Hitachi, Ltd.

S10 Series SIO Driver

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Introduction

This manual describes how to connect the Display and the External Device (target PLC).

In this manual, the connection procedure will be described by following the below sections:



1 System Configuration

The system configuration in the case when the External Device of Hitachi, Ltd. and the Display are connected is shown.

Series	CPU	Link I/F SIO Type Setting Example		Setting Example	Cable Diagram	
	LQP510 ^{*1}	UP LINK Connector on LPU Module	RS422/485 (4wire)	Setting Example 1 (page 7)	Cable Diagram 1 (page 22)	
		LQE560 (CN1)	RS232C	Setting Example 2 (page 8)	Cable Diagram 2 (page 25)	
S10V		LQE560 (CN2)	RS232C	Setting Example 3 (page 9)	Cable Diagram 2 (page 25)	
		LQE565 (CN1)	RS422/485 (4wire)	Setting Example 4 (page 10)	Cable Diagram 1 (page 22)	
		LQE565 (CN2)	RS422/485 (4wire)	Setting Example 5 (page 11)	Cable Diagram 1 (page 22)	
HIDIC-S10α	$\begin{array}{c} 2\alpha \; (LWP000) \;^{*2}, \\ 2\alpha E \; (LWP040) \;^{*2}, \\ 2\alpha H \; (LWP070) \;^{*2} \end{array}$	Terminal Block on CPU Unit	RS422/485 (4wire)	Setting Example 6 (page 12)	Cable Diagram 3 (page 26)	
	4α, 4αF	LWE805				
	Model S (LQP000), Model H (LQP010), Model F (LQP011),	LQE060 (CN1) LQE160 (CN1) LQE560 (CN1)	RS232C	Setting Example 7 (page 13)	Cable Diagram 2	
S10mini		LQE060 (CN2) LQE160 (CN2) LQE560 (CN2)	RS232C	Setting Example 8 (page 14)	(page 25)	
	Model L (LQP800)	LQE165 (CN1) LQE565 (CN1)	RS422/485 (4wire)	Setting Example 9 (page 15)	Cable Diagram 1 (page 22)	
		LQE165 (CN2) LQE565 (CN2)	RS422/485 (4wire)	Setting Example 10 (page 16)		

*1 To connect to the Display, a C revision or higher version of the LPU Module is required. Check the alphabet on the right end of the bar code seal (top surface of the LPU Module) for the revision number of the LPU Module.

*2 Connect to the CPU Module's HOST LINK COMPUTER LINK Input/Output Terminal (Upper Calculation I/F).

Connection Configuration

• 1:1 connection



■ IPC COM Port

When connecting IPC with an External Device, the COM port used depends on the series and SIO type. Please refer to the IPC manual for details.

Usable port

Series	Usable Port			
Ochos	RS-232C	RS-422/485(4 wire)	RS-422/485(2 wire)	
PS-2000B	COM1 ^{*1} , COM2, COM3 ^{*1} , COM4	-	-	
PS-3450A, PS-3451A, PS3000-BA, PS3001-BD	COM1, COM2 ^{*1*2}	COM2 ^{*1*2}	COM2 ^{*1*2}	
PS-3650A, PS-3651A	COM1 ^{*1}	-	-	
PS-3700A (Pentium®4-M) PS-3710A	COM1 ^{*1} , COM2 ^{*1} , COM3 ^{*2} , COM4	COM3 ^{*2}	COM3 ^{*2}	
PS-3711A	COM1 ^{*1} , COM2 ^{*2}	COM2 ^{*2}	COM2 ^{*2}	
PL-3000B, PL-3600T, PL-3600K, PL-3700T, PL-3700K, PL-3900T	COM1 ^{*1*2} , COM2 ^{*1} , COM3, COM4	COM1*1*2	COM1 ^{*1*2}	

*1 The RI/5V can be switched. Use the IPC's switch to change if necessary.

*2 Set up the SIO type with the DIP switch. Please set up as follows according to SIO type to be used.

DIP switch setting: RS-232C

DIP switch	Setting	Description	
1	OFF ^{*1}	Reserved (always OFF)	
2	OFF	SIO type: RS-232C	
3	OFF	510 type. R5-252C	
4	OFF	Output mode of SD (TXD) data: Always output	
5	OFF	Terminal resistance (220 Ω) insertion to SD (TXD): None	
6	OFF	Terminal resistance (220Ω) insertion to RD (RXD): None	
7	OFF	Short-circuit of SDA (TXA) and RDA (RXA): Not available	
8	OFF	Short-circuit of SDB (TXB) and RDB (RXB): Not available	
9	OFF	RS (RTS) Auto control mode: Disabled	
10	OFF		

*1 When using PS-3450A, PS-3451A, PS3000-BA and PS3001-BD, turn ON the set value.

DIP switch setting: RS-422/485 (4 wire)

DIP switch	Setting	Description	
1	OFF	Reserved (always OFF)	
2	ON	SIO type: RS-422/485	
3	ON	510 type. NS-422/403	
4	OFF	Output mode of SD (TXD) data: Always output	
5	OFF	Terminal resistance (220 Ω) insertion to SD (TXD): None	
6	OFF	Terminal resistance (220 Ω) insertion to RD (RXD): None	
7	OFF	Short-circuit of SDA (TXA) and RDA (RXA): Not available	
8	OFF	Short-circuit of SDB (TXB) and RDB (RXB): Not available	
9	OFF	RS (RTS) Auto control mode: Disabled	
10	OFF		

DIP switch setting: RS-422/485 (2 wire)

DIP switch	Setting	Description	
1	OFF	Reserved (always OFF)	
2	ON	SIO type: PS 422/485	
3	ON	510 type. N5-422/405	
4	OFF	Output mode of SD (TXD) data: Always output	
5	OFF	Terminal resistance (220 Ω) insertion to SD (TXD): None	
6	OFF	Terminal resistance (220 Ω) insertion to RD (RXD): None	
7	ON	Short-circuit of SDA (TXA) and RDA (RXA): Available	
8	ON	Short-circuit of SDB (TXB) and RDB (RXB): Available	
9	ON	- RS (RTS) Auto control mode: Enabled	
10	ON		

2 Selection of External Device

Select the External Device to be connected to the Display.

💰 New Project File			×
GP-Pro	Device/PL	c	
	Maker	Hitachi, Ltd.	•
	Series	S10 Series SIO	•
	🗖 Use S	ystem Area	Refer to the manual of this Device/PLC
	Connection	Method	
	Port	COM1	
			<u>Go to Device/PLC Manual</u>
Back (3) Con	nmunication Settings New L	ogic New Screen Cancel

Setup Items	Setup Description		
Maker	Select the maker of the External Device to be connected. Select "Hitachi, Ltd.".		
Select a model (series) of the External Device to be connected and connection methor Select "S10 Series SIO". Check the External Device which can be connected in "S10 Series SIO" in system configuration. Image: "I System Configuration" (page 3)			
Use System Area	 Check this option when you synchronize the system data area of the Display and the device (memory) of the External Device. When synchronized, you can use the ladder program of the External Device to switch the display or display the window on the Display. Cf. GP Pro-EX Reference Manual "Appendix 1.4 LS Area (Direct Access Method)" This can be also set with GP-Pro EX or in off-line mode of the Display. Cf. GP Pro-EX Reference Manual " 5.17.6 Setting Guide of [System Setting Window]■[Main Unit Settings] Settings Guide♦System Area Setting" Cf. Maintenance/Troubleshooting "2.15.1 Settings common to all Display models♦System Area Settings" 		
Port	Select the Display port to be connected to the External Device.		

3 Example of Communication Setting

The following shows examples of communication settings of the Display and the External Device, which is recommended by Pro-face.

3.1 Setting Example 1

Settings of GP-Pro EX

Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Summaru			Change Device/PLC
Maker Hitachi.	Ltd.	Series S10 Series S10	Port COM1
Text Data Mode	1 Change	/	
Communication Settings			
SIO Type	C RS232C	© RS422/485(2wire) © RS422/485(4wire)	e)
Speed	19200	_	
Data Length	C 7	• 8	
Parity	C NONE	© EVEN	
Stop Bit	1	O 2	
Flow Control	C NONE	ER(DTR/CTS) C XON/XOFF	
Timeout	3 🔹	(sec)	
Retry	2 🔹		
Wait To Send	0 +	(ms)	
RI / VCC	© RI	O VCC	
In the case of RS or VCC (5V Powe Isolation Unit, plea	232C, you can sele r Supply). If you us ase select it to VCC	ct the 9th pin to RI (Input) e the Digital's RS232C Defa	ult
Device-Specific Settings			
Allowable Number of	f Devices/PLCs	1	
Number Device I	Vame	Settings	

Device Setting

To display the setting screen, click III ([Setting]) of the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

💰 Individual [Device Settings		×
PLC1			
Series	• S10V	C HIDIC-S10	alpha/S10mini
Please recor you have cha	ifirm all of address s anged the series.	ettings that you	are using if
Expanded M	emory Address(Hex)	00000000	
			Default
		0K (<u>0</u>)	Cancel

Settings of External Device

Communication setting of External Device is fixed. No setting is required.

3.2 Setting Example 2

Settings of GP-Pro EX

Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Device/PLC 1	
Summary	Change Device/PLC
Maker Hitachi	, Ltd. Series S10 Series S10 Port COM1
Text Data Mode	1 Change
Communication Settings	3
SIO Type	RS232C C RS422/485(2wire) O RS422/485(4wire)
Speed	19200
Data Length	O 7 O 8
Parity	O NONE O EVEN O ODD
Stop Bit	● 1 ○ 2
Flow Control	O NONE
Timeout	3 <u>*</u> (sec)
Retry	2 .
Wait To Send	0 (ms)
RI / VCC	RI O VCC
In the case of RS or VCC (5V Pow Isolation Unit, pla	3232C, you can select the 9th pin to RI (Input) er Supply). If you use the Digital's RS232C ease select it to VCC. Default
Device-Specific Setting	s
Allowable Number	of Devices/PLCs 1
Number Device	Name Settings
	Izelies=210A

Device Setting

To display the setting screen, click III ([Setting]) of the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

Individual E	evice Settings		×			
PLC1						
Series	• S10V	C HIDIC-S10	alpha/S10mini			
Please recon you have cha	firm all of address s anged the series.	ettings that you	are using if			
Expanded M	emory Address(Hex)	00000000				
			Default			
		OK (<u>O</u>)	Cancel			

Settings of External Device

Communication setting of External Device is fixed. No setting is required.

Rotary switch of External Device needs to be set depending on the channel in use.

Channel in use	Rotary Switch	
	CN1MODU	
CN1	8	

3.3 Setting Example 3

Settings of GP-Pro EX

Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Device/PLC 1	
Summary	Change Device/PLC
Maker Hitachi	, Ltd. Series S10 Series S10 Port COM1
Text Data Mode	1 Change
Communication Settings	3
SIO Type	RS232C C RS422/485(2wire) O RS422/485(4wire)
Speed	19200
Data Length	O 7 O 8
Parity	O NONE O EVEN O ODD
Stop Bit	● 1 ○ 2
Flow Control	O NONE
Timeout	3 <u>*</u> (sec)
Retry	2 .
Wait To Send	0 (ms)
RI / VCC	RI O VCC
In the case of RS or VCC (5V Pow Isolation Unit, pla	3232C, you can select the 9th pin to RI (Input) er Supply). If you use the Digital's RS232C ease select it to VCC. Default
Device-Specific Setting	s
Allowable Number	of Devices/PLCs 1
Number Device	Name Settings
	Izelies=210A

Device Setting

To display the setting screen, click III ([Setting]) of the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

Individual E	evice Settings		×
PLC1			
Series	• S10V	C HIDIC-S10	alpha/S10mini
Please recon you have cha	firm all of address s anged the series.	ettings that you	are using if
Expanded M	emory Address(Hex)	00000000	
			Default
Cancel			

Settings of External Device

Communication setting of External Device is fixed. No setting is required.

Rotary switch of External Device needs to be set depending on the channel in use.

Channel in use	Rotary Switch	
	CN2MODU	
CN2	9	

3.4 Setting Example 4

- Settings of GP-Pro EX
- Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Device/PLC 1	
Summary	Change Device/PLC
Maker Hitachi,	td. Series S10 Series S10 Port COM1
Text Data Mode	1 Change
Communication Settings	
SIO Type	C RS232C C RS422/485(2wire) C RS422/485(4wire)
Speed	19200
Data Length	C 7 C 8
Parity	C NONE O EVEN O ODD
Stop Bit	© 1 © 2
Flow Control	C NONE ● ER(DTR/CTS) O XON/XOFF
Timeout	3 (sec)
Retry	2
Wait To Send	0 (ms)
RI / VCC	© RI O VCC
In the case of RS or VCC (5V Powe Isolation Unit, ple	I2C, you can select the 9th pin to RI (Input) Supply]. If you use the Digital's RS232C e select it to VCC. Default
Device-Specific Settings	
Allowable Number of	Devices/PLCs 1
Number Device	Ime Settings

Device Setting

To display the setting screen, click III ([Setting]) of the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

💰 Individual [Device Settings		×
PLC1			
Series	• S10V	C HIDIC-S10	alpha/S10mini
Please recon you have cha	firm all of address s anged the series.	ettings that you	are using if
Expanded M	emory Address(Hex)	00000000	
			Default
Cancel			

Settings of External Device

Communication setting of External Device is fixed. No setting is required.

Rotary switch of External Device needs to be set depending on the channel in use.

Channel in use	Rotary Switch	
	CN1MODU	
CN1	8	

3.5 Setting Example 5

Settings of GP-Pro EX

Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Device/PLC 1	
Summary	Change Device/PLC
Maker Hitach	i, Ltd. Series S10 Series S10 Port COM1
Text Data Mode	1 Change
Communication Settings	s
SIO Type	O RS232C O RS422/485(2wire) O RS422/485(4wire)
Speed	19200
Data Length	07 08
Parity	O NONE O EVEN O ODD
Stop Bit	
Flow Control	O NONE
Timeout	3 (sec)
Retry	2 🚔
Wait To Send	0 (ms)
RI / VCC	O FI O VCC
In the case of R	5232C, you can select the 9th pin to RI (Input)
Isolation Unit, ple	ase select it to VCC. Default
Device-Specific Setting	s
Allowable Number	of Devices/PLCs 1
Number Device	Name Settings
	Journa - o to t

Device Setting

To display the setting screen, click III ([Setting]) of the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

<i>参</i> Individual D	evice Settings		×	
PLC1				
Series	• S10V	O HIDIC-S10	alpha/S10mini	
Please reconi you have cha	firm all of address s inged the series.	ettings that you	are using if	
Expanded Me	emory Address(Hex)	00000000		
			Default	
Cancel				

Settings of External Device

Communication setting of External Device is fixed. No setting is required.

Rotary switch of External Device needs to be set depending on the channel in use.

Channel in use	Rotary Switch	
	CN2MODU	
CN2	9	

3.6 Setting Example 6

Settings of GP-Pro EX

Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Device/PLC 1]		
Maker	Hitachi, Lt	d.	Series S10 Series SIO Port COM1
Text Da	ita Mode	1 <u>Change</u>	
Communicati	on Settings		
SIO Typ)e	C RS232C	C RS422/485(2wire) C RS422/485(4wire)
Speed		19200	
Data Le	ngth	0.7	• 8
Parity		O NONE	O EVEN O ODD
Stop Bit		● 1	© 2
Flow Co	ontrol	O NONE	ER(DTR/CTS) C XON/XOFF
Timeou	t .	3 📫 (#	(sec)
Retry		2 ÷	
Wait To	Send	0 🔹 ()	(ms)
RI / VC	С	© RI	C VCC
In the or VC Isolati	case of RS23 C (5V Power 9 on Unit, please	12C, you can selec Supply). If you use e select it to VCC.	ct the 9th pin to RI (Input) e the Digital's RS232C . Default
Device-Spec	aific Settings		
Allowab	le Number of [Devices/PLCs	1
Numbe	r Device Na	me	
ă I	IPLU1		[J] [Series=HIDIC-STUaipna/STUmini,Expanded Memory Address(Hex)=00000000

♦ Device Setting

To display the setting screen, click III ([Setting]) of the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

<i>参</i> Individual E	evice Settings		×
PLC1			
Series	O \$10V	• HIDIC-9	610alpha/S10mini
Please recon you have cha	firm all of address s inged the series.	ettings that y	ou are using if
Expanded Me	emory Address(Hex	0000000	0
			Default
		OK (<u>0)</u>	Cancel

Settings of External Device

Communication setting of External Device is fixed. No setting is required. Communication speed differs depending on the External Device in use. Please refer to the manual of the External Device for more details.

3.7 Setting Example 7

Settings of GP-Pro EX

Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Device/PLC 1	
Summary	Change Device/PLC
Maker Hitachi	td. Series S10 Series S10 Port CDM1
Text Data Mode	1 Change
Communication Settings	
SIO Type	RS232C O RS422/485(2wire) O RS422/485(4wire)
Speed	19200
Data Length	C 7 C 8
Parity	C NONE C EVEN © ODD
Stop Bit	© 1 © 2
Flow Control	C NONE C ER(DTR/CTS) C XON/XOFF
Timeout	3 (sec)
Retry	2
Wait To Send	0 (ms)
RI / VCC	RI O VCC
In the case of RS or VCC (5V Pow Isolation Unit, pla	I2C, you can select the 9th pin to RI (Input) Supply). If you use the Digital's RS232C e select it to VCC. Default
Device-Specific Setting	
Allowable Number	Devices/PLCs 1
Number Device	Ime Settings Series=HIDIC-S10alpha/S10mini.Expanded Memory Address(Hex)=00000000

Device Setting

To display the setting screen, click III ([Setting]) of the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

💰 Individual E	evice Settings		×
PLC1			
Series	O \$10V	HIDIC-S	10alpha/S10mini
Please reconfirm all of address settings that you are using if you have changed the series.			
Expanded Me	emory Address(Hex)	0000000)
			Default
		OK (<u>O)</u>	Cancel

Settings of External Device

Communication setting of External Device is fixed. No setting is required.

Rotary switch of External Device needs to be set depending on the channel in use.

Channel in use	Rotary Switch	
onanner in use	CN1MODU	
CN1	8	

3.8 Setting Example 8

Settings of GP-Pro EX

Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Device/PLC 1	
Summary	Change Device/PLC
Maker Hitachi	td. Series S10 Series S10 Port CDM1
Text Data Mode	1 Change
Communication Settings	
SIO Type	RS232C O RS422/485(2wire) O RS422/485(4wire)
Speed	19200
Data Length	C 7 C 8
Parity	C NONE C EVEN © ODD
Stop Bit	© 1 © 2
Flow Control	C NONE C ER(DTR/CTS) C XON/XOFF
Timeout	3 (sec)
Retry	2
Wait To Send	0 (ms)
RI / VCC	RI O VCC
In the case of RS or VCC (5V Pow Isolation Unit, pla	I2C, you can select the 9th pin to RI (Input) Supply). If you use the Digital's RS232C e select it to VCC. Default
Device-Specific Setting	
Allowable Number	Devices/PLCs 1
Number Device	Ime Settings Series=HIDIC-S10alpha/S10mini.Expanded Memory Address(Hex)=00000000

Device Setting

To display the setting screen, click III ([Setting]) of the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

💰 Individual 🛙	evice Settings		×
PLC1			
Series	O \$10V	HIDIC-S	10alpha/S10mini
Please reconfirm all of address settings that you are using if you have changed the series.			
Expanded M	emory Address(Hex	0000000)
			Default
		OK (<u>O)</u>	Cancel

Settings of External Device

Communication setting of External Device is fixed. No setting is required.

Rotary switch of External Device needs to be set depending on the channel in use.

Channel in use	Rotary Switch	
	CN2MODU	
CN2	9	

3.9 Setting Example 9

Settings of GP-Pro EX

Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Device	e/PLC1		
	Maker Hitachi, Li	:d.	Series S10 Series S10 Port COM1
	Text Data Mode	1 <u>Change</u>	
Comr	munication Settings		
	SIO Type	C RS232C	O RS422/485(2wire)
	Speed	19200	
	Data Length	O 7	• 8
	Parity	O NONE	O EVEN
	Stop Bit	⊙ 1	0 2
	Flow Control	O NONE	ER(DTR/CTS) C XON/XOFF
	Timeout	3 🕂 (;	sec)
	Retry	2 📑	
	Wait To Send	0 🔅 ()	ms)
	RI / VCC	© RI	O VCC
	In the case of RS23 or VCC (5V Power ! Isolation Unit, pleas	32C, you can selec Supply). If you use e select it to VCC.	at the 9th pin to RI (Input) ≥ the Digital's RS232C Default
Devi	ce-Specific Settings		
	Allowable Number of I	Devices/PLCs	1
	Number Device Na	ame	Settings
	👗 1 PLC1		ISeries=HIDIC-S10alpha/S10mini,Expanded Memory Address(Hex)=00000000

♦ Device Setting

To display the setting screen, click III ([Setting]) of the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

<i>ő</i> Individual E	evice Settings		×
PLC1			
Series	O \$10V	HIDIC-S1	0alpha/S10mini
Please reconfirm all of address settings that you are using if you have changed the series.			
Expanded Me	emory Address(Hex)	00000000	
			Default
		OK (<u>O</u>)	Cancel

Settings of External Device

Communication setting of External Device is fixed. No setting is required.

Rotary switch of External Device needs to be set depending on the channel in use.

Channel in use	Rotary Switch	
	CN1MODU	
CN1	8	

3.10 Setting Example 10

- Settings of GP-Pro EX
- Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Device/PLI	C1		
Make	er Hitachi, Li	td.	Series S10 Series S10 Port COM1
Text	Data Mode	1 <u>Change</u>	
Communic	ation Settings		
SIO 1	Гуре	C RS232C	C RS422/485(2wire) © RS422/485(4wire)
Spee	ed .	19200	T
Data	Length	O 7	© 8
Parity	,	C NONE	○ EVEN
Stop	Bit	⊙ 1	O 2
Flow	Control	O NONE	ER(DTR/CTS) O XON/XOFF
Time	out	3 📑 ((sec)
Retry	J	2	
Wait	To Send		(ms)
BL7	VCC	© RI	O VCC
In t or \ Isol	he case of RS23 /CC (5V Power S lation Unit, pleas	32C, you can selec Supply). If you use e select it to VCC.	ot the 9th pin to RI [Input] e the Digital's RS232C Default
Device-Sp	ecific Settings		
Allow	able Number of I	Devices/PLCs	1 🛃
Num	ber _ Device Na	ame	Settings
a de la de l	1 JPLC1		Series=HIDIC-S10alpha/S10mini,Expanded Memory Address(Hex)=00000000

♦ Device Setting

To display the setting screen, click III ([Setting]) of the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

<i>参</i> Individual D	evice Settings		×
PLC1			
Series	O \$10V	HIDIC-S1	0alpha/S10mini
Please reconfirm all of address settings that you are using if you have changed the series.			
Expanded Me	emory Address(Hex	00000000	
			Default
		OK (<u>O</u>)	Cancel

Settings of External Device

Communication setting of External Device is fixed. No setting is required.

Rotary switch of External Device needs to be set depending on the channel in use.

Channel in use	Rotary Switch	
	CN2MODU	
CN2	9	

4 Setup Items

Set communication settings of the Display with GP-Pro Ex or in off-line mode of the Display.

The setting of each parameter must be identical to that of the External Device.

"3 Example of Communication Setting" (page 7)

4.1 Setup Items in GP-Pro EX

Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Devic	e/PLC1						
Sum	mary					Change D	evice/PLC
	Maker Hitachi, L	.td.	Series	S10 Series SIO		Port COM1	
	Text Data Mode	1 Change					
Com	munication Settings						
	SIO Type	• RS232C • F	S422/485(2w	vire) 🔿 RS422	2/485(4wire)		
	Speed	19200]				
	Data Length	C7 © 8					
	Parity	C NONE C E	VEN	ODD			
	Stop Bit	© 1 O 2					
	Flow Control	C NONE C E	R(DTR/CTS)	O XON/XOFF			
	Timeout	3 🔹 (sec)					
	Retry	2 🕂					
	Wait To Send	0 🔹 (ms)					
	RI / VCC	⊙ RI O V	СС				
	In the case of RS2 or VCC (5V Power Isolation Unit, pleas	32C, you can select the 9 Supply). If you use the D se select it to VCC.	th pin to RI (Ir igital's RS232	nput) IC	Default		
Devi	Device-Specific Settings						
	Allowable Number of	Devices/PLCs 1					
	Number Device N	ame	Settings	HIDIC-S10alpha/S10) mini.Expanded Mer	morv Address(Hex)=00000000
			HALL I				

Setup Items	Setup Description	
SIO Type	Select the SIO type to communicate with the External Device.	
Speed	Select the communication speed between the External Device and the Display.	
Data Length	Select data length.	
Parity	Select how to check parity.	
Stop Bit	Select stop bit length.	
Flow Control	Select the communication control method to prevent overflow of transmission and reception data.	
Timeout	Use an integer from 1 to 127 to enter the time (s) for which the Display waits for the response from the External Device.	
Retry	In case of no response from the External Device, use an integer from "0 to 255" to enter how many times the Display retransmits the command.	
Wait To Send	Use an integer from "0 to 255" to enter standby time (ms) for the Display from receiving packets to transmitting next commands.	

Continues to the next page.

17

Setup Items	Setup Description
RI/VCC	You can switch RI/VCC of the 9th pin when you select RS232C for SIO type. When you connect to IPC, you need to use the IPC change switch to change RI/5V. Please refer to the manual of IPC for details.

Device Setting

To display the setting screen, click I ([Setting]) of the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

Individual E	evice Settings		×
PLC1			
Series	O \$10V	• HIDIC-S	310alpha/S10mini
Please recon you have cha	firm all of address : inged the series.	settings that y	ou are using if
Expanded M	emory Address(Hex) 0000000	0
			Default
		OK (<u>0)</u>	Cancel

Setup Items Setup Description	
Series Select the series of the External Device.	
Expanded Memory Address (HEX)	Enter the address of the expanded memory with "00000000 to FFFFFFFF" (HEX).

4.2 Settings in Off-Line Mode

NOTE

• Refer to the Maintenance/Troubleshooting manual for information on how to enter off-line mode or about the operation.

Cf. Maintenance/Troubleshooting Manual "2.2 Off-line Mode"

Communication Settings

To display the setting screen, touch [Device/PLC Settings] from [Peripheral Equipment Settings] in the off-line mode. Touch the External Device you want to set from the displayed list.

Comm.	Device	Option		
S10 Series SIO			[COM1]	Page 1/1
	SIO Type Speed Data Length Parity Stop Bit Flow Control Timeout(s) Retry Wait To Send(ms)	RS232C 19200 7 NONE 1 JER(DTR/C	• 8 • EVEN • 2 TS) •	ODD
	Exit		Back	2007/09/21 22:31:23

Setup Items	Setup Description	
SIO Type	Select the SIO type to communicate with the External Device. MPORTANT In the communication setting, confirm the serial interface specifications of the Display and set [SIO Type] correctly. If you select the SIO type the serial interface does not support, we cannot guarantee the operation. Please refer to the manual of the Display for more detail on the serial interface specifications.	
Speed	Select the communication speed between the External Device and the Display.	
Data Length Select data length.		
Parity	Select how to check parity.	
Stop Bit	Select stop bit length.	
Flow Control	Select the communication control method to prevent overflow of transmission and reception data.	
Timeout (s)Use an integer from 1 to 127 to enter the time (s) for which the Display wa response from the External Device.		

Setup Items Setup Description	
Retry	In case of no response from the External Device, use an integer from "0 to 255" to enter how many times the Display retransmits the command.
Wait To Send (ms)	Use an integer from "0 to 255" to enter standby time (ms) for the Display from receiving packets to transmitting next commands.

Device Setting

To display the setting screen, touch [Device/PLC Settings] from [Peripheral Equipment Settings]. Touch the External Device you want to set from the displayed list, and touch [Device Settings].

Comm.	Device	Option		
			-	-
S10 Series SIO			[COM1]	Page 1/1
Devic	e/PLC Name PL	C1		•
S	eries xpanded Memory A	S1Ø iddress(Hex)	IV Ø	
	Exit		Back	2007/09/21 22:31:29

Setup Items	Setup Description		
Device/PLC Name	Select the External Device to set. Device name is a title of the External Device set with GP- Pro EX. (Initial value [PLC1])		
Series	Dusplay the series of the External Device.		
Expanded Memory Address (HEX)	Enter the address of the expanded memory with "00000000 to FFFFFFFF" (HEX).		

Option

To display the setting screen, touch [Device/PLC Settings] from [Peripheral Equipment Settings]. Touch the External Device you want to set from the displayed list, and touch [Option].

Comm.	Device	Option		
S10 Series SIO	;	;	[COM1]	Page 1/1
	RI / VCC In the case the 9th pir Power Suppl RS232C Isol it to VCC.	● RI of RS232C, you to RI(Input) or y). If you use th ation Unit, plea	○ VCC can select • VCC(5V ne Digital's nse select	0000 /00 /04
	Exit		Back	22:31:36

Setup Items	Setup Description
RI/VCC	You can switch RI/VCC of the 9th pin when you select RS232C for SIO type. When you connect to IPC, you need to use the IPC change switch to change RI/5V. Please refer to the manual of IPC for details.

5 Cable Diagram

The cable diagram shown below may be different from the cable diagram recommended by Hitachi, Ltd.. Please be assured there is no operational problem in applying the cable diagram shown in this manual.

- The FG pin of the main body of the External Device must be D-class grounded. Please refer to the manual of the External Device for more details.
- SG and FG are connected inside the Display. When connecting SG to the External Device, design the system not to form short-circuit loop.
- If the communication is not stable due to the noise or other factors, connect the isolation unit.

Cable Diagram 1

Display (Connection Port)		Cable	Remarks
GP ^{*1} (COM1) AGP-3302B (COM2) ST ^{*2} (COM2) IPC ^{*3}	А	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Connector terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	
	В	Your own cable	
GP ^{*4} (COM2)	С	Online adapter by Pro-face CA4-ADPONL-01 + Connector terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	Cable length: 500m or less
	D	Online adapter by Pro-face CA4-ADPONL-01 + Your own cable	

*1 All GP models except AGP-3302B

- *2 All ST models except AST-3211A
- *3 Available to use only the COM ports which can communicate in RS422/485(4 wire). ⁽³⁾ ■ IPC COM Port" (page 4)
- *4 All GP models except GP-3200 Series and AGP-3302B
 - Termination resistance (100Ω) between RD-H and RD-L is incorporated in the LPU module and LQE565 of the External Device.

A) When using the COM port conversion adapter (CA3-ADPCOM-01), the connector terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face and your own cable



B) When your own cable is used



Your own cable

C) When using the online adapter (CA4-ADPONL-01), the connector terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face and your own cable



D) When using the online adapter (CA4-ADPONL-01) by Pro-face and your own cable



Cable Diagram 2

Display (Connection Port)	Cable	Remarks
GP (COM1) ST (COM1) IPC ^{*1} PC/AT	Your own cable	Cable length: 15m or less

*1 Available to use only the COM ports which can communicate in RS232C. ⁽³⁾ "■ IPC COM Port" (page 4)

Г	Dis Dis-Sub 9n	play in (socket	t)			г	Externa	Il Device
L	Pin	Signal name	ĺ	Shie	eld	Ī	Pin	Signal name
	2	RD(RXD)		/	-/		3	SD
	3	SD(TXD)	1	<u> </u>	\rightarrow		2	RD
	4	ER(DTR)	\vdash	 	+		6	DR
	5	SG]				5	SG
	7	RS(RTS)	┝╇		+		1	CD
	8	CS(CTS)]↓	Ì	$\langle /$	\square	7	RS
	Shell	FG	<u> </u>	<u> </u>			8	CS
	•							
				Your ov	/n cable			



Cable Diagram 3

Display (Connection Port)		Cable	Remarks
GP ^{*1} (COM1) AGP-3302B (COM2) ST ^{*2} (COM2) IPC ^{*3}	А	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Connector terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	
	В	Your own cable	Please refer to the
GP ^{*4} (COM2)	С	Online adapter by Pro-face CA4-ADPONL-01 + Connector terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	manual of the External Device for cable length.
	D	Online adapter by Pro-face CA4-ADPONL-01 + Your own cable	

*1 All GP models except AGP-3302B

*2 All ST models except AST-3211A

- *3 Available to use only the COM ports which can communicate in RS422/485(4 wire). [™] ■ IPC COM Port" (page 4)
- *4 All GP models except GP-3200 Series and AGP-3302B
 - A) When using the COM port conversion adapter (CA3-ADPCOM-01), the connector terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face and your own cable



B) When your own cable is used



C) When using the online adapter (CA4-ADPONL-01), the connector terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face and your own cable



D) When using the online adapter (CA4-ADPONL-01) by Pro-face and your own cable



6 Supported Device

Range of supported device address is shown in the table below. Note that the actually supported range varies depending on the External Device to be used. Please check the actual range in the manual of your External Device.

6.1 S10V Series

: This address can be specified as system data area.

Device	Bit Address	Word Address	32 bits	Remarks
External Input	X000 - XFFF	XW000 - XWFF0		*1 *1
External Output	Y000 - YFFF	YW000 - YWFF0		*1 *1
Internal Register	R000 - RFFF	RW000 - RWFF0		*1 *1
Global Link Register	G000 - GFFF	GW000 - GWFF0		*1 *1
Event Register	E000 - E3FF	EW000 - EW3F0		*1 *1
Event Register	EW400 - EWFFF	EW400 - EWFF0		*1 *2
Keep Relay	K000 - KFFF	KW000 - KWFF0		*1 *1
System Register	S000 - SBFF	SW000 - SWBF0	[Н/Ц	*1 *3
On-delay Timer	T000 - T7FF	TW000 - TW7F0		*1 *4
One-shot Timer	U000 - U0FF	UW000 - UW0F0		*1 *1
Up-Down Counter	C000 - C0FF	CW000 - CW0F0		*1 *1
Transfer Register	J000 - JFFF	JW000 - JWFF0		*1 *1
Receive Register	Q000 - QFFF	QW000 - QWFF0		*1 *1
Extended Internal Register	M000 - MFFF	MW000 - MWFF0		*1 *1
Extended Internal Register	A000 - AFFF	AW000 - AWFF0		*1 *1

Device	Bit Address	Word Address	32 bits	Remarks
Timer (Elapsed Value)	-	TC000 - TC1FF		
Timer (Setup Value)	-	TS000 - TS1FF		
One-shot Timer (Elapsed Value)	-	UC000 - UC0FF	rt / Hu	
One-shot Timer (Setup Value)	-	US000 - US0FF	2711	
Counter (Elapsed Value)	-	CC000 - CC0FF		
Counter (Setup Value)	-	CS000 - CS0FF		
Work Register	-	FW000 - FWBFF		Bit F
Data Register	-	DW000 - DWFFF		Bit F
Work Register	LB0000 - LBFFFF	LBW0000 - LBWFFF0	1	<u>***</u> 0]
Work Register for Ladder Converter	LR0000 - LR0FFF	LRW0000 - LRW0FF0		*** 0
Work Register for Ladder Converter (Edge)	LV0000 - LV0FFF	LVW0000 - LVW0FF0		*** 0]
Work Register for Word	-	LWW0000 - LWWFFFF		_{₿it} F]
Work Register for Long Word	-	LLL0000 - LLL1FFF	[H / L]	<u>₿ i t</u> 31 *5
Work Register for Floating Point	-	LF0000 - LF1FFF		*5 *6
Work Register for Word (Save during power OFF)	-	LXW0000 - LXW3FFF		Bit F
Work Register for Long Word (Save during power OFF)	-	LML0000 - LML1FFF		<u>₿ i t</u> 31 *5
Work Register for Floating Point (Save during power OFF)	-	LG0000 - LG1FFF		*5 *6
Direct Memory Address ^{*7}	-	DM00000000 - DMFFFFFFE		<u>₿; ₹</u> [÷ 2]

*1 According to External Device specification, the highest bit is "0" and the lowest bit is "15". When the highest bit turns ON, that bit is considered the highest and "32768" is written to that word.

Ex. When writing bit from the Display is "X000(ON)," the External Device's bit device "X000" turns ON. At this time the Display and External Device word device "XW000" become "32768(0x8000)".

- *2 The higher and lower bit order will be reversed. When EW400 is turned ON, E40F will be turned ON on the External Device.
- *3 Data cannot be written.
- *4 If the CPU version is prior to Ver.1, the bit address becomes "T000 to T1FF" and the word address becomes "TW000 to TW1F0."
- *5 A 32-bit device.
- *6 A float decimal point device (32 bits).
- *7 Used to access the memory address of the External Device.

IMPORTAN	• When you access the External Device using the Direct Memory Address, do not access the memory address that the system uses. If you conduct it, an error may occur. For details concerning the address, refer to the manual attached to the External Device.
NOTE	Please refer to the GP-Pro EX Reference Manual for system data area.
	Cf. GP-Pro EX Reference Manual "Appendix 1.4 LS Area (Direct Access Method)"
	• Please refer to the precautions on manual notation for icons in the table.
	"Manual Symbols and Terminology"

6.2 HIDIC-S10 α

		: This address can be	specified as sy	stem data area.
Device	Bit Address	Word Address	32 bits	Remarks
External Input	X000 - XFFF	XW000 - XWFF0		*1 *1
External Output	Y000 - YFFF	YW000 - YWFF0		*1 *1
Intermediate Register	R000 - RFFF	RW000 - RWFF0		*1 *1
Global Link Register	G000 - GFFF	GW000 - GWFF0		*1 *1
Event Register	E000 - E3FF	EW000 - EW3F0		*1 *1
Keep Relay	K000 - KFFF	KW000 - KWFF0		*1 *1
System Register	S000 - SBFF	SW000 - SWBF0	н/ц	**** 0 *1 *2
Timer	T000 - T1FF	TW000 - TW1F0		*1 *1
One Shot	U000 - U0FF	UW000 - UW0F0		**** 0 *1
Counter	C000 - C0FF	CW000 - CW0F0		*1 *1
Transfer Register	J000 - JFFF	JW000 - JWFF0		*1 *1
Receive Register	Q000 - QFFF	QW000 - QWFF0		*1 *1
Extended Internal Register	M000 - MFFF	MW000 - MWFF0		*1 *1
On-Delay Timer (Elapsed Value)	-	TC000 - TC1FF		
On-Delay Timer (Setup Value)	-	TS000 - TS1FF	1	
One Shot Timer (Elapsed Value)	-	UC000 - UC0FF	1	
One Shot Timer (Setup Value)	-	US000 - US0FF	[L/H]	
Up/Down Counter (Elapsed Value)	-	CC000 - CC0FF		
Up/Down Counter (Setup Value)	-	CS000 - CS0FF		

Device	Bit Address	Word Address	32 bits	Remarks
Function Work Register	-	FW000 - FWBFF	_	Bit F
Function Data Register	-	DW000 - DWFFF		Bit F
Extended Register	-	MS000 - MSFFF	[H/L]	<u>віт</u> *3
Direct Memory Address ^{*4}	-	DM00000000 - DMFFFFFFFE		

*1 According to External Device specification, the highest bit is "0" and the lowest bit is "15". When the highest bit turns ON, that bit is considered the highest and "32768" is written to that word.

Ex. When writing bit from the Display is "X000(ON)," the External Device's bit device "X000" turns ON. At this time the Display and External Device word device "XW000" become "32768(0x8000)".

*2 Data cannot be written.

 *3 In expanded memory in External Device (1 address = 8 bits), 4096 Words can be accessed. Set top address of expanded memory to be accessed by "Device Setting."
 Refer to the External Device manual for how to set address area for External Device expanded memory.

♦ Accessed Expanded Memory Address Access Address (The absolute address in External Device) = (1) + (2) + (3)

(1)	Top Address (HEX)	This value is been set in " ■ Device Setting" (page 18).
(2)	100000 (HEX)	Offset value
(3)	Device Address \times 2 (HEX)	Since the External Device uses 8 bits for its expanded memory address, this number is doubled.

Ex. When the Top Address is "180000" and the Device Address is "MS1FF". Then the absolute address in External Device (Access Address) is "180000 + 100000 + 3FE = 2803FE".

NOTE	• An error may occur on the External Device or Display if the area that is being used for
	programs on the External Device is accessed from the Display.
	We recommend that you set [Expanded Memory Addresses] to an area that is not used by the
	External Device.

*4 Used to access the memory address of the External Device.

IMPORTANT	• When you access the External Device using the Direct Memory Address, do not access the memory address that the system uses. If you conduct it, an error may occur. For details concerning the address, refer to the manual attached to the External Device.
NOTE	• Please refer to the GP-Pro EX Reference Manual for system data area.
·	Cf. GP-Pro EX Reference Manual "Appendix 1.4 LS Area (Direct Access Method)"
	• Please refer to the precautions on manual notation for icons in the table.
	"Manual Symbols and Terminology"

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6.3 S10mini Series

. This address can be specified as system data are					
Device	Bit Address	Word Address	32 bits	Remarks	
External Input	X000 - XFFF	XW000 - XWFF0		*1 *1	
External Output	Y000 - YFFF	YW000 - YWFF0		*1 *1	
Internal Register	R000 - RFFF	RW000 - RWFF0		*1 *1	
Global Link Register	G000 - GFFF	GW000 - GWFF0		*1 *1	
Event Register	E000 - E3FF	EW000 - EW3F0		*1 *1	
Event Register	EW400 - EWFFF	EW400 - EWFF0		*1 *2	
Keep Relay	K000 - KFFF	KW000 - KWFF0	TH (1)	*1 *1	
System Register	S000 - SBFF	SW000 - SWBF0		*1 *3	
On-Delay Timer	T000 - T1FF	TW000 - TW1F0		*1 *1	
One Shot Timer	U000 - U0FF	UW000 - UW0F0		*1 *1	
Up/Down Counter	C000 - C0FF	CW000 - CW0F0		*1 *1	
Transfer Register	J000 - JFFF	JW000 - JWFF0		*1 *1	
Receive Register	Q000 - QFFF	QW000 - QWFF0		*1 *1	
Extended Internal Register	M000 - MFFF	MW000 - MWFF0		*1 *1	
On-Delay Timer (Elapsed Value)	-	TC000 - TC1FF			
On-Delay Timer (Setup Value)	-	TS000 - TS1FF			
One Shot Timer (Elapsed Value)	-	UC000 - UC0FF			
One Shot Timer (Setup Value)	-	US000 - US0FF	[L/H]		
Up/Down Counter (Elapsed Value)	-	CC000 - CC0FF			
Up/Down Counter (Setup Value)	-	CS000 - CS0FF]		

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Device	Bit Address	Word Address	32 bits	Remarks
Work Register	-	FW000 - FWBFF		вit
Data Register	-	DW000 - DWFFF		вit
Extended Register	-	MS000 - MSFFF	ſΗΙЦ	<u>віт</u> *4
Direct Memory Address ^{*5}	-	DM00000000 - DMFFFFFFFE		<u>⊪;</u> , F) (÷ 2)

*1 According to External Device specification, the highest bit is "0" and the lowest bit is "15". When the highest bit turns ON, that bit is considered the highest and "32768" is written to that word.

Ex. When writing bit from the Display is "X000(ON)," the External Device's bit device "X000" turns ON. At this time the Display and External Device word device "XW000" become "32768(0x8000)".

- *2 The higher and lower bit order will be reversed. When EW400 is turned ON, E40F will be turned ON on the External Device.
- *3 Data cannot be written.

*4 In expanded memory in External Device (1 address = 8 bits), 4096 Words can be accessed.
 Set top address of expanded memory to be accessed by "Device Setting."
 Refer to the External Device manual for how to set address area for External Device expanded memory.

٠	Accessed Expanded Memory Address
	Access Address (The absolute address in External Device) = $(1) + (2) + (3)$

(1)	Top Address (HEX)	This value is been set in " ■ Device Setting" (page 18).
(2)	100000 (HEX)	Offset value
(3)	Device Address \times 2 (HEX)	Since the External Device uses 8 bits for its expanded memory address, this number is doubled.

Ex. When the Top Address is "180000" and the Device Address is "MS1FF". Then the absolute address in External Device (Access Address) is "180000 + 100000 + 3FE = 2803FE".

NOTE		An error may occur on the External Device or Display if the area that is being used for
		programs on the External Device is accessed from the Display.
		We recommend that you set [Expanded Memory Addresses] to an area that is not used by the
		External Device.

*5 Used to access the memory address of the External Device.

IMPORTANT	• When you access the External Device using the Direct Memory Address, do not access the memory address that the system uses. If you conduct it, an error may occur. For details concerning the address, refer to the manual attached to the External Device.
NOTE	Please refer to the GP-Pro EX Reference Manual for system data area.
	Cf. GP-Pro EX Reference Manual "Appendix 1.4 LS Area (Direct Access Method)"
	• Please refer to the precautions on manual notation for icons in the table.
	"Manual Symbols and Terminology"

7 Device Code and Address Code

Use device code and address code when you select "Device Type & Address" for the address type in data displays.

Device	Device Name	Device Code (HEX)	Address Code
External Input	Х	0080	Value of word address divided by 0x10
	XW		
	Y	0081	Value of word address divided by 0x10
	YW	0001	value of word address divided by oxio
Internal Register	R	0082	Value of word address divided by 0x10
	RW	0002	value of word address divided by 0x10
Global Link Register	G	0083	Value of word address divided by 0x10
	GW	0005	value of word address divided by 0x10
Event Register	Е	0084	Value of word address divided by 0x10
	EW	0004	value of word address divided by 0x10
Event Register	EW	0091	Value of word address divided by 0x10
	EW	0091	value of word address divided by 0x10
Keen Belay	К	0085	Value of word address divided by 0x10
Кеер Кеюу	KW		
System Register	S	0086	Value of word address divided by 0x10
System Register	SW		
On-delay Timer	Т	0087	Value of word address divided by 0x10
	TW		
Ope-shot Timer	U	0088	Value of word address divided by 0x10
	UW	0088	
Lip-Down Counter	С	0089	Value of word address divided by 0x10
op-bown counter	CW	0007	value of word address divided by 0x10
Transfer Register	J	008 4	Value of word address divided by 0x10
	JW	0084	value of word address divided by 0x10
Pacaiva Ragistar	Q	008B	Value of word address divided by 0x10
	QW	0000	
Extended Internal Register	М	0080	Value of word address distribution of 10
	MW	0000	value of word address divided by 0x10
Extended Internal Pegister	А	0090	Value of word address divided by 0v10
Extended Internal Register	AW	008D	value of word address divided by 0X10

Device	Device Name	Device Code (HEX)	Address Code
Timer (Elapsed Value)	TC	0060	Word Address
Timer (Setup Value)	TS	0061	Word Address
One-shot Timer (Elapsed Value)	UC	0062	Word Address
One-shot Timer (Setup Value)	US	0063	Word Address
Counter (Elapsed Value)	CC	0064	Word Address
Counter (Setup Value)	CS	0065	Word Address
Work Register	FW	0001	Word Address
Data Register	DW	0000	Word Address
Work Register	LB	008E	Value of word address divided by 0x10
Work Register	LBW	0001	value of word address divided by 0x10
Work Register for Ladder Converter	LR	008E	Value of word address divided by 0x10
Work Register for Ladder Converter	LRW	0001	value of word address divided by 0x10
Work Register for Ladder Converter	LV	0000	Value of word address divided by 0x10
(Edge)	LVW	0090	value of word address divided by 0x10
Work Register for Word	LWW	0002	Word Address
Work Register for Long Word	LLL	0003	Word Address
Work Register for Floating Point	LF	0066	Word Address
Work Register for Word (Save during power OFF)	LXW	0004	Word Address
Work Register for Long Word (Save during power OFF)	LML	0005	Word Address
Work Register for Floating Point (Save during power OFF)	LG	0067	Word Address
Direct Memory Address (DM00000000 - DM0FFFFFFE)		0007	
Direct Memory Address (DM10000000 - DM1FFFFFFE)		0008	
Direct Memory Address (DM20000000 - DM2FFFFFFE)		0009	
Direct Memory Address (DM30000000 - DM3FFFFFFE)	DM	000A	Value of word address divided by 2
Direct Memory Address (DM40000000 - DM4FFFFFFE)	DM .	000B	value of word address drvided by 2
Direct Memory Address (DM50000000 - DM5FFFFFFE)		000C	
Direct Memory Address (DM60000000 - DM6FFFFFFE)		000D	
Direct Memory Address (DM70000000 - DM7FFFFFFE)		000E	

Device	Device Name	Device Code (HEX)	Address Code
Direct Memory Address (DM80000000 - DM8FFFFFFE)	DM -	000F	
Direct Memory Address (DM90000000 - DM9FFFFFFE)		0010	
Direct Memory Address (DMA0000000 - DMAFFFFFFE)		0011	
Direct Memory Address (DMB0000000 - DMBFFFFFFE)		0012	Value of word address divided by 2
Direct Memory Address (DMC0000000 - DMCFFFFFFE)		0013	value of word address drvided by 2
Direct Memory Address (DMD0000000 - DMDFFFFFFE)		0014	
Direct Memory Address (DME0000000 - DMEFFFFFFE)		0015	
Direct Memory Address (DMF0000000 - DMFFFFFFFE)		0016	

7.2 HIDIC-S10α

Device	Device Name	Device Code (HEX)	Address Code
	Х	0080	Value of word address divided by 0v10
	XW	0080	value of word address divided by 0x10
	Y	0091	
	YW	0001	value of word address divided by 0x10
Intermediate Register	R	0082	Value of word address divided by 0x10
	RW	0082	value of word address divided by 0x10
Global Link Register	G	0083	Value of word address divided by 0x10
Global Link Register	GW	0085	value of word address divided by 0x10
Event Register	Е	0084	Value of word address divided by 0x10
	EW	0084	value of word address divided by 0x10
Keen Belay	К	0085	Value of word address divided by 0x10
	KW	0085	value of word address divided by 0x10
System Register	S	0086	Value of word address divided by 0x10
System Register	SW	0000	value of word address divided by 0x10
Timer	Т	0087	Value of word address divided by 0x10
	TW		
One Shot	U	0088	Value of word address divided by 0x10
	UW	0000	
Counter	С	0089	Value of word address divided by 0x10
	CW	0005	
Transfer Register	J	008A	Value of word address divided by 0x10
	JW		value of word address divided by 0x10
Receive Register	Q	008B	Value of word address divided by 0x10
	QW	0001	value of word address divided by 0x10
Extended Internal Register	М	008C	Value of word address divided by 0x10
	MW	00000	value of word address divided by 0x10
On-Delay Timer (Elapsed Value)	TC	0060	Word Address
On-Delay Timer (Setup Value)	TS	0061	Word Address
One Shot Timer (Elapsed Value)	UC	0062	Word Address
One Shot Timer (Setup Value)	US	0063	Word Address
Up/Down Counter (Elapsed Value)	CC	0064	Word Address
Up/Down Counter (Setup Value)	CS	0065	Word Address
Function Work Register	FW	0001	Word Address
Function Data Register	DW	0000	Word Address

Device	Device Name	Device Code (HEX)	Address Code
Extended Register	MS	0006	Word Address
Direct Memory Address (DM00000000 - DM0FFFFFFE)		0007	
Direct Memory Address (DM10000000 - DM1FFFFFFE)		0008	
Direct Memory Address (DM20000000 - DM2FFFFFFE)		0009	
Direct Memory Address (DM30000000 - DM3FFFFFFE)		000A	
Direct Memory Address (DM40000000 - DM4FFFFFFE)		000B	
Direct Memory Address (DM50000000 - DM5FFFFFFE)		000C	
Direct Memory Address (DM60000000 - DM6FFFFFFE)		000D	
Direct Memory Address (DM70000000 - DM7FFFFFFE)	DM	000E	Value of word address divided by 2
Direct Memory Address (DM80000000 - DM8FFFFFFE)	DM	000F	value of word address drvided by 2
Direct Memory Address (DM90000000 - DM9FFFFFFE)		0010	
Direct Memory Address (DMA0000000 - DMAFFFFFE)		0011	
Direct Memory Address (DMB0000000 - DMBFFFFFFE)		0012	
Direct Memory Address (DMC0000000 - DMCFFFFFFE)		0013	
Direct Memory Address (DMD0000000 - DMDFFFFFE)		0014	
Direct Memory Address (DME0000000 - DMEFFFFFE)		0015	
Direct Memory Address (DMF0000000 - DMFFFFFFFE)		0016	

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Device	Device Name	Device Code (HEX)	Address Code
External Input	Х	0080	Value of word address divided by 0x10
	XW		
External Output	Y	0081	Value of word address divided by 0x10
	YW		
Internal Register	R	0082	Value of word address divided by 0x10
	RW		
Global Link Register	G	0083	Value of word address divided by 0x10
Global Link Register	GW		
Event Register	Е	0094	Value of word address divided by 0x10
	EW	0084	
Event Pegister	EW	0001	Value of word address divided by 0x10
	EW	0091	
Keen Belay	K	0085	Value of word address divided by 0x10
Keep Kelay	KW	0085	
System Pagister	S	0086	Value of word address divided by 0x10
System Register	SW	0080	
	Т	0087	Value of word address divided by 0x10
	TW		
One Shot Timer	U	0088	Value of word address divided by 0x10
	UW		
Llp/Down Counter	С	0089	Value of word address divided by 0x10
Op/Down Counter	CW		
Transfer Register	J	008A	Value of word address divided by 0x10
	JW		
Receive Register	Q	0090	Value of word address divided by 0x10
	QW	0000	
Extended Internal Register	М	008C	Value of word address divided by 0x10
	MW		
On-Delay Timer (Elapsed Value)	TC	0060	Word Address
On-Delay Timer (Setup Value)	TS	0061	Word Address
One Shot Timer (Elapsed Value)	UC	0062	Word Address
One Shot Timer (Setup Value)	US	0063	Word Address
Up/Down Counter (Elapsed Value)	CC	0064	Word Address
Up/Down Counter (Setup Value)	CS	0065	Word Address

Device	Device Name	Device Code (HEX)	Address Code
Work Register	FW	0001	Word Address
Data Register	DW	0000	Word Address
Extended Register	MS	0006	Word Address
Direct Memory Address (DM00000000 - DM0FFFFFFE)	DM	0007	
Direct Memory Address (DM10000000 - DM1FFFFFFE)		0008	
Direct Memory Address (DM20000000 - DM2FFFFFFE)		0009	
Direct Memory Address (DM30000000 - DM3FFFFFFE)		000A	
Direct Memory Address (DM40000000 - DM4FFFFFFE)		000B	
Direct Memory Address (DM50000000 - DM5FFFFFFE)		000C	
Direct Memory Address (DM60000000 - DM6FFFFFFE)		000D	
Direct Memory Address (DM70000000 - DM7FFFFFFE)		000E	Value of word address divided by 2
Direct Memory Address (DM80000000 - DM8FFFFFFE)		000F	value of word address drvided by 2
Direct Memory Address (DM90000000 - DM9FFFFFFE)		0010	
Direct Memory Address (DMA0000000 - DMAFFFFFFE)		0011	
Direct Memory Address (DMB0000000 - DMBFFFFFFE)		0012	
Direct Memory Address (DMC0000000 - DMCFFFFFFE)		0013	
Direct Memory Address (DMD0000000 - DMDFFFFFFE)		0014	
Direct Memory Address (DME0000000 - DMEFFFFFFE)		0015	
Direct Memory Address (DMF0000000 - DMFFFFFFFE)		0016	

8 Error Messages

Error messages are displayed on the Display screen as follows: "No. : Device Name: Error Message(Error Occurrence Area)". Each description is shown below.

Item	Description		
No.	Error No.		
Device Name	Name of the External Device where an error occurs. Device name is a title of the External Device set with GP-Pro EX. (Initial value [PLC1])		
Error Message	Displays messages related to the error that has occurred.		
Error Occurrence Area	Displays IP address or device address of the External Device where an error occurs, or error codes received from the External Device.		
	 NOTE IP address is displayed such as "IP address (Decimal): MAC address (Hex)". Device address is displayed as "Address: Device address". Received error codes are displayed such as "Decimal [Hex]". 		

Display Examples of Error Messages

"RHAA035: PLC1: Error has been responded for device write command (Error Code: 2 [02H])"

NOTE	Refer to your External Device manual for details on received error codes.
	• Refer to "When an error is displayed (Error Code List)" in "Maintenance/Troubleshooting
	Manual" for details on the error messages common to the driver.