IAI Corporation

X-SEL Controller

Supported version TOP Design Studio

V1.4.9.85 or higher



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We want to thank our customers who use the Touch Operation Panel.

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Describes how to set up communication for external devices.

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Describes the cable specifications required for connection.

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Refer to this section to check the addresses which can communicate with an external device.



1. System configuration

The system configuration of TOP and "X-SEL Controller" is as follows:

Series	СРИ	Link I/F	Communication method	System setting	Cable
	X-SEL Series		RS-232C	<u>3.1 Settings example 1</u> (<u>Page 4)</u>	5.1. Cable table 1 (Page 9)

Connectable configuration

• 1:1 connection





2. External device selection

■ Select a TOP model and a port, and then select an external device.

)м1]					
Filter : [All]			\sim		Search :	
Vendor		Model			0	0
IDEC Corporation	^	8	ROBO CYL	INDER (MODBU	S -CON,RC Series)	
HAWE HYDRAULIK		8	X-SEL Serie	s		
SEHAN Electools						
TOHO Electronics Inc.						
IAI Corporation						
МКР						
TEMCOLINE Co., Ltd.						
LINMOT						
CHINO Corporation						
KOLVER Srl						
SENGENUITY						
PELCO						
FASTECH Co., Ltd.						
HYOSUNG	~					
PLC Setting[X-SE	L Series]					
PLC Setting[X-SEI Alias Name :	L Series]					
PLC Setting[X-SEI Alias Name : Interface :	L Series] PLC1 Serial		~			
PLC Setting[X-SEI Alias Name : Interface : Protocol :	L Series] : PLC1 : Serial : Private Protoco	;ol	~		Cc	omm Manual
PLC Setting[X-SEI Alias Name : Interface : Protocol : String Save Mode :	L Series] : PLC1 : Serial : Private Protoco : First LH HL	ol Ch	→ → ange			omm Manual
PLC Setting[X-SEI Alias Name : Interface : Protocol : String Save Mode : Use Redundance	L Series] : PLC1 : Serial : Private Protoco : First LH HL : Y	ol Ch	→ → ange		Cc	omm Manual
PLC Setting[X-SEI Alias Name : Interface : Protocol : String Save Mode : Use Redundance Operate Condition : A Change Condition :	L Series] : PLC1 : Serial : Private Protoc : First LH HL Y ND TimeOut	ol Ch	ange (Second)		Cc	omm Manual
PLC Setting[X-SEI Alias Name : Interface : String Save Mode : Use Redundance Operate Condition : A Change Condition :	L Series] PLC1 Serial Private Protoco First LH HL Y ND TimeOut Condition	ol Ch	→ → ange (Second)		Co	omm Manual
PLC Setting[X-SEI Alias Name : Interface : String Save Mode : Use Redundance Operate Condition : Change Condition :	L Series] : PLC1 : Serial : Private Protoco : First LH HL Y ND TimeOut Condition	Ch	→ ange (Second)			omm Manual
PLC Setting[X-SEI Alias Name : Protocol : String Save Mode : Use Redundanc Operate Condition : Change Condition : Primary Option Timeout	L Series] : PLC1 : Serial : Private Protoco : First LH HL :Y ND : TimeOut : Condition	Ch	ange (Second)		Cc	omm Manual
PLC Setting[X-SEI Alias Name : Interface : String Save Mode : Use Redundanc Operate Condition : Change Condition : Primary Option Timeout Send Wait	L Series] PLC1 Serial Private Protoc First LH HL Y ND Condition 300	Ch 5] msec] msec	 ✓ ✓ ✓ (Second) 			mm Manual
PLC Setting[X-SEI Alias Name : Interface : String Save Mode : Use Redundanc Operate Condition : Change Condition : Primary Option Timeout Send Wait Retry	L Series] FLC1 Serial Private Protoc First LH HL Y Y Condition 300 S M	ol Ch] msec] msec	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓		Cc	omm Manual
PLC Setting[X-SEI Alias Name : Interface : String Save Mode : Use Redundance Operate Condition : A Change Condition : A Primary Option Timeout Send Wait Retry	L Series] FLC1 Serial Private Protoc First LH HL Y ND Condition 300 5 5 ()	ol [5] [msec] msec	 ✓ ✓ ✓ (Second) 			Edit
PLC Setting[X-SEI Alias Name : Interface : String Save Mode : Use Redundance Operate Condition : A Change Condition : Primary Option Timeout Send Wait Retry	L Series] PLC1 Serial Private Protoc First LH HL V ND TimeOut Condition 300 5 C S C C C C C C C C C C C C C	Ch 5] msec] msec	ange		C .	omm Manual
PLC Setting[X-SEI Alias Name : Protocol : String Save Mode : Use Redundanc Operate Condition : A Change Condition : A Change Condition : C Primary Option Timeout Send Wait Retry	L Series] PLC1 : Gerial : Private Protoc : First LH HL : Y ND : Condition : Condition	ol Ch 5 msec]	ange (Second)			Edit
PLC Setting[X-SEI Alias Name : Interface : String Save Mode : String Save Mode : Des Redundanc Operate Condition : Change Condition : Primary Option Timeout Send Wait Retry	L Series] PLC1 Serial Private Protoc First LH HL Y ND Condition 300 5 5 C	ol Ch 5 msec]	✓ ✓ ✓ ✓ ✓ ✓ (Second)			Edit
PLC Setting[X-SEI Alias Name : Interface : String Save Mode : Use Redundanc Operate Condition : Change Condition : Primary Option Timeout Send Wait Retry	L Series] PLC1 Serial Private Protoc First LH HL Y ND Condition 300 S S C S C C S C C C C C C C C C C C C C	ol Ch 5 msec]	ange (Second)			Edit
PLC Setting[X-SEI Alias Name : Interface : String Save Mode : Use Redundanc Change Condition : A Change Condition : A Change Condition : A Primary Option Timeout Send Wait Retry	L Series] PLC1 Serial Private Protoc First LH HL Y X Condition 300 5 5 C	ol Ch 5 msec]	↓ (Second)			Edit

Settings		Contents						
ТОР	Model	Check the TOP display	Check the TOP display and process to select the touch model.					
External device	Vendor	Select the vendor of the Select "M2I Corporation	elect the vendor of the external device to be connected to TOP.					
	PLC	Select an external devi	Select an external device to connect to TOP.					
		Model	Interface	Protocol				
		X-SEL Series	Serial Private Protocol					
		Please check the system configuration in Chapter 1 to see if the external device you want to connect is a model whose system can be configured.						



3. TOP communication setting

The communication can be set in TOP Design Studio or TOP main menu. The communication should be set in the same way as that of the external device.

3.1 Communication setting in TOP Design Studio

(1) Communication interface setting

■ [Project > Project Property > TOP Setting] → [HMI Setup > "Use HMI Setup" Check > Edit > Serial]



Change HMI[<u>H</u>] Mdd	PLC [A] TTT Change	PLC[<u>C]</u> 🔀 De	lete PLC[D]					×
TOP Setting	Date / Time Sync.	Screen Option	Unit Conv	ert Global Lock & Touch	Project Style	Splash	PLC Buffer Sync	
FieldBus (0) FID (0)	Use HMI Setup				i roject orțite	Initializatio	on Edit	
COMP (1) COM2 (0) COM2 (0) COM3 (0) Ethernet (0) Wireles (0) USBDevice (0)	Project Setting HMIDisable=0 Project Name=New p Start Mode=Menu Start Screen No.=1 Latch Use=0 Latch Set=0~0 Communication Error USBFrortNessage=0 StorageTrorMessage=1	roject Message=0 ==1						
ontrol Panel								
🔯 System	🚾 Dev	ices		Service	0	ptio	n	
			🚥 Seri	al			×	
		7	Se	rial Port	COM	1	•	
PLC Se	ecurity D	ate/Time	Si	gnal Leve RS-232C○RS	Ⅰ -422(4) () RS-48	35(2)	
<u>~</u>				Baud Rate	9600		-	
				Data Bit	8		-	
Ethernet	Serial	HDMI		Stop Bit	1		-	
		2	P	arity Bit	None	!	-	
infi 🗸				Flow	Off		~	
Diagnostic	File Manager	Ping	Au	to Search	Loop	back	Test	
					Apply	Ca	incel	

Items	ТОР	External device	Remarks	
Signal Level	RS-232C	RS-232C		
Baud Rate	9600			
Data Bit	8			
Stop Bit	1			
Parity Bit	none			

* The above settings are examples recommended by the company.

Items	Description
Signal Level	Select the serial communication method between the TOP and an external device.
Baud Rate	Select the serial communication speed between the TOP and an external device.
Data Bit	Select the serial communication data bit between the TOP and an external device.
Stop Bit	Select the serial communication stop bit between the TOP and an external device.
Parity Bit	Select the serial communication parity bit check method between the TOP and an external device.



(2) Communication option setting

- [Project > Project Property > Device Setting > COM > "PLC1 : X-SEL Series"]
 - Set the options of the X-SEL Series communication driver in TOP Design Studio.

Project Option	×
Change HMI[H] Kall Add PLC [A] The Change PLC[C] X Delete PLC	
Image: Construction PLC Setting[X-SEL Series] Image: Construction Alias Name : PLC1 Image: Construction Interface : Serial Image: Construction Protocol Image: Construction Image: Construction Image: Construction<	(Second) Edit
	Apply Close

Items	Settings	Remarks
Interface	Select Serial.	
Protocol	Select Private Protocol.	
TimeOut (ms)	Set the time for the TOP to wait for a response from an external device.	
SendWait (ms)	Set the waiting time between TOP's receiving a response from an external device and	
	sending the next command request.	
Retry	Configure the amount of redelivery attempts made by the external device to TOP.	



3.2. Communication setting in TOP

* This is a setting method when "Use HMI Setup" in the setting items in "3.1 TOP Design Studio" is not checked.

■ Touch the top of the TOP screen and drag it down. Touch "EXIT" in the pop-up window to go to the main screen.



(1) Communication interface setting

■ [Main Screen > Control Panel > Serial]



Items	ТОР	External device	Remarks	
Signal Level	RS-232C	RS-232C		
Baud Rate	9600			
Data Bit	8			
Stop Bit	1			
Parity Bit	none			

* The above settings are setting examples recommended by the company.

Items	Description
Signal Level	Select the serial communication method between the TOP and an external device.
Baud Rate	Select the serial communication speed between the TOP and an external device.
Data Bit	Select the serial communication data bit between the TOP and an external device.
Stop Bit	Select the serial communication stop bit between the TOP and an external device.
Parity Bit	Select the serial communication parity bit check method between the TOP and an external device.



(2) Communication option setting

■ [Main Screen > Control Panel > PLC]

	Ġ		PLC	×
	🔯 Syster	Driver(COM1)	PLC1(X-SEL Series) 🔻	
Run		Interface	Serial 💌	
		Protocol	Private Protocol 💌	
WNC	PLC	Timeout	300 🖨 msec	
VNC		Send Wait	0 🖨 msec	
Viewer		Retry	5	
0.	Ethernet			
Screen shot	intil "			
	Diagnostic			
	[System]	Diagnostic		Apply Cancel

Items	Settings	Remarks
Interface	Select Serial.	
Protocol	Select Private Protocol.	
TimeOut (ms)	Set the time for the TOP to wait for a response from an external device.	
SendWait (ms)	Set the waiting time between TOP's receiving a response from an external device	
	and sending the next command request.	
Retry	Configure the amount of redelivery attempts made by the external device to TOP.	



3.3 Communication diagnostics

■ Check the interface setting status between the TOP and an external device.

- Touch the top of the TOP screen and drag it down. Touch "EXIT" in the pop-up window to go to the main screen.
- Check if the COM port settings you want to use in [Control Panel > Serial] are the same as those of the external device.
- Diagnosis of whether the port communication is normal or not
- Touch "Communication diagnostics" in [Control Panel > PLC].

- The Diagnostics dialog box pops up on the screen and determines the diagnostic status.

ОК	Communication setting normal
Time Out Error	Communication setting abnormal
	- Check the cable, TOP, and external device setting status. (Reference: Communication diagnostics sheet)

Communication diagnostics sheet

- If there is a problem with the communication connection with an external terminal, please check the settings in the sheet below.

Items	Conte	nts	Ch	eck	Remarks
System	How to connect the sys	stem	OK	NG	1 Custom configuration
configuration	Connection cable name	2	OK	NG	1. System configuration
ТОР	Version information		OK	NG	
	Port in use		OK	NG	
	Driver name		OK	NG	
	Other detailed settings		OK	NG	
	Relative prefix	Project setting	OK	NG	
		Communication	OK	NC	2. External device selection
		diagnostics	ŬK	NG	3. Communication setting
	Serial Parameter	Transmission	OK	NC	
		Speed	ŬK	NG	
		Data Bit	ОК	NG	
		Stop Bit	OK	NG	
		Parity Bit	OK	NG	
External device	CPU name		OK	NG	
	Communication port name (module name)		OK	NG	
	Protocol (mode)	OK	NG		
	Setup Prefix		OK	NG	
	Other detailed settings		OK	NG	4. External device setting
	Serial Parameter	Transmission		NG	4. External device setting
		Speed	ÜK	NG	
		Data Bit	OK	NG	
		Stop Bit	OK	NG	
		Parity Bit	OK	NG	
	Check address range				6. Supported addresses
			OK	NG	(For details, please refer to the PLC
					vendor's manual.)



Configure the communication setting of the external device by referring to its user manual.



5. Cable table

This chapter introduces a cable diagram for normal communication between the TOP and the corresponding device.

■ 1:1 connection (RS-232C)

TOP					Externa	l device
Pin	Signal	Pin	Cable	Pin	Signal	Pin
arrangement*Note 1)	name	number		number	name	arrangement*Note 1)
1 5	RD	2 -		2	RD	1 5
	SD	3 -		3	SD	
6 9						6 9
Based on	SG	5 -		- 5	SG	Based on
communication						communication
cable						cable connector
connector front,						front,
D-SUB 9 Pin						D-SUB 9 Pin

*Note 1) The pin arrangement is as seen from the connecting side of the cable connection connector.



6. Supported addresses

The devices available in TOP are as follows:

The device range (address) may differ depending on the CPU module series/type. The TOP series supports the maximum address range used by the external device series. Please refer to each CPU module user manual and be careful not to deviate from the address range supported by the device you want to use.*Detailed description for the address can be found below.

Device	Bit	Word	Double word	Description	Remarks
IP	IP000 - IP287	IP000 - IP272		Input Port	*1)
OP	OP300 - OP587	OP300 - OP572		Output Port	
FG	FG000:600 - FG000:899	FG000:600 - FG000:872	_	Flag Data	
PDT	-	PDT0		Number of Effective	*1)
				Point Data	*3)
EPD	-	EPD0	_	Number of Effective Point Data 2	*1) *3)
	INT000:0200.0 - INT000:1299.31	INT000:0200 - INT000:1299	INT000:0200 - INT000:1299	Integer Data	
	INT001:0001.0 - INT128:1099.31	INT001:0001 - INT128:1099	INT001:0001 - INT128:1099		
RL	_	RL0000:0300 - RL0000:1399	RL000.0300 - RL000.1399	Real Data	
		RL0001:0100 - RL0128:1199	RL001.0100 - RL128.1199		
AXST	AXST00.00 – AXST47.15	AXST00 - AXST47		Axis Status	*1)
PGST	PGST000.00 - PGST511.15	PGST000 - PGST511		Program Status	*1)
SYST	SYST0.00 - SYST6.15	SYSTO - SYST6		System Status	*1)
PRG	-	PRG000 - PRG128		Program Control	*2)
AR		AR0	_	Alarm Reset	*2)
SR		SR0	-	Software Reset	*2)
DSR		DSR0	_	Drive-Source	*2)
				Operation-Pause	
OPR		OPR0	_	Cancellation	*2)
SV		SV0 - SV2	-	Servo ON/OFF	*2)
RO		RO0 - RO3	_	Home Return	*2)
				Absolute Coordinate	*2)
ACM			ACM0 - ACMC	Specification	
				Movement	
				Relative Coordinate	*2)
RCM			RCM0 - RCMC	Specification	
				Movement	
JIM			JIMO - JIM6	Jogging/Inching	*2)
				Point-Number	*2)
PNM		PNM0 - PNM5		Specification	
				Movement	
OSC		OSC0 - OSC2	_	Operation	*2)
				Stop/Cancel	
PD	PD0001:00.00 - PD1500:12.31	PD0001:00 - PD1500:12	PD0001:00 - PD1500:12	Point Data	*4)
ED	ED0001:00.00 - ED1500:12.31	ED0001:00 - ED1500:12	ED0001:00 - ED1500:12	Point Data 2	*4)
PDO		PDO0 - PDO2		Effective Point Data	
				(Operate)	ļ
EDO		EDO0 - EDO2		Effective Point Data	
				2 (Operate)	
PCLR		PCLR0 - PCLR2	_	Point Data Clear	*2)
EPLR		EPLR0 - EPLR2	—	Point Data Clear2	*2)

				Touch Operation	Panel
Device	Bit	Word	Double word	Description	Remarks
SAXS		SAXS00 - SAXS1B		SCARA Axis Status (WORK)	*1)
SAXSD		SAXSD00 - SAXSD1B		SCARA Axis Status (TOOL)	*1)
CD			CD0:00:0 - CD1:31:3	Coordinate System Definition Data	*1)
SD		SD01:00 - SD255:10		Simple Interference Check Zone Data	*1)
SACM			SACM00 - SACM0D	SCARA Absolute Coordinate Movement	*2)
SRCM			SRCM00 - SRCM0D	SCARA Relative Coordinate Movement	*2)
SPNM		SPNM0 - SPNM6		SCARA Point Number Movement	*2)

*1) read only
*2) write only
*3) TAG must be on screen during PROG RUN or valid point inquiry
*4) buffer



*Detailed description for device address

Device	Description
FG	EG000:600
	000 >> Program number Global area(000). Local area(001~128)
	600 >> Flag number Global area(600), Local area(900~999)
INT	INT000:0200
	000 >> Program number Global area(000). Local area(001~128)
	200 >> Variable number Global area(200~299,1200~1299), Local area(0001~0099,1001~1099)
RL	RL000:0300
	000 >> Progam number Global area(000), Local area(001~128)
	300 >> Variable number Global area(300~399,1300~1399), Local area(0100~0199,1101~1199)
AXST	AXST00 - AXST05: Single-axis status
	00: Axis status
	Bit 7 (Reserved for system use)
	Bit 6 (Reserved for system use)
	Bit 5 (Push error detection): $0 = Not$ detected $/ 1 = Detected$
	Bit 4 (Operation command successful completion): $0 = Not$ yet complete/ $1 = Completed$ successfully
	Bit 3 (Servo): 0 = OFF / 1 = ON
	Bit 1-2 (Origin return): $0 = Not$ yet performed / $1 = Returning$ to origin / $2 = Completed$
	Bit 0 (Servo axis in use): 0 = Not in use / 1 = In use (moving, etc.)
	01: Axis sensor input status
	Bit 3 (Reserved for system use)
	Bit 2 (Origin sensor): 0 = OFF / 1 = ON
	Bit 1 (Overrun sensor): 0 = OFF / 1 = ON
	Bit 0 (Creep sensor): 0 = OFF / 1 = ON
	02: Axis error code
	03: Encoder status
	Bit 7 (Battery alarm (BA))
	Bit 6 (Battery error (BE))
	Bit 5 (Multi-rotation error (ME))
	Bit 4 (Reserved for system use)
	Bit 3 (Counter overflow (OF))
	Bit 2 (Count error (CE))
	Bit 1 (Full absolute status (FS))
	Bit 0 (Overspeed (OS))
	04: Current position (L) unit (0.001mm)
	Indicates the lower 16 bits of the current position in Hex.
	05: Current position (H) unit (0.001mm)
	Indicates the upper 16 bits of the current position in Hex.
	AXST06 - AXST11: Double axes status
	AXS142 - AXS14/: Eight axes status
PGST	PGS1000 - PGS1003: Program number 1 status
	Bit 3 (Reserved for system use)
	Bit 2 (Reserved for system use)
	Bit 0 (Start): 0 - Not started (1 - Started
	001: Evecution program stop number
	002: Program-dependent error code
	002: Frogram dependent en or code
	PGST004 - PGST007: Program number 2 status
	PGST508 - PGST511: Program number 128 status

_	I ouch Operation Panel
Device	Description
SYST	SYSTO: System mode
	0 = Indeterminable / 1 = AUTO mode / 2 = MANUAL mode / 3 = Slave update mode / 4 = Core update mode
	1: Critical level system error number
	2: Latest system error number
	3: System status byte 1
	Bit 7 (Reserved for system use)
	Bit 6 (Battery voltage error status) : 0 = No error / 1 = Error
	Bit 5 (Battery voltage low warning status): 0 = No low / 1 = Low
	Bit 4 (Power error status): 0 = Normal / 1 = Error
	Bit 3 (Emergency stop switch status): $0 = No$ emergency stop / $1 =$ Emergency stop
	Bit 2 (Safety gate status): 0 = CLOSE / 1 = OPEN
	Bit 1 (IP enable switch status): $0 = OR / 1 = OFF$
	Bit 0 (Operation mode switch status): 0 = AUTO / 1 = MANUAL
	4: System status byte 2
	Bit / (Reserved for system use)
	Bit 6 (Reserved for system use)
	Bit 5 (Program run status): 0 = Not run / 1 = Running
	Bit 4 (Restart wait status): $0 = Not$ waiting $/ 1 = Waiting$
	Bit 3 (I/O interlock status): 0 = No interlock / 1 = Interlock
	Bit 2 (Servo interlock status): 0 = No interlock / 1 = Interlock
	Bit 1 (Slave parameter writing status): 0 = Not writing / 1 = Writing
	Bit U (Application data flash ROM write status): 0 = Not writing/erasing / 1 = Writing/erasing
	5: System status byte 3
	Bit / (Reserved for system use)
	Bit 6 (Reserved for system use)
	Bit 5 (Reserved for system use)
	Bit 4 (Operation mode): $U = Program mode / 1 = Position mode$
	Bit 3 (Keserved for system use)
	Bit 2 (System ready status): U = Not ready / 1 = Ready
	BIT I (system operation status): $U = Not operating in AUTO mode / T = Operating in AUTO modeBit 0 (Drive course suboff status): 0 = Not sub site off / 1 = Cut off$
	BIT U (Drive-source cutom status): U = Not cut off / 1 = Cut off
55.0	 b: System status byte 4, keserved for system use
PRG	PRG 1000' - Program number
	Write Data U: Program Run Command
	Write Data 1: Program End Command
	Write Data 2. Program Pause Command
	Write Data 5. Program One-Step Kun Command
20	svo. Command trigger / i = write
	2. Operation type Pit 0 (Sonio ON/OEE) 0 = OEE (1 = ON)
	DO(1 Command trianer (1 - Write)
кO	kov. Command trigger / i = write
	1. Axis pattern
	2. End search speed at nome return
	5: Creep speed at nome return
ACM	ACMU: Command trigger / 1 = Write
	1: Axis pattern
	2: Acceleration unit (0.01G)
	3: Deceleration unit (U.UTG)
	4: Speed unit (mm/sec)
	j 5 - C. Adsolute coordinate data unit (U.UU Imm)



Device	Description
RCM	RCM0: Command trigger / 1 = Write
	1: Axis pattern
	2: Acceleration unit (0.01G)
	3: Deceleration unit (0.01G)
	4: Speed unit (mm/sec)
	5 - C: Relative coordinate data unit (0.001mm)
JIM	JIM0: Command trigger / 1 = Write
	1: Axis pattern
	2: Acceleration unit (0.01G [for each axis, in %])
	3: Deceleration unit (0.01G [for each axis, in %])
	4: Speed unit (mm/sec [for each axis, in %])
	5: Inching distance unit (0.001mm [for each axis, in 0.001deg])
	6: Operation type
	Bit 3 (Reserved for system use) Fixed to 0
	Bit 1-2 (Jogging/inching coordinate system (SCARA only)): 0 = Base coordinate system
	/ 1 = Selected work coordinate system / 2 = Selected tool coordinate system / 3 = Each axis system
	Bit 0 (Jogging/inching direction): 0 = Negative direction on coordinate axis / 1 = Positive direction on coordinate axis
PNM	PNM0: Command trigger / 1 = Write
	1: Axis pattern
	2: Acceleration unit (0.01G)
	3: Deceleration unit (0.01G)
	4: Speed unit (mm/sec)
	5: Point number
OSC	OSC0: Command trigger / 1 = Write / 4 = Clear
	1: Stop axis pattern
	2: Appended command byte
	Bit 1-7 (Reserved for system use)
	Bit 0 (Specification of output cancellation during interlock on-hold (OUT port) (when all operations are paused)
	/ 0 = Not canceled / 1 = Canceled tentatively
PD,	PD0001:00
ED	0001 >> Index of point data (0001~1500)
	00 >> Point Data (00~12)
	00: Point number
	01: Axis pattern
	02: Acceleration unit (0.01G)
	03: Deceleration unit (0.01G)
	04: Speed unit (mm/sec)
	05: 1st axis position data
	12: 8th axis position data
PDO,	PDO0: Command trigger / 1 = Write / 2 = Read
EDO	1: Starting point number
	2: Number of point data
PCLR,	PCLR0: Command trigger / 1 = Write
EPLR	1: Clear starting point number
	2: Number of clear point data



Device	Description
SAXS	Type : Base coordinate system (WORK)
	SAXS00: Work coordinate system selection number
	01: Tool coordinate system selection number
	02: Common axis status
	03: Axis pattern
	04: Axis status
	05: Axis sensor input status
	06: Axis error code
	07: Encoder status
	08: Current position (L) unit (0.001mm or 0.001deg)
	09: Current position (H) unit (0.001mm or 0.001deg)
	SAXS0A - SAXS0F: Double axes status
	SAXS16 - SAXS1B: Four axes status
SAXSD	Type : Selected work coordinate system (TOOL)
	SAXSD00: Work coordinate system selection number
	01: Tool coordinate system selection number
	02: Common axis status
	03: Axis pattern
	04: Axis status
	05: Axis sensor input status
	06: Axis error code
	07: Encoder status
	08: Current position (L) unit (0.001mm or 0.001deg)
	09: Current position (H) unit (0.001mm or 0.001deg)
	SAXSD0A - SAXSD0F: Double axes status
	SAXSD16 - SAXSD1B: Four axes status
CD	CD1:31:3
	1 >> Type $(0~1)$ 0 = WORK / 1 = TOOL
	31 >> Coordination system definition data number (0~31)
	3 >> Coordinate offset (0~3)
	0: X-axis data
	1: Y-axis data
	2: Z-axis data
	3: R-axis data
SD	SD01:00
	01 >> Simple interference check zone data number (01~255)
	00 >> Simple interference check zone data (00~10)
	00 – 08: Simple interference check zone definition coordinate
	09: Physical output port number or global flag number for output upon entry
	10: Entry error type specification
SACM	00: Command trigger / 1 = Write
	01: Axis pattern
	02: Acceleration unit (% or 0.01G)
	03: Deceleration unit (% or 0.01G)
	04: Speed unit (% or mm/sec)
	05: Positioning operation type (No SCARA axis disabled)
	06 - 0D: Absolute coordinate data unit (0.001mm)



Device	Description
SRCM	00: Command trigger / 1 =Write
	01: Axis pattern
	02: Acceleration unit (% or 0.01G)
	03: Deceleration unit (% or 0.01G)
	04: Speed unit (% or mm/sec)
	05: Positioning operation type (No SCARA axis disabled)
	06 - 0D: Absolute coordinate data unit (0.001mm)
SPNM	0: Command trigger / 1 = Write
	1: Axis pattern
	2: Acceleration unit (0.01G)
	3: Deceleration unit (0.01G)
	4: Speed unit (mm/sec)
	5: Positioning operation type (No SCARA axis disabled)
	6: Point number