MITSUBISHI Electric Corporation MELSEC-AnN(AnS/AOJ2H) Series CPU Direct Driver

Compatibl OS e version XDesignerPlus

V4.0 or higher Plus 4.0.0.0 or higher

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

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

Please choose proper system referring to this point.

2. Selecting TOP model

and external devices

Page 3

Select TOP model 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

Page 5

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 8

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 / 12

referring to this chapter.



1. System configuration

The System configuration of TOP and MITSUBISHI Electric Corporation – MELSEC-AnN(AnS/AOJ2H) Series CPU Direct" is as below.

Series	CPU	Link I/F	Method	System settings	Cable
MELSEC-A	AnS AOJ2H	CPU Direct	RS-232C	3.1 Configuration Exercise 1 (page 4)	

Connection configuration

• 1:1 connection (TOP 1 vs. external device)





2. Selecting TOP model and external devices

Select the external devices to connect to TOP.

			HMI / PLC Uint		
Series	XTOP Series		Vendor MITSUBISHI Electric Corporation		
Model	XTOP15TX-SA/	SD	PLC Model MELSEC-AnN(AnS,A0J2H) Series CPU Direct		
		- 07	PLC		
	Vendor		Model		
M2I Corporat	ion	*	CC-LINK(Remote Device Station)		
MITSUBISHI B	Electric Corporation		MELSEC-A Series ETHERNET		
OMRON Indu	strial Automation		MELSEC-AnA Series Computer Link		
LS Industrial	Systems		MELSEC-AnA(A2A/A3A) Series CPU Direct		
MODBUS Or	ganization		MELSEC-AnA(A2U/A3U/A4U/A2US/A2USH) Series CPU Direct		
SIEMENS AG		HI.	MELSEC-AnN (A0J2) Series CPU Direct		
Rockwell Au	tomation (AB)		MELSEC-AnN (A2N,A3N) Series CPU Direct		
GE Fanuc Automation			MELSEC-AnN Series Computer Link		
PANASONIC Electric Works			MELSEC-AnN(AnS,A0J2H) Series CPU Direct		
YASKAWA I	Electric Corporation		MELSEC-FX Series CPU Direct		
YOKOGAWA	Electric Corporatio		MELSEC-FX Series Computer Link		
Schneider El	ectric Industries		MELSEC-FX Series Positioning Controller - FX2N-10/20GM		
KDT Systems	3		MELSEC-Q (UDE Type) Series CPU ETHERNET		
RS Automatio	on(SAMSUNG)		MELSEC-Q Series CPU Direct		
HITACHI IES			MELSEC-Q Series ETHERNET(QJ71E71)		
FATEK Autor	mation Corporation		MELSEC-Q Series SERIAL(QJ71C24,Format1)		
DELTA Electr	ronics		MELSEC-Q Series SERIAL(QJ71C24,Format5)		
KOYO Electr	onic Industries		MELSEC-Q(00CPU/01CPU) Series CPU Direct		
VIGOR Electr	ric Corporation		MELSEC-Q(00JCPU) Series CPU Direct		
Comfile Tech	nology		MELSERVO-J2 Series		
Dongbu(DAS	AROBOT)		MELSERVO-J3 Series		
ROBOSTAR		×			

Setting details			Contents	
ТОР		Select the name of a TOP series t	hat is to be connected to PLC.	
		Before downloading the settings, install the OS version specified in the table be		n the table below according to
	Series	TOP series.		_
		Series	Version name	
		XTOP / HTOP	V4.0	_
	Name	Select the model name of TOP product.		
		Select the manufacturer of extern	al devices to be connected to TC	DP.
	Manufacturer	Please Choose "MITSUBISHI Electric Corporation".		
External device		Select the model series of externa	al devices to be connected to TO	P.
External device		Please select "MELSEC-AnN(AnS/A	AOJ2H) Series CPU Direct".	
	PLC	Please check, in the "1. System co	onfiguration", if the relevant exte	rnal device is available to set a
		system configuration.		



3. Example of system settings

Regarding of Communication Interface Configuration in TOP and MELSEC-AnN(AnS/AOJ2H) Series CPU Direct, We suggest as below.

3.1 Example of settings 1

The system is set as below.

Details		ТОР	MELSEC-AnN(AnS/AOJ2H) Series	Remark
Serial level (port/channel)		RS-232C (COM2)	RS-232C	Fixed
Serial baud rate	[BPS]		9600	Fixed
Serial data bit	[Bit]		8	Fixed
Serial stop bit	[Bit]		1	Fixed
Serial parity bit	[Bit]		ODD	Fixed

(1) XDesignerPlus setup

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

Ė. COM2 (1)	HMI Setup Sepcial	Buffer Sync			
PLC1 : MELSEC-AnN(Ar	Use HMI Setup				
COM1 (0) Ethernet (0)	System Setup PLC	Setup Device Mana	ger Interface		
FieldBus (0)		* Comn	nunication Port		
USB Device (0)	+ COM 1		+ COM 2		
F Card Setting	- Boud Rate :	9600 👻	- Boud Rate :	9600	
CFCard	- Data Bit :	8 👻	- Data Bit :	8	•
	- Stop Bit :	1 🔹	- Stop Bit :	1	.
	- Parity Bit :	Odd 👻	- Parity Bit :	Odd	3.
	20.4 07 22 02 02 02 02		- Signal Level :	RS-232C	
		-			
	This sets the optio Direct".	n of Communicatio	on Driver in <u>"MEL</u> PLC Comm In	SEC-AnN(AnS/)	AOJ2H) Ser
	This sets the optio <u>Direct".</u>	n of Communicatio	on Driver in <u>"MEL</u> PLC Comm In	SEC-AnN(AnS/)	AOJ2H) Seri
	This sets the optio <u>Direct".</u> Station Number	PLC) 0	on Driver in <u>"MEI</u> PLC Comm In	SEC-AnN(AnS//	AOJ2H) Seri

(2) External device settings

MELSEC-AnN(AnS/AOJ2H) Series CPU Port Communication Interface is fixed as this example's preferred setting value.



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 communication	n interface of TOP too	ol. Turo HMI So	tun > Dovico r	managor 1
PLC Setting			USE HIVII SE		nanayer j
E COM2 (1)	HMI Setup Sepcial B	utter Sync			
COM1 (0)	Use HMI Setup				
Ethernet (0)	System Setup PLC	Setup Device Manage	r Interface	5	
- FieldBus (0)		* Communicat	ion Port	n	
USB Device (0)	+ COM 1	+ CC	IM 2		
CF Card Setting	- Boud Rate :	9600 💌 - Bo	ud Rate :	9600	
CFCard	- Data Bit :	8 🔹 - Dai	a Bit :	8	-
	- Stop Bit :	1 - Sto	p Bit :	1	
	- Parity Bit :	Odd 🔹 - Par	ity Bit :	Odd	8.
		- Sig	nal Level :	RS-232C	<u>.</u>
	Se HMI Setup				
	Suptom Sotup BLC	Setup	aar Interface		
		(DLC1) MELSEC ApN			
		(PLCI) MELSEC-ANN	(AZIN, ASIN) SE	nes ceo birect	
	PLC Station Number :	0 🗘			
	Time Out :	1000 🗘 msec.			
	Wait before send :	0 🗘 msec.			
	Wait before send : External device sett	0 🗘 msec.			
	Wait before send : External device sett Set the option of Com	0 msec.	"MELSEC-Ann	I(AnS/AOI2H)	Series (PIII
	Wait before send : ■ External device sett Set the option of Com		"MELSEC-AnN	I(AnS/AOJ2H)	Series CPU I
	Wait before send : ■ External device set Set the option of Com	0 msec.	"MELSEC-AnN .C Comm Info	I(AnS/AOJ2H)	Series CPU I
	Wait before send : External device sett Set the option of Com	0 \$ msec. tings nmunication Driver in Pl	"MELSEC-AnN C Comm Info	I(AnS/AOJ2H)	Series CPU I
	Wait before send : External device sett Set the option of Com Station Number(PLC)	0 \$ msec. tings nmunication Driver in PL	"MELSEC-AnN C Comm Info	I(AnS/AOJ2H)	Series CPU I
	Wait before send : External device set Set the option of Com Station Number(PLC) Connection Type	0	"MELSEC-AnN .C Comm Info	I(AnS/AOJ2H)	Series CPU I

Communication Interface Settings

Details	Contents
Circuit Invel	External device - select serial communication method between TOPs. (COM1 supplies RS-232C
Signal level	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 [
x10 mSec]	Set up TOP's waiting time between response receiving – next command request transmission from
Receiving Wait Time [x10	external device at [0 – 5000] x 1 mSec.
mSec]	
PLC address [0~65535]	Address of other device. Select between [0 - 65535].

	CEEDEI
10	~655351





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 TOP 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	
Timeout : 1000 [mSec]		Interface Settings	
Delay time of transmission : 0 [mSec]		
TOP COM 2/1 : RS - 232C , 9600 , 8 , 1 , ODD TOP COM 2/1 setup communication test			
Step 1-Reference.			
Details	Contents		
PLC address [0~65535] [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 c	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 serial parameter of relevant port.

Port Settings	
* Serial communication	COM 1 Port
+ COM-1 Port	Communication
- Baud rate : 9600 [BPS]	Interface Settings
- Data bit : 8 [BIT]	
- Stop bit : 1 [BIT]	
- Parity Beat : ODD [BIT]	
- Signal level : RS – 232C	
+ COM-2 Port	COM-2 Port
- Baud rate : 9600 [BPS]	Communication
- Data bit : 8 [BIT]	Interface Settings
- Stop bit : 1 [BIT]	
- Parity Beat : ODD [BIT]	
- Signal level : RS – 232C	

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

- 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.

Port Communication Issue Diagnosis

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

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

OK!	Communication setting normal			
Time Out Error!	abnormal Communication setting			
	- 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 Version

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Details	Contents				Con	nfirm	
System configuration	Name of CPU					ОК	NG
	Name of confront port that is communicating					ОК	NG
	System Connection Method	1:1	1:	N	N:1	ОК	NG
Connection Cable	Name of Cable					ОК	NG
PLC setup	Setup address					ОК	NG
	Serial baud rate			[B	PS]	ОК	NG
	Serial data bit			[B	IT]	ОК	NG
	Serial Stop bit			[B	IT]	ОК	NG
	Serial parity bit			[B	IT]	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	
		When Diagnosing Communication		ОК	NG		
	Serial baud rate			[B	PS]	ОК	NG
	Serial data bit			[B	IT]	ОК	NG
	Serial Stop bit			[B	IT]	ОК	NG
	Serial parity bit			[B	IT]	ОК	NG



5. Cable diagram

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

5.1 Cable diagram 1



■ If the cable needs to be changed from 9 pin D-SUB to 15 pin, please refer to information below.

XTOP COM2			Cable cross section		
pin arrangement * caution 1)	Pin Arrangement	Cable connection	Cable color		
	1		Red		
	2		Yellow	-	
1 5 0 0 6 9 Based on the front side of Communication cable connecter D-SUB 9 Pin male	3	•	Green	→Q	
	4		Blue		
	5		White	TOP422C Exclusive Cable 25pin	
	6		Black		
	7				
	8				
	9				

(1) In case of TOP COM 2 side is 9 pin

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



(2) If TOP COM 2 is 15 pin (10~15 pin is skipped due to non use)



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



6. Support address

Devices that are usable with TOP are 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 to each CPU module user manual carefully for devices that you desired to use to prevent not getting out of range.

Туре	Remark	Bit designated address	Word designated address
Input	Bit	X0000 - X07FF	X0000 - X07F0
Output	Bit	Y0000 - Y07FF	Y0000 - Y07F0
Link relay	Bit	B0000 - B03FF	
Link register	Word		W0000 - W03FF
Special relay	Bit	F0000 - F0255	F0000 - F0240
Latch Relay	Bit	L0000 - L2047	
Internal Relay	Bit	M0000 - M2047	M0000 - M2032
Special relay	Bit	M9000 - M9255	M9000 - M9240
Data Register	Word		D0000 - D1023
Timer-Coil	Bit	TC000 - TC255	
Timer-Current	Word		TN000 - TN255
Timer-Point	Bit	TS000 - TS255	
Counter-Coil	Bit	CC000 - CC255	
Counter-Current	Word		CN000 - CN255
Counter-Point	Bit	CS000 - CS255	