI Electric Corporation D PLC Model MELSEC-Q Series SERIAL(QJ71C24,Format5)				
	PLC				
Vendor	Model				
M2I Corporation MITSUBISHI Electric Corporation OMRON Industrial Automation LS Industrial Systems MODBUS Organization SIEMENS AG. Rockwell Automation (AB) GE Fanuc Automation PANASONIC Electric Works YASKAWA Electric Corporation YOKOGAWA Electric Corporation Schneider Electric Industries KDT Systems RS Automation(SAMSUNG)	 CC-LINK(Remote Device Station) MELSEC-A Series ETHERNET MELSEC-AnA Series Computer Link MELSEC-AnA(A2A/A3A) Series CPU Direct MELSEC-AnA(A2U/A3U/A4U/A2US/A2USH) Series CPU Direct MELSEC-AnN (A0J2) Series CPU Direct MELSEC-AnN (A2N,A3N) Series CPU Direct MELSEC-AnN Series Computer Link MELSEC-AnN(AnS,A0J2H) Series CPU Direct MELSEC-FX Series CPU Direct MELSEC-FX Series Computer Link MELSEC-Q (UDE Type) Series CPU ETHERNET MELSEC-Q Series CPU Direct 				
HITACHI IES FATEK Automation Corporation DELTA Electronics KOYO Electronic Industries VIGOR Electric Corporation Comfile Technology Dongbu(DASAROBOT) ROBOSTAR	MELSEC-Q Series ETHERNET(QJ71E71) MELSEC-Q Series SERIAL(QJ71C24,Format1) MELSEC-Q Series SERIAL(QJ71C24,Format5) MELSEC-Q(00CPU/01CPU) Series CPU Direct MELSEC-Q(00JCPU) Series CPU Direct MELSERVO-J2 Series MELSERVO-J3 Series				

Setting	details	Contents						
		Select the name of a TOP series that is to be connected to PLC.						
		Before downloading the settings, install the OS version specified in the table below according						
	Series	to TOP series.						
TOP		Series	Version name					
		XTOP / HTOP	V4.0					
	Name	ne Select the model name of TOP product.						
	Maria Gardanaa	Select the manufacturer of external devices to be connected to TOP.						
Communicatio	Manufacturer	Please Choose "MITSUBISHI Electric Corporation".						
n Device		Select the model series of externa	al devices to be connected to TO	Р.				
	PLC	Please select "MELSEC-Q Series SI	ERIAL(QJ71C24, Format5) ".					
		Please check, in the "1. System co	onfiguration", if the relevant exter	rnal device is available to set a				



	system	configuration
	system	configuration



3. Example of system settings

Regarding of communication interface settings in TOP and external devices, we suggest as below.

3.1 Example of settings 1

The system is set as below.

Details		ТОР	MELSEC-Q Series	Remark
Serial level (port/cha	nnel)	RS-232C (COM2)	RS-232 채널 1(CH 1)	User settings
Address(PLC Address	5)	_	0	User settings
Serial baud rate [BPS]		384	User settings	
Serial data bit [Bit]		8	User settings	
Serial stop bit [Bit]		1	User settings	
Serial parity bit [Bit]		NO	User settings	
MC Protocol		FORMAT 5(4C FRAME	FORMAT5 BINARY)	User settings

(1) XDesignerPlus setup

After setting the below details in [Project > Project Settings], download the detailed settings using TOP tool.

I. DLC Setting	- From right window [HMI Setup > check Use HMI Setup > Device Manager]								
⊡ COM2 (1)	HMI Setup Sepcial E	Buffer Sync							
PLC1 : MELSEC-Q Serie	👿 Use HMI Setup	📝 Use HMI Setup							
COM1 (0)	System Setup PLC	Setup E	evice Manager	Interface					
Ethernet (0)			* Co	ommunicatio	on Port				
FieldBus (0)	+ COM 1			+ COM	2				
USB Device (0)	- Boud Rate :	38	400 👻	- Boud	Rate :	38400	•		
CF Card Setting	- Data Bit :	8		- Data	Bit:	8	•		
CrCard	- Stop Bit :	1		- Stop	Bit:	1	+		
	- Parity Bit :	No	ne 👻	- Parity	/Bit:	None	•		
				- Signa	I Level :	RS-232C	•		
	External device	settinas							
-	This sets the com	nunicatio	on driver of "	MELCEC C	Corios SERI	NI (0171024 Ear	mat5)"		
	This sets the com	numcatio		PLC Comm In	a Series SLIM	AL(Q)/1C24, 101	mat)		
	Station Number(PI	LC) 0							



Please set up using MELSEC series Ladder Software "GX Developer" as below. Please refer the PLC user manual for more detailed information if you need.

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If you use "QJ71C24" or "QJ71C24-R2" communication card, please set the total sum of communication speed of channel 1(CH1), channel 2(CH2) less than <u>115200[BPS]</u>.

1. From "GX Developer" project window, double click [Parameter] > [PLC parameter] to pop up [Q parameter setting] Dialog Box.

2. Please select [I/O Assignment] tab in the [Q parameter setting] Dialog Box.

3. Please set the **[Type]**, which the communication module is installed, to "**Intelligent**" from **[I**/O Assignment(*)] box.

- 1	Slot	Slot Type		Type Model name Points			StartXY	+	
0	PLC	PLC	-			+			Switch setting
1	0(*-0)	Intelli.	-		32points	+			Detailed eattin
2	1(*-1)		-		121	+			Detailed Settin
3	2(*-2)		-		121	+			
4	3(*-3)		-		121	+			
5	4(*-4)		-			+			
6	5(*-5)		-			+			
7.	ler» en	the L/O ar	Idraes i	e not nococearu	as the CPIL	doe	e it auto	mat	allu

Leaving this setting blank will not cause an error to occur.

(Caution) The picture above is when communication module is installed at slot number 0.

4. Click [Switch setting] and set up as below on the pop up window.

Sw	Switch setting for I/O and intelligent function module 🛛 🛛 🔀										
						Inpu	ut format	HEX,	·		
	Slot	Type	Model name	Switch 1	Switch 2	Switch 3	Switch 4	Switch 5	7		
0	PLC	PLC									
1	0(*-0)	Intelli.		09E2	0005	()		0000	-		
2	1(*-1)										
3	2(*-2)			1							
4	3(*-3)										
5	4(*-4)						[]				
6	5(*-5)										
7	6(*-6)										
8	7[*-7]			1			. I.				
9	8(*-8)			1							
10	9(*-9)			1							
11	10(×-10)				-						
12	11(*-11)				-						
13	12(*-12)				5						
14	13(*-13)				6						
15	14(*-14)					-			<u>.</u>		
			E	nd	Ca	ncel					

Switch	Setting value	Setting details				
	05E2	9600 / 8 / 1 / NONE				
Curitada 1	07E2	19200 / 8 / 1 / NONE				
Switch 1	09E2	38400 / 8 / 1 / NONE				
	OBE2	115200 / 8 / 1 / NONE				
Switch 2	5	FORMAT 5(4C FRAME FORMAT5 BINARY)				
Curitch E	0	Set to "0" on address of Communication module				
Switch 5	0	(Channel 1, Channel 2).				

In case of the Channel1, write the contents of the Switch1 and the Switch2 to the Switch3 and the Switch4.

X Recommend the example of the setting contents



3.2 Example of Settings 2

The system is set as below.

Details		ТОР	MELSEC-Q Series	Remark
Serial level (port/char	nnel)	RS-422 (4 wire, COM2)	RS-422 채널 1(CH 1)	User settings
Address(PLC Address)		_	0	User settings
Serial baud rate [BPS]		384	User settings	
Serial data bit	[Bit]	8	User settings	
Serial stop bit [Bit]		1	User settings	
Serial parity bit [Bit]		NOI	User settings	
MC Protocol		FORMAT 5(4C FRAM	E FORMAT5 BINARY)	User settings

(1) XDesignerPlus setup

After setting the below details in [Project > Project Settings], download the detailed settings using TOP tool.





Please set up using MELSEC series Ladder Software "GX Developer" as below. Please refer the PLC user manual for more detailed information if you need.

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If you use "QJ71C24" or "QJ71C24-R2" communication card, please set the total sum of communication speed of channel 1(CH1), channel 2(CH2) less than **115200[BPS]**.

1. From "GX Developer" project window, double click [Parameter] > [PLC parameter] to pop up [Q parameter setting] Dialog Box.

2. Please select [I/O Assignment] tab in the [Q parameter setting] Dialog Box.b

3. Please set the [type], which the communication module is installed, to "Intelligent" from [I/O Assignment(*)] box.

5100	I ype	e / 6	Model name	Points	- 3	StartXY	*	
PLC	PLC	-			+			Switch settin
D(*-0)	Intelli.	-		32points	+			Detailed eattin
I(*-1)		-		100	+			Detailed Settin
2(*-2)		-			+			
3(*-3)		-			+			
4(*-4)		-			+			
5(*-5)		-			+			
	(*-0) (*-1) (*-2) (*-3) (*-3) (*-4) (*-5)	Side PLC PLC PLC (*-0) Intelli. (*-1) (*-2) (*-3) (*-3) (*-4) (*-5)	Side PLC PLC PLC (*-0) Intelli. (*-1) (*-2) (*-3) (*-4)	Stot Type modername PLC PLC ▼ (*-0) Intelli. ▼ (*-1) ▼ (*-2) ▼ (*-3) ▼ (*-4) ▼ (*-5) ▼	Stot Type Type <thtype< th=""> Type Type <th< td=""><td>Stot Pype Instant Points PLC + - - (*-0) Intelli. - 32points - (*-1) - - - - (*-2) - - - - (*-3) - - - - (*-4) - - - - (*-5) - - - -</td><td>Stot Type Hoder Halle Former PLC V V V (*-0) Intelli. V V V (*-1) V V V V (*-2) V V V V (*-3) V V V V (*-4) V V V V (*-5) V V V V</td><td>Stot Type Hoder Hance Forme PLC PLC Image: Store of the store of</td></th<></thtype<>	Stot Pype Instant Points PLC + - - (*-0) Intelli. - 32points - (*-1) - - - - (*-2) - - - - (*-3) - - - - (*-4) - - - - (*-5) - - - -	Stot Type Hoder Halle Former PLC V V V (*-0) Intelli. V V V (*-1) V V V V (*-2) V V V V (*-3) V V V V (*-4) V V V V (*-5) V V V V	Stot Type Hoder Hance Forme PLC PLC Image: Store of the store of

Leaving this setting blank will not cause an error to occur,

(caution) The picture above is when communication module is installed at slot number 0.

4. Click [Switch setting] and set up as below on the pop up window.

Sw	Switch setting for I/O and intelligent function module										
						Inpu	it format	HEX,	•		
	Slot	Type	Model name	Switch 1	Switch 2	Switch 3	Switch 4	Switch 5 🔺			
0	PLC	PLC									
1	0(*-0)	Intelli,		09E2	0005			0000			
2	1(*-1)										
3	2[*-2]				1						
4	3(*-3)			1	Į						
5	4(*-4)				Į						
6	5(*-5)				Į						
7	6(*-6)										
8	7[*-7]										
9	8(*-8)			<u> </u>							
10	9(*-9)			1	1						
11	10(×-10)										
12	11(×-11)			<u> </u>							
13	12(*-12)				-						
14	13(*-13)				-						
15	14(*-14)			-15				-			
			E E	nd	Ca	ncel					

Switch	Setting value	Setting details				
	05E2	9600 / 8 / 1 / NONE				
Curitada 1	07E2	19200 / 8 / 1 / NONE				
Switch 1	09E2	38400 / 8 / 1 / NONE				
	0BE2	115200 / 8 / 1 / NONE				
Switch 2	5	FORMAT 5(4C FRAME FORMAT5 BINARY)				
Curitale E	0	Set to "0" on address of Communication module				
Switch 5	0	(Channel 1, Channel 2).				

In case of the Channel1, write the contents of the Switch1 and the Switch2 to the Switch3 and the Switch4.

X Recommend the example of the setting contents



3.3 Examples of Setting 3

The system is set as below.

Details		ТОР	MELSEC-Q Series	Remark
Serial level (port/cha	nnel)	RS-485 (2 wire, COM2)	RS-485 Channel 1(CH 1)	User settings
Address(PLC Address	5)	_	0	User settings
Serial baud rate	[BPS]	384	User settings	
Serial data bit	[Bit]	8	User settings	
Serial stop bit	[Bit]	1	User settings	
Serial parity bit	[Bit]	NOI	User settings	
MC Protocol		FORMAT 5(4C FRAM	User settings	

(1) XDesignerPlus setup

After setting the below details in [Project > Project Settings], download the detailed settings using TOP tool.





Please set up using MELSEC series Ladder Software "GX Developer" as below. Please refer the PLC user manual for more detailed information if you need.

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If you use "QJ71C24" or "QJ71C24-R2" communication card, please set the total sum of communication speed of channel 1(CH1), channel 2(CH2) less than **115200[BPS]**.

1. From "GX Developer" project window, double click [Parameter] > [PLC parameter] to pop up [Q parameter setting] Dialog Box.

2. Please select [I/O Assignment] tab in the [Q parameter setting] Dialog Box.

3. Please set the [type], which the communication module is installed, to "Intelligent" from [I/O Assignment(*)] box.

	Slot	Тур	е	Model name	Points		StartXY	•	
0	PLC	PLC	-			-			Switch setting
1	0(*-0)	Intelli.	-		32points	+			Detailed eattin
2	1(*-1)		-			+			Detailed Settin
3	2(*-2)		-			+			
4	3(*-3)		-			+			
5	4(*-4)		-			+			
6	5(*-5)		-			+			
7,	ler» er	the I/O ar	Idress i	s not necessary :	as the CPIL	doe	l s it auto	mati	lhi

Leaving this setting blank will not cause an error to occur,

(caution) The picture above is when communication module is installed at slot number 0.

4. Click [Switch setting] and set up as below on the pop up window.

Sw	Switch setting for I/O and intelligent function module									
						Inpu	ut format	HEX,	_	
	Slot	Type	Model name	Switch 1	Switch 2	Switch 3	Switch 4	Switch 5 🔺		
0	PLC	PLC								
1	0(*-0)	Intelli.		09E2	0005			0000		
2	1(*-1)									
3	2(*-2)			1]		[
4	3(*-3)]					
5	4(*-4)						[]			
6	5(*-5)]					
7	6(*-6)				1					
8	7(*-7)									
9	8(*-8)									
10	9(*-9)			1						
11	10(×-10)			1	Į.					
12	11(*-11)									
13	12(*-12)									
14	13(×-13)									
15	14(*-14)			ļ,			[],	+		
			E	nd	Ca	ncel				
	Sw	itch	Setting	value		Sett	ting deta	ils		
				05E2		960	0/8/1	/ NONE		
	C .			07E2		192	00/8/1	/ NONE		
	SW	Itch 1		09E2		384	00/8/1	/ NONE		
				0BE2		115200 / 8 / 1 / NONE				
	Sw	itch 2		5		FORMAT 5(4C FRAME FORMAT5 BINARY)				
	Switch 5 0			Set to "0" on address of Communication module (Channel 1, Channel 2).						

In case of the Channel1, write the contents of the Switch1 and the Switch2 to the Switch3 and the Switch4.



3.4 Examples of Setting 4

The system is set as below.

Details		ТОР	MELSEC-Q Series	Remark
Serial level (port/cha	nnel)	RS-232C (COM2)	RS-232 Channel 2(CH 2)	User settings
Address(PLC Address	5)	_	0	User settings
Serial baud rate	[BPS]	384	User settings	
Serial data bit	[Bit]	8	User settings	
Serial stop bit	[Bit]	1	User settings	
Serial parity bit	[Bit]	NO	User settings	
MC Protocol		FORMAT 5(4C FRAMI	User settings	

(1) XDesignerPlus setup

After setting the below details in [Project > Project Settings], download the set data into TOP tool.





Please set up using MELSEC series Ladder Software "GX Developer" as below. Please refer the PLC user manual for more detailed information if you need.

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If you use "QJ71C24" or "QJ71C24-R2" communication card, please set the total sum of communication speed of channel 1(CH1), channel 2(CH2) less than **115200[BPS]**.

1. From "GX Developer" project window, double click [Parameter] > [PLC parameter] to pop up [Q parameter setting] Dialog Box.

2. Please select [I/O Assignment] tab in the [Q parameter setting] Dialog Box.

3. Please set the [type], which the communication module is installed, to "Intelligent" from [I/O Assignment(*)] box.

- 3	Slot	Тур	е	Model name	Points		StartXY	•	
0	PLC	PLC	-			-			Switch setting
1	0(*-0)	Intelli.	-		32points	+			Detailed eattin
2	1(*-1)		-			+			Detailed Settin
3	2(*-2)		-			+			
4	3(*-3)		-			+			
5	4(*-4)		-			+			
6	5(*-5)		-			+			
7.	ler» en	the L/O ar	Idress i	s not necessaru :	as the CPIL	dãe	s it auto	maticallu	

Leaving this setting blank will not cause an error to occur,

(caution) The picture above is when communication module is installed at slot number 0.

4. Click [Switch setting] and set up as below on the pop up window.

Sw	Switch setting for I/O and intelligent function module									
						Inpu	ut format	HEX,	•	
	Slot	Type	Model name	Switch 1	Switch 2	Switch 3	Switch 4	Switch 5	•	
0	PLC	PLC								
1	0(*-0)	Intelli.]	09E2	0005	0000		
2	1(*-1)				1					
3	2(*-2)				1]]			
4	3(*-3)]]]			
5	4(*-4)]]			
6	5(*-5)			1			[]			
7	6(*-6)									
8	7(*-7)									
9	8(*-8)]]			
10	9(*-9)]			
11	10(*-10)									
12	11(*-11)									
13	12(*-12)									
14	13(*-13)								-0	
15	14(*-14)								•	
			E	nd	Ca	ncel				

Switch	Setting value	Setting details			
	05E2	9600 / 8 / 1 / NONE			
Curitale 1	07E2	19200 / 8 / 1 / NONE			
Switch 1	09E2	38400 / 8 / 1 / NONE			
	OBE2	115200 / 8 / 1 / NONE			
Switch 2	5	FORMAT 5(4C FRAME FORMAT5 BINARY)			
Curitale E	0	Set to "0" on address of Communication module			
Switch 5	0	(Channel 1, Channel 2).			

In case of the Channel1, write the contents of the Switch1 and the Switch2 to the Switch3 and the Switch4.

X Recommend the example of the setting contents



3.5 Examples of Setting 5

The system is set as below.

Details		ТОР	MELSEC-Q Series	Remark
Serial level (port/chan	nel)	RS-422 (4 wire, COM2)	RS-422 Channel 2(CH 2)	User settings
Address(PLC Address)		_	0	User settings
Serial baud rate	[BPS]	384	User settings	
Serial data bit	[Bit]	8	User settings	
Serial stop bit	[Bit]	1	User settings	
Serial parity bit	[Bit]	NOI	User settings	
MC Protocol	ł	FORMAT 5(4C FRAM	User settings	

(1) XDesignerPlus setup

After setting the below details in [Project > Project Settings], download the detailed settings using TOP tool.





Please set up using MELSEC series Ladder Software "GX Developer" as below. Please refer the PLC user manual for more detailed information if you need.

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If you use "QJ71C24" or "QJ71C24-R2" communication card, please set the total sum of communication speed of channel 1(CH1), channel 2(CH2) less than **115200[BPS]**.

1. From "GX Developer" project window, double click [Parameter] > [PLC parameter] to pop up [Q parameter setting] Dialog Box.

2. Please select [I/O Assignment] tab in the [Q parameter setting] Dialog Box.

3. Please set the [type], which the communication module is installed, to "Intelligent" from [I/O Assignment(*)] box.

	Slot	Тур	е	Model name	Points		StartXY	*	
0	PLC	PLC	-			-			Switch settin
1	0(*-0)	Intelli.	-		32points	+			Detailed eattin
2	1(*-1)		-			+			Detailed Settin
3	2(*-2)		-			+			
4	3(*-3)		-			+			
5	4(*-4)		-			+			
6	5(*-5)		-			-			
7		the L/O ar	Idrage i	e not nacacearu	as the CPIL	doo	e it auto	matical	h

Leaving this setting blank will not cause an error to occur,

(caution) The picture above is when communication module is installed at slot number 0.

4. Click [Switch setting] and set up as below on the pop up window.

Sw	Switch setting for I/O and intelligent function module									
						Inpu	ut format	HEX,	•	
	Slot	Type	Model name	Switch 1	Switch 2	Switch 3	Switch 4	Switch 5	•	
0	PLC	PLC								
1	0(*-0)	Intelli.]	09E2	0005	0000		
2	1(*-1)				1					
3	2(*-2)				1]]			
4	3(*-3)]]			
5	4(*-4)]]			
6	5(*-5)			1			[]			
7	6(*-6)									
8	7(*-7)									
9	8(*-8)]]]			
10	9(*-9)]			
11	10(*-10)									
12	11(*-11)									
13	12(*-12)									
14	13(*-13)								-0	
15	14(*-14)								•	
			E	nd	Ca	ncel				

Switch	Setting value	Setting details			
	05E2	9600 / 8 / 1 / NONE			
Curitale 1	07E2	19200 / 8 / 1 / NONE			
Switch 1	09E2	38400 / 8 / 1 / NONE			
	OBE2	115200 / 8 / 1 / NONE			
Switch 2	5	FORMAT 5(4C FRAME FORMAT5 BINARY)			
Curitale E	0	Set to "0" on address of Communication module			
Switch 5	0	(Channel 1, Channel 2).			

In case of the Channel1, write the contents of the Switch1 and the Switch2 to the Switch3 and the Switch4.

X Recommend the example of the setting contents



3.6 Examples of Setting 6

The system is set as below.

Details		ТОР	MELSEC-Q Series	Remark
Serial level (port/cha	nnel)	RS-485 (2 wire, COM2)	RS-485 Channel 2(CH 2)	User settings
Address(PLC Address	5)	_	0	User settings
Serial baud rate	[BPS]	384	00	User settings
Serial data bit	[Bit]	8		User settings
Serial stop bit	[Bit]	1		User settings
Serial parity bit	[Bit]	NOI	NE	User settings
MC Protocol		FORMAT 5(4C FRAM	E FORMAT5 BINARY)	User settings

(1) XDesignerPlus setup

After setting the below details in [Project > Project Settings], download the detailed settings using TOP tool.





Please set up using MELSEC series Ladder Software "GX Developer" as below. Please refer the PLC user manual for more detailed information if you need.

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If you use "QJ71C24" or "QJ71C24-R2" communication card, please set the total sum of communication speed of channel 1(CH1), channel 2(CH2) less than **115200[BPS]**.

1. From "GX Developer" project window, double click [Parameter] > [PLC parameter] to pop up [Q parameter setting] Dialog Box.

2. Please select [I/O Assignment] tab in the [Q parameter setting] Dialog Box.

3. Please set the [type], which the communication module is installed, to "Intelligent" from [I/O Assignment(*)] box.

- 3	Slot	Тур	е	Model name	Points		StartXY	•	
0	PLC	PLC	-			-			Switch setting
1	0(*-0)	Intelli.	-		32points	+			Detailed eattin
2	1(*-1)		-			+			Detailed Settin
3	2(*-2)		-			+			
4	3(*-3)		-			+			
5	4(*-4)		-			+			
6	5(*-5)		-			+			
7.	ler» en	the L/O ar	Idress i	s not necessaru :	as the CPII	dãe	s it auto	maticallu	

Leaving this setting blank will not cause an error to occur,

(caution) The picture above is when communication module is installed at slot number 0.

4. Click [Switch setting] and set up as below on the pop up window.

Sw	itch set	ting for 1/0	and intelligen	t functio	n modu	le				
						Inpu	it format	HEX.	•	
	Slot	Type	Model name	Switch 1	Switch 2	Switch 3	Switch 4	Switch 5 🔺	n i i i i i i i i i i i i i i i i i i i	
0	PLC	PLC								
1	0(*-0)	Intelli.			Q	09E2	0005	0000		
2	1(*-1)				1					
3	2(*-2)			1						
4	3(*-3)				1					
5	4(*-4)				1					
6	5(*-5)			1]					
7	6(*-6)									
8	7(*-7)				5					
9	8(*-8)			_	-					
10	9(*-9)			_	-					
11	10(*-10)	-			5					
12	11(*-11)	-			5					
13	12(*-12)				5					
14	13(*-13)				5					
15	[14[*-14]		1					•	h	
			<u>E</u>	nd	Ca	ncel				

Switch	Setting value	Setting details
Switch 1	05E2	9600 / 8 / 1 / NONE
	07E2	19200 / 8 / 1 / NONE
	09E2	38400 / 8 / 1 / NONE
	OBE2	115200 / 8 / 1 / NONE
Switch 2	5	FORMAT 5(4C FRAME FORMAT5 BINARY)
Curitale E	0	Set to "0" on address of Communication module
Switch 5	0	(Channel 1, Channel 2).

In case of the Channel1, write the contents of the Switch1 and the Switch2 to the Switch3 and the Switch4.

X Recommend the example of the setting contents



4. Communication settings details

Communication settings are available at XDesignerPlus or TOP main menu. Communication settings must be identical with the external devices.

4.1 XDesignerPlus settings details

	Set the communicati	on interface of TOP	tool.		
	- From right windo	ow (HMI Setup > ch	eck Use HMI Setup	> Device Manage	er 1
E COM2 (1)	HMI Setup Sepcial Buf	fer Sync			
PLC1 · MELSEC-O Serie	P Use HMI Setue				
COM1 (0)	v use him setup				
Ethernet (0)	System Setup PLC Se	tup Device Manager * Com	Interface		
FieldBus (0)		Con	. coup		
USB Device (0)	+ COM 1	38400 -	+ COM 2	38400	
E CF Card Setting	- Douo Rale .	30400 +	- Doug Rale .	35400	100
CFCard	- Data Bit :	•	- Data Bit :	0	
	- Stop Bit :	1	- Stop Bit :	1	
	- Parity Bit :	None 👻	- Parity Bit :	None	•
			- Signal Level :	RS-232C	•
	HMI Setup Sepcial Buf	fer Sync			
	HMI Setup Sepcial Buf	fer Sync			
	HMI Setup Sepcial Buf	tup Device Manager (PLC1) MELSEC-Q Se	Interface Interf	format5)	
	HMI Setup Sepcial Buf	tup Device Manager (PLC1) MELSEC-Q Se	Interface rries SERIAL(QJ71C24,F	Format5)	
	HMI Setup Sepcial Buf Use HMI Setup System Setup PLC Se PLC Station Number : Time Out :	tup Device Manager ((PLC1) MELSEC-Q Se	Interface Interface Priva Secup	Format5)	
	HMI Setup Sepcial Buf Use HMI Setup System Setup PLC Se PLC Station Number : Time Out : Wait before send :	tup Device Manager ((PLC1) MELSEC-Q Se 0 1000 msec. 0 msec.	Interface rries SERIAL(QJ71C24,F	format5)	
	HMI Setup Sepcial Buf Use HMI Setup System Setup PLC Se PLC Station Number : Time Out : Wait before send : External device se	tup Device Manager ((PLC1) MELSEC-Q Se 0 1000 msec. 0 tup Device Manager (msec.	Interface Interface Priva Secup	Format5)	
	HMI Setup Sepcial Buf Use HMI Setup System Setup PLC Se PLC Station Number : Time Out : Wait before send : External device se This sets the commu	tup Device Manager ((PLC1) MELSEC-Q Se 0 1000 msec. 0 ettings inication driver of "M	Interface Interf	Format5) IAL(QJ71C24, Form	mat5)".
	HMI Setup Sepcial Buf Use HMI Setup System Setup PLC Se PLC Station Number : Time Out : Wait before send : External device se This sets the commu	tup Device Manager (PLC1) MELSEC-Q Se 0 1000 msec. 0 msec. ettings inication driver of "M	Interface Pries SERIAL(QJ71C24,F 1ELSEC-Q Series SER LC Comm Info	Format5) IAL(QJ71C24, Form	mat5)".
	HMI Setup Sepcial Buf Use HMI Setup System Setup PLC Se PLC Station Number : Time Out : Wait before send : External device se This sets the commu	tup Device Manager ((PLC1) MELSEC-Q Se 0 1000 msec. 0 msec. ettings inication driver of "N Pl	Interface Pries SERIAL(QJ71C24,F 1ELSEC-Q Series SER LC Comm Info	Format5)	mat5)".

■ Communication Interface Settings

Details	Contents
Signal level	External device - select serial communication method between TOPs. (COM1 supplies RS-232C
	only)
Baud rate	External device – select serial communication speed between TOPs.
Data bit	External device – select serial communication data bit between TOPs.
Stop bit	External device – select serial communication stop bit between TOPs.
Parity bit	External device – select serial communication parity bit check method between TOPs.
Time out [x100 mSec]	Set up TOP's waiting time from external device at [0 - 5000] x 1mSec.
Transmitting Delay Time	Set up TOP's waiting time between response receiving - next command request transmission from
[x10 mSec]	external device at [0 – 5000] x 1 mSec.
Receiving Wait Time	
[x10 mSec]	
PLC address [0~65535]	Address of other device. Select between [0 - 65535].



4.2 TOP main menu setup item

- When a buzzer is on during the power reset, touch 1 spot at the upper LCD to move to "TOP Management Main" display.

- Set up driver interface at TOF	P according to below Step1 \rightarrow Step2.	
(Press "TOP COM 2/1 setup"	in Step 1 to change setup at Step 2.)	



Step 1. [PLC setup] - Setup driver interface.

PLC setup		
PLC Address : 00		Communication Interface
Timeout : 1000 [mSec]		Settings
Delay time of transmission : 0 [mSec]		
TOP COM 2/1 : RS-232C , 38400 , 8 ,	1 , NONE	
TOP COM 2/1 setup communicat	ion test	
Step 1-Reference.		
Details	Contents	

PLC address [0~65535]	Address of other device. Select between [0 - 65535].
Timeout [x1 mSec]	Set up TOP's waiting time from external device at [0 - 5000] x 1mSec.
Delay time of transmission [Set up TOP's waiting time between response receiving - next command request transmission
x1 mSec]	from external device at [0 – 5000] x 1 mSec.
TOP COM 2/1	TOP's Interface setup to external device.

Step 2. [PLC setup] > [TOP COM2/COM1 setup] - Setup relevant port's serial parameter.

Port Settings	
* Serial communication	COM 1 Port
+ COM-1 Port	Communication Interface
- Baud rate : 38400 [BPS]	Settings
- Data bit : 8 [BIT]	
- Stop bit : 1 [BIT]	
- Parity bit : NONE [BIT]	
- Signal level : RS – 232C	
+ COM-2 Port	COM-2 Port
- Baud rate : 38400 [BPS]	Communication Interface
- Data bit : 8 [BIT]	Settings
- Stop bit : 1 [BIT]	
- Parity bit : NONE [BIT]	
- Signal level : RS – 232C	
Step 2–Reference.	

Step 2-Reference.	
Details	Contents
Baud rate	External device – select serial communication speed between TOPs.
Data bit	External device – select serial communication data bit between TOPs.
Stop bit	External device – select serial communication stop bit between TOPs.
Parity bit	External device – select serial communication parity bit check method between TOPs.
Signal level	External device – select serial communication method between TOPs.



4.3 Communication diagnosis

TOP – Confirming interface setting condition between external devices and TOP

- Move to Menu by clicking the top side of LCD screen as resetting the power of TOP.

- Confirms if Port [COM 2 or COM 1] setting that is willing to use in [Communication Settings] matches with the setting of external devices.

external devices.

Port Communication Issue Diagnosis

- PLC Setup > TOP [COM 2 or COM 1] click "Communication Diagnosis" button.

- Diagnosis dialog box will pop up on the screen, you can judge by following informations that are shown on box no. 3 section.

OK!	Communication setting succeeded
Time Out Error!	Communication setting error
	- Error in the setting situation of Cable and TOP / External device
	(reference : Communication Diagnosis sheet)

■ Communication Diagnosis Sheet

- Please refer to the information below if you have a problem between external devices and communication connection.

Designer Version		O.S Versio	on				
Details	Contents					Con	ıfirm
System configuration	Name of CPU					ОК	NG
	Name of confront port that communicating	is				ОК	NG
	System Connection Method	1:1	1:	N	N:1	OK	NG
Connection Cable	Name of Cable		1			ОК	NG
PLC setup	Setup address					ОК	NG
	Serial baud rate			[BPS]	ОК	NG
	Serial data bit			[BIT]	ОК	NG
	Serial Stop bit			[BIT]	ОК	NG
	Serial parity bit			[BIT]	ОК	NG
	Assigned Address Limit					ОК	NG
TOP setup	Setup port	COM 1			COM 2	ОК	NG
	Name of Driver					ОК	NG
	Confront Address	Project Property	/ Setup			ОК	NG
		Diagnosing Cor	nmunicat	ion		ОК	NG
	Serial baud rate			[BPS]	ОК	NG
	Serial data bit			[BIT]	ОК	NG
	Serial Stop bit			[BIT]	ОК	NG
	Serial parity bit			[BIT]	ОК	NG



5. Cab

This Chapter is to introduce the Cable diagram for readar communication between TOP and relative devices. (Cable diagram that are being introduced in this chapter might differ from suggestions of "Mitsubishi Electric Corporation".)

5.1 Cable diagram 1

■ 1 : 1 Connection

(A) XTOP CO	OM 2 Port ((9 pin)				
XTOP	COM2				Pl	.C
pin arangement * caution 1)	Name of Signal	Pin Number	Cable Connection	Pin Number	Name of Signal	pin arangement * caution 1)
	CD	1		1	CD	
1 5	RD	2		2	RD	5 1
(° °)	SD	3		3	SD	
	DTR	4		4	DTR	9 6
Eront View of	SG 5	5		5 SG	Front View of	
D-SUB 9 Pin male	DSR	6		6	DSR	D-SUB 9 Pin
(Male convex)	RTS	7		7	RTS	(male convex)
(Male, Convex)	CTS	8		8	CTS	(male, convex)
		9		9		

*Caution1) Pin arrangement is shown from connecting face in cable connection connecter.

(B) XTOP COM 2 Port (15 pin)

XTOP COM2				PLC			
pin arangement * caution 1)	Name of Signal	Pin Number	Cable Connection	Pin Number	Name of Signal	pin arangement * caution 1)	
	CD	1		1	CD		
1 8	RD	2		2	RD	5 1	
Õ Õ	SD	3		3	SD	0 0	
6 0	DTR	4		4	DTR		
9 15	SG	5		5	SG	9 6	
Front View of	DSR	6		6	DSR	Front View of	
D-SUB 9 Pin	RTS	7		7	RTS	D-SUB 9 Pin	
(male, convex)	CTS	8		8	CTS	(male, convex)	
		9		9			

*Caution1) Pin arrangement is shown from connecting face in cable connection connecter.

XTOP/ATOP COM 1 Port				PLC			
pin arangement * caution 1)	Name of Signal	Pin Number	Cable Connection	Pin Number	Name of Signal	pin arangement * caution 1)	
Λ		1		1	CD		
6 7 2	RD	2	• •	2	RD	5 1	
$\begin{pmatrix} \circ & \circ \end{pmatrix}$	SG	3	• •	3	SD	00	
		4		4	DTR		
5 0 1		5	•	5	SG	9 6	
3 Front View of	SD	6	•	6	DSR	Front View of	
D-SLIB 6 Pin				7	RTS	D-SOR 9 Pin	
(male convex)				8	CTS	(male, convex)	
(maie, convex)				9			

(C) XTOP/ATOP COM 1 Port (6 Pin)



*Caution1) Pin arrangement is shown from connecting face in cable connection connecter.



5.2 Cable diagram 2



■ 1:1 Connection

(A) XTOP COM 2 Port (9 pin)

XTOP COM2				PLC		
pin arangement * caution 1)	Signal	Pin	Cable Connection	Signal	Pin Arrangement	
	RDA	1		SDA		
		2	•	SDB		
<u>1 5</u>		3	•	RDA	RDA RDB SG (FG)→	
6 9 Front View of D-SUB 9 Pin (Male, convex)	RDB	4	•	RDB		
	SG	5		SG		
	SDA	6				
		7				
		8				
	SDB	9				

*Caution1) Pin arrangement is shown from connecting face in cable connection connecter.

(B) XTOP/ATOP COM 2 Port (15 Pin)



*Caution1) Pin arrangement is shown from connecting face in cable connection connecter.



(C) ATOP COM 2 Port (5 Pin Terminal)

XTOP COM2		Cable Connection	PLC		
pin arangement * caution 1)	Signal		Pin	Pin Arrangement	
	RDA		SDA		
	RDB		SDB		
	SDA		RDA		
	SDB		RDB		
Front View of	SG		SG		
Terminal Block 5 Pin					

*Caution1) Pin arrangement is shown from connecting face in cable connection connecter.

■ 1 : N Connection - Please connect referring to 1:1 connection as below.

TOP	Cable Connection and Signal	PLC	Cable Connection and Signal	PLC
Name of Signal	Direction	Name of Signal	Direction	Name of Signal
RDA		SDA		SDA
RDB		SDB		SDB
SDA		RDA		RDA
SDB		RDB		RDB
SG		SG		SG



5.3 Cable Table 3

■ 1:1 Connection

(A) XTOP CO	OM 2 Port ((9 pin)				
XTOP	COM2			PLC		
pin arangement * caution 1)	Signal	Pin	Cable Connection	Signal	Pin Arrangement	
1 5 O O O O 6 9 Front View of D-SUB 9 Pin (Male, convex)	RDA RDB SG SDA SDB	1 2 3 4 5 6 7 8 9		SDA SDB RDA RDB SG	SDA SDB RDA RDB SG (FG)	

*Caution1) Pin arrangement is shown from connecting face in cable connection connecter.



*Caution1) Pin arrangement is shown from connecting face in cable connection connecter.



ATOP COM2		Cable Connection	PLC		
pin arangement * caution 1)	Signal		Signal	Pin Arrangement	
Front View of	RDA RDB		SDA SDB	SDA SDB RDA RDB SG	
Terminal Block 5 Pin	SDA		RDA		
	SDB		RDB		
	SG		SG		





*Caution1) Pin arrangement is shown from connecting face in cable connection connecter.

\blacksquare 1 : N / N : 1 Connection - Please connect referring to 1:1 connection as below.





6. Support address

Devices that are usable with TOP is as below.

There might be difference in the range of device (address) by type / series of CPU module TOP series supports the maximum address range that external device series use Please refer each CPU module user manual carefully for devices that you desired to use to prevent not getting out of range.

Device	Bit Address	Word Address	Word Address NOTE	32 BIT
Input Relay	X0000 - X1FFF (HEX)	X0000 - X1FF0 (HEX)	X***0 *caution1)	
Output Relay	Y0000 - Y1FFF (HEX)	Y0000 - Y1FF0 (HEX)	Y***0 *caution1)	
Internal Relay	M0000 - M32767	M0000 - M32752	M0000 + 16*n *caution2)	1
Special Relay	SM0000 - SM2047	SM0000 - SM2032	SM0000+16*n *caution2)	1
Latch Relay	L0000 - L32767	L0000 - L32752	L0000 + 16*n *caution2)	1
Annunciator	F0000 - F32767	F0000 - F32752	F0000 + 16*n *caution2)]
Edge Relay	V0000 - V32767	V0000 - V32752	V0000 + 16*n *caution2)]
Step Relay	S0000 - S8191	S0000 - S8176	S0000 + 16*n *caution2)]
Link Relay	B0000 - B7FFF (HEX)	B0000 - B7FF0 (HEX)	B***0 *caution1)	1
Special Link Relay	SB000 - SB7FF (HEX)	SB000 - SB7F0 (HEX)	SB***0 *caution1)	1
Timer	TC00000 TC00007			1
(contact)	1500000 - 1523087			
Timer	TC00000 TC22007			
(coil)	100000 - 1023087			
Aggregate Timer	500000 550007]
(contact)	5500000 - 5523087			L/H
Aggregate Timer	CC00000 CC22087			*caution3)
(coil)	SC00000 - SC23087			
Counter	CC00000 CC22087			
(contact)	CS00000 - CS23087			
Counter	CC00000 CC0007			
(coil)	CC00000 - CC23087			
Timer				
(current value)		1100000 - 11025067		
Aggregate Timer				
(current value)		SINUUUUU - SIN25087		
Counter				
(current value)		CINUUUUU - CIN23087		
Data Register		D00000 - D25983]
Special Data				
Register		SDUUUU - SD2U4/		
File Register		☞User Defined Range		

*Caution1) If the bit address is hexadecimal number '0~F', starting bit 0 bit shall be used as word address.

*Caution2) If the bit address is decimal number, it shall be used as word address by every value of '16'.

*Caution3) The address will be saved where the 16BIT data which is subordinate to 32BIT data monitor registered and super ordinate 16BIT data will be saved right after the address that is monitor registered.

Ex) If 32BIT data, hexadecimal data 12345678 is saved to the address number D00100, it shall be saved with 16BIT device address as below.

Details	32BIT	16BIT		
Address	D00100	D00100	D00101	
Input data (Hexadecimal Number)	12345678	5678	1234	