YASKAWA Electric Corporation

Inverter SIO Driver

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Introduction

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

In this manual, the connection procedure is described in the sections identified below.



1 System Configuration

The following table lists system configurations for connecting YASKAWA Electric Corporation External Device and the Display.

Series	Inverter ^{*1}	Link I/F	SIO Type	Setting Example	Cable Diagram
Varispeed E7	CIMR-	Terminal Block on the	RS-422/485 (4wire)	Setting Example 1 (page 9)	Cable Diagram 1 (page 49)
vanspeed i 7	F7A0000	inverter	RS-422/485 (2wire)	Setting Example 2 (page 11)	Cable Diagram 2 (page 54)
Varispeed G7	CIMR-	Terminal Block on the	RS-422/485 (4wire)	Setting Example 3 (page 13)	Cable Diagram 1 (page 49)
vanspeed Gr	G7A□□□□	inverter	RS-422/485 (2wire)	Setting Example 4 (page 15)	Cable Diagram 2 (page 54)
CIMR- Terminal Block on the		Terminal Block on the	RS-422/485 (4wire)	Setting Example 5 (page 17)	Cable Diagram 1 (page 49)
V3 mm 37	J7□A□□□□	SI-485/J7 RS-422/485 interface card	RS-422/485 (2wire)	Setting Example 6 (page 19)	Cable Diagram 2 (page 54)
VS mini V7/	CIMR- V7□A□□□□	Terminal Block on the inverter	RS-422/485 (4wire)	Setting Example 7 (page 21)	Cable Diagram 1 (page 49)
VS-606V7			RS-422/485 (2wire)	Setting Example 8 (page 23)	Cable Diagram 2 (page 54)
Varianood EZS	CIMR-	Terminal Block on the	RS-422/485 (4wire)	Setting Example 9 (page 25)	Cable Diagram 1 (page 49)
vanspeed F73	F7S□□□	inverter	RS-422/485 (2wire)	Setting Example 10 (page 27)	Cable Diagram 2 (page 54)
Varispood I 7	CIMR- L7B□□□□	Terminal Block on the inverter	RS-422/485 (4wire)	Setting Example 11 (page 29)	Cable Diagram 1 (page 49)
vanspeed L7			RS-422/485 (2wire)	Setting Example 12 (page 31)	Cable Diagram 2 (page 54)
Varispeed AC	CIMR- ACA□□□□	Terminal Block on the	RS-422/485 (4wire)	Setting Example 13 (page 33)	Cable Diagram 1 (page 49)
		inverter	RS-422/485 (2wire)	Setting Example 14 (page 35)	Cable Diagram 2 (page 54)

Series	Inverter ^{*1}	Link I/F	SIO Type	Setting Example	Cable Diagram
V(1000	CIMR-	Terminal Block on the	RS-422/485 (4wire)	Setting Example 15 (page 37)	Cable Diagram 1 (page 49)
VADADDD		inverter	RS-422/485 (2wire)	Setting Example 16 (page 39)	Cable Diagram 2 (page 54)
J1000	CIMR-	Terminal Block on the SI-485/J RS-422/485 interface card	RS-422/485 (4wire)	Setting Example 17 (page 41)	Cable Diagram 1 (page 49)
	JADADDD		RS-422/485 (2wire)	Setting Example 18 (page 43)	Cable Diagram 2 (page 54)

*1 The \Box symbol in the inverter model names represents the maximum applicable motor capacity and other specifications.

- 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	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 It is necessary to 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 (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		

*1 It is necessary to turn ON the set value, only when using PS-3450A and PS-3451A.

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

DIP switch	Setting	Description	
1	OFF	Reserved (always OFF)	
2	ON	SIQ type: RS_422/485	
3	ON	510 type. R5-422/403	
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	KS (K15) Auto control mode. Disabled	

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

DIP switch	Setting	Description	
1	OFF	Reserved (always OFF)	
2	ON	SIO type: P.S. 422/485	
3	ON	510 type. K5-422/465	
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	- KS (K15) Auto control mode. Endoled	

2 External Devices Selection

Select the External Device to be connected to the Display.

💣 New Project File					×
GP-Pro	Device/PLI				
	Maker	YASKAWA Electric Co	orporation		•
	Series	INVERTER SIO			•
	🗖 Use S	ystem Area	В	efer to the manual of thi	s Device/PLC
	Connection	Method			
	Port	COM1	•		
				<u>Go to Dev</u>	ice/PLC Manual
Back (<u>B)</u> Con	munication Settings	New Logic	New Screen	Cancel

Setup Items	Setup Description
Maker	Select the maker of the External Device to be connected. Select "YASKAWA Electric Corporation".
Series	Select a model (series) of the External Device to be connected and connection method. Select "INVERTER SIO". In System configuration, check to make sure the external device to which you are connecting is supported in "INVERTER SIO". "I System Configuration" (page 3)
Use System Area	Not available in this driver.
Port	Select the Display port to be connected to the External Device.

3 Communication Settings

This section provides examples of communication settings recommended by Pro-face for the Display and the External Device.

3.1 Setting Example 1

■ GP-Pro EX Settings

Communication Settings

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

Device/PLC 1					
Summary	Change Device/PLC				
Maker YASKAV	VA Electric Corporation Series INVERTER SIO Port COM1				
Text Data Mode	1 Change				
Communication Settings					
SIO Type	C RS232C C RS422/485(2wire) © RS422/485(4wire)				
Speed	9600				
Data Length	C 7 0 8				
Parity	C NONE C EVEN C ODD				
Stop Bit	© 1 © 2				
Flow Control	NONE C ER(DTR/CTS) C XON/XOFF				
Timeout	3 <u>*</u> (sec)				
Retry	2 *				
Wait To Send	10 * (ms)				
RI / VCC	C RI C VCC				
In the case of RS or VCC (5V Powe Isolation Unit, plea	232C, you can select the 9th pin to RI (Input) r Supply). If you use the Digital's RS232C ase select it to VCC. Default				
Device-Specific Settings					
Allowable Number of Devices/PLCs 16					
Number Device N	Vame Settings				
	Joenes-vanspeeu nr, stave Address(DEC)=1				

Device Setting

To display the [Individual Device Settings] dialog box, select the external device and click in [Setting] from [Device-Specific Settings] in the [Device/PLC] window. To connect multiple External Devices, click from [Device-Specific Settings] in the [Device/PLC] window to add another External Device.

💰 Individual Device Settings 🛛 🛛 🔀			
PLC1			
Series	Varispeed F7		
If you change series, p address settings.	olease reconfirm all		
Slave Address(DEC)	1		
	Default		
0	(0) Cancel		

External Device Settings

To configure communication settings, use the MENU, DATA/ENTER, Up, Down, or Shift/RESET key on the digital operator located on the front of the inverter. Refer to your External Device manual for details.

- 1 Press the MENU key to select [Programming].
- 2 Press the DATA/ENTER key.
- **3** Press the Up key to display the parameter you want to set.
- 4 Press the DATA/ENTER key.
- 5 Press the Up, Down, or Shift/RESET key to display the setting value.

Parameter No.	Settings	Setup Description
H5-01	01	Slave address (HEX)
H5-02	3	Communication speed selection
H5-03	1	Communication parity selection
H5-04	3	Stopping method after communication error
H5-05	1	Communication error detection selection
H5-06	5	Send wait time
H5-07	1	RTS control ON/OFF

- 6 Press the DATA/ENTER key.
- **7** Reboot the External Device.

3.2 Setting Example 2

GP-Pro EX Settings

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

Device/PLC 1		
Summary		Change Device/PLC
Maker YASKAW	/A Electric Corpora	tion Series INVERTER SIO Port COM1
Text Data Mode	1 Change	
Communication Settings		
SIO Type	C RS232C	RS422/485(2wire) C RS422/485(4wire)
Speed	9600	•
Data Length	O 7	• 8
Parity	C NONE	EVEN C ODD
Stop Bit	• 1	0 2
Flow Control	NONE	C ER(DTR/CTS) C XON/XOFF
Timeout	3 🕂	(sec)
Retry	2 +	
Wait To Send	10 📫	(ms)
RI / VCC	🖲 BL	O VCC
In the case of RS2 or VCC (5V Power Isolation Unit, plea:	32C, you can seler Supply). If you use se select it to VCC.	et the 9th pin to RI (Input) e the Digital's RS232C Default
Device-Specific Settings		
Allowable Number of	Devices/PLCs	16 📊
Number Device N	ame	Settings
I IPLC1		[]]Series=Varispeed F7,Slave Address(DEC)=1

Device Setting

To display the [Individual Device Settings] dialog box, select the external device and click [Device-Specific Settings] in the [Device/PLC] window. To connect multiple External Devices, click from [Device-Specific Settings] in the [Device/PLC] window to add another External Device.

Individual Device !	Settings	×
PLC1		
Series	Varispeed F	7 💌
lf you change series, p address settings.	olease reconfi	rm all
Slave Address(DEC)	1	▲ ▼
		Default
01	K (0)	Cancel

To configure communication settings, use the MENU, DATA/ENTER, Up, Down, or Shift/RESET key on the digital operator located on the front of the inverter. Refer to your External Device manual for details.

- 1 Press the MENU key to select [Programming].
- 2 Press the DATA/ENTER key.
- **3** Press the Up key to display the parameter you want to set.
- 4 Press the DATA/ENTER key.
- 5 Press the Up, Down, or Shift/RESET key to display the setting value.

Parameter No.	Settings	Setup Description
H5-01	01	Slave address (HEX)
H5-02	3	Communication speed selection
H5-03	1	Communication parity selection
H5-04	3	Stopping method after communication error
H5-05	1	Communication error detection selection
H5-06	5	Send wait time
H5-07	1	RTS control ON/OFF

- 6 Press the DATA/ENTER key.
- **7** Reboot the External Device.

3.3 Setting Example 3

GP-Pro EX Settings

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

Device/PLC1	
Summaru	Change Device /PLC
Maker JYASKAWA Electric Corporation Series JINVERTER SIU	Port JUUMI
Text Data Mode 1 Change	
Communication Settings	
SID Type C RS232C C RS422/485(2wire) C RS422/485(4wire)	
Speed 9600 💌	
Data Length C 7 📀 8	
Parity C NONE C EVEN C ODD	
Stop Bit	
Flow Control O NONE O ER(DTR/CTS) O X0N/X0FF	
Timeout 3 🛨 (sec)	
Retry 2	
Wait To Send 10 👘 (ms)	
RI / VCC © RI C VCC	
In the case of RS232C, you can select the 9th pin to RI (Input)	
or VLC (5V Power Supply). If you use the Digital's HS232C Isolation Unit, please select it to VCC. Default	
	1
Allowable Number of Devices/PLCs 16	
Number Device Name Settings	
1 PLC1 In Series=Varispeed G7,Slave Address(DEC)=1	

Device Setting

To display the [Individual Device Settings] dialog box, select the external device and click [Device-Specific Settings] in the [Device/PLC] window. To connect multiple External Devices, click from [Device-Specific Settings] in the [Device/PLC] window to add another External Device.

💰 Individual Device :	Settings		×
PLC1			
Series	Varispeed	G7	•
If you change series, p address settings.	olease recor	nfirm all	
Slave Address(DEC)	1		÷
		Def	ault
0	K (0)	Cance	

To configure communication settings, use the MENU, DATA/ENTER, Up, Down, or Shift/RESET key on the digital operator located on the front of the inverter. Refer to your External Device manual for details.

- 1 Press the MENU key to select [Programming].
- 2 Press the DATA/ENTER key.
- **3** Press the Up key to display the parameter you want to set.
- 4 Press the DATA/ENTER key.
- 5 Press the Up, Down, or Shift/RESET key to display the setting value.

Parameter No.	Settings	Setup Description
H5-01	01	Slave address (HEX)
H5-02	3	Communication speed selection
H5-03	1	Communication parity selection
H5-04	3	Stopping method after communication error
H5-05	1	Communication error detection selection
H5-06	5	Send wait time
H5-07	1	RTS control ON/OFF

- 6 Press the DATA/ENTER key.
- **7** Reboot the External Device.

3.4 Setting Example 4

GP-Pro EX Settings

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

Device/PLC 1			
Summary			Change Device/PLC
Maker YASKAWA Ele	ectric Corporation	Series INVERTER SIO	Port COM1
Text Data Mode 1	<u>Change</u>		
Communication Settings			
SIO Type C	RS232C •	RS422/485(2wire) O RS422/485(4wire)	
Speed 9	600	•	
Data Length C	7 .	8	
Parity C	NONE .	EVEN C ODD	
Stop Bit 📀	1 C	2	
Flow Control 📀	NONE C	ER(DTR/CTS) C XON/XOFF	
Timeout 3	÷ (sec)		
Retry 2	-		
Wait To Send 11	0 🛨 (ms)		
RI/VCC ©	BI C	VCC	
In the case of RS232C, or VCC (5V Power Sup; Isolation Unit, please se	you can select the ply): If you use the elct it to VCC.	9th pin to RI (Input) Digital's RS232C Default	
Device-Specific Settings			
Allowable Number of Devi	ices/PLCs 16	5 .	
Number Device Name		Settings	

Device Setting

To display the [Individual Device Settings] dialog box, select the external device and click in [Setting] from [Device-Specific Settings] in the [Device/PLC] window. To connect multiple External Devices, click from [Device-Specific Settings] in the [Device/PLC] window to add another External Device.

Individual Device 🤅	Settings 🛛 🗙
PLC1	
Series	Varispeed G7
If you change series, p address settings.	please reconfirm all
Slave Address(DEC)	1
	Default
Oł	K (O) Cancel

To configure communication settings, use the MENU, DATA/ENTER, Up, Down, or Shift/RESET key on the digital operator located on the front of the inverter. Refer to your External Device manual for details.

- 1 Press the MENU key to select [Programming].
- 2 Press the DATA/ENTER key.
- **3** Press the Up key to display the parameter you want to set.
- 4 Press the DATA/ENTER key.
- 5 Press the Up, Down, or Shift/RESET key to display the setting value.

Parameter No.	Settings	Setup Description
H5-01	01	Slave address (HEX)
H5-02	3	Communication speed selection
H5-03	1	Communication parity selection
H5-04	3	Stopping method after communication error
H5-05	1	Communication error detection selection
H5-06	5	Send wait time
H5-07	1	RTS control ON/OFF

- 6 Press the DATA/ENTER key.
- **7** Reboot the External Device.

3.5 Setting Example 5

GP-Pro EX Settings

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

Device/PLC 1		
Summary		Change Device/PLC
Maker YASKAV	VA Electric Corporal	tion Series INVERTER SIO Port COM1
Text Data Mode	1 <u>Change</u>	
Communication Settings		
SIO Type	C RS232C	C RS422/485(2wire) C RS422/485(4wire)
Speed	9600	
Data Length	O 7	• 8
Parity	C NONE	EVEN C ODD
Stop Bit	● 1	• 2
Flow Control	NONE	O ER(DTR/CTS) O XON/XOFF
Timeout	3 🕂 ((sec)
Retry	2 +	
Wait To Send	10 📫 (ims)
RI / VCC	© RI	C VCC
In the case of RS2 or VCC (5V Power Isolation Unit, plea	232C, you can selec r Supply). If you use rse select it to VCC.	et the 9th pin to RI [Input] e the Digital's RS232C Default
Device-Specific Settings		
Allowable Number o	f Devices/PLCs	16 📷
Number Device N	lame	Settings
		Joenes=vo mini 07, olave Address(DEC)=1

Device Setting

To display the [Individual Device Settings] dialog box, select the external device and click [Device-Specific Settings] in the [Device/PLC] window. To connect multiple External Devices, click from [Device-Specific Settings] in the [Device/PLC] window to add another External Device.

Individual Device	Settings	×
PLC1		
Series	VS mini J7	•
lf you change series, p address settings.	olease reconfir	n all
Slave Address(DEC)	1	* *
		Default
01	K (0)	Cancel

To configure communication settings, use the DSPL, DATA/ENTER, Up, or Down key on the digital operator located on the front of the inverter. Refer to your External Device manual for details.

- 1 Press the DSPL key to select [PRGM].
- **2** Press the Up key to display the parameter you want to set.
- **3** Press the DATA/ENTER key.
- **4** Press the Up or Down key to display the setting value.

Parameter No.	Settings	Setup Description
n02	2	RUN Command Selection
n03	6	Frequency Reference Selection
n70	1	Slave Address Setting (DEC)
n71	2	Baud Rate Selection
n72	0	Parity Selection
n73	10	Transmission Wait Time
n74	0	RTS Control

- 5 Press the DATA/ENTER key.
- 6 Reboot the External Device.

3.6 Setting Example 6

GP-Pro EX Settings

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

Device/PLC 1	
Summary	Change Device/PLC
Maker VASKAWA Electric Corporation Series INVERTER SID	Port COM1
Text Data Mode 1 Change	
Communication Settings	
SID Type C RS232C C RS422/485(2wire) C RS422/485(4wire)	
Speed 9600 V	
Data Length C 7 C 8	
Parity CINONE CIVEN CIDD	
Stop Bit	
Flow Control O NONE O ER(DTR/CTS) O X0N/X0FF	
Timeout 3 🕂 (sec)	
Retry 2	
Wait To Send 10 🕂 (ms)	
In the case of RS232C, you can select the 9th pin to RI (Input)	
or VCC (5V Power Supply). If you use the Digital's RS232C Isolation Unit, please select it to VCC.	
Denie Cassifie Cattions	
Allowable Number of Devices/PLCs 16	
Number Device Name Settings	
1 PLC1 Iseries=VS mini J7,Slave Address(DEC)=1	

To display the [Individual Device Settings] dialog box, select the external device and click [Device-Specific Settings] in the [Device/PLC] window. To connect multiple External Devices, click from [Device-Specific Settings] in the [Device/PLC] window to add another External Device.

💰 Individual Device 🤅	5ettings	×
PLC1		
Series	VS mini J7	•
If you change series, p address settings.	olease reconfirr	n all
Slave Address(DEC)	1	*
		Default
10	< (0)	Cancel

To configure communication settings, use the DSPL, DATA/ENTER, Up, or Down key on the digital operator located on the front of the inverter. Refer to your External Device manual for details.

- 1 Press the DSPL key to select [PRGM].
- **2** Press the Up key to display the parameter you want to set.
- **3** Press the DATA/ENTER key.
- **4** Press the Up or Down key to display the setting value.

Parameter No.	Settings	Setup Description
n02	2	RUN Command Selection
n03	6	Frequency Reference Selection
n70	1	Slave Address Setting (DEC)
n71	2	Baud Rate Selection
n72	0	Parity Selection
n73	10	Transmission Wait Time
n74	0	RTS Control

- 5 Press the DATA/ENTER key.
- 6 Reboot the External Device.

3.7 Setting Example 7

■ GP-Pro EX Settings

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

Device/PLC1	
Summary Change Device	/PLC
Maker VASKAWA Electric Corporation Series INVERTER SIO Port COM1	
Text Data Mode 1 Change	
Communication Settings	
SIO Type C RS232C C RS422/485(2wire) 💽 RS422/485(4wire)	
Speed 9600 💌	
Data Length C 7 💽 8	
Parity CINDNE CIEVEN CIODD	
Stop Bit 1 C 2	
Flow Control C NONE C ER(DTR/CTS) C XON/XOFF	
Timeout 3 💼 (sec)	
Retry 2	
Wait To Send 10 📩 (ms)	
RI/VCC © RI C VCC	
In the case of RS232C, you can select the 9th pin to RI (Input) or VCC (5V Power Supply). If you use the Digital's RS232C Isolation Unit, please select it to VCC.	
Device-Specific Settings	
Allowable Number of Devices/PLCs 16	
Number Device Name Settings Image: Setting Settin	
jseries=VS mini V/VS-606V7,Slave Address(DEC)=1	

Device Setting

To display the [Individual Device Settings] dialog box, select the external device and click in [Setting] from [Device-Specific Settings] in the [Device/PLC] window. To connect multiple External Devices, click from [Device-Specific Settings] in the [Device/PLC] window to add another External Device.

Individual Device !	Settings		×
PLC1			
Series	VS mini V	7/VS-606V7	•
If you change series, p address settings.	olease recor	nfirm all	
Slave Address(DEC)	1	-	÷
		Default	
01	K (0)	Cancel]

To configure communication settings, use the DSPL, DATA/ENTER, Up, or Down key on the digital operator located on the front of the inverter. Refer to your External Device manual for details.

- 1 Press the DSPL key to select [PRGM].
- $2\,$ Press the Up key to display the parameter you want to set.
- **3** Press the DATA/ENTER key.
- **4** Press the Up or Down key to display the setting value.

Parameter No.	Settings	Setup Description
n03	2	RUN Command Selection
n04	6	Frequency Reference Selection
n153	1	Slave Address Setting (DEC)
n154	2	Baud Rate Selection
n155	0	Parity Selection
n156	10	Transmission Wait Time
n157	0	RTS Control

- 5 Press the DATA/ENTER key.
- 6 Reboot the External Device.

3.8 Setting Example 8

GP-Pro EX Settings

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

Device/PLC 1		
Summary		Change Device/PLC
Maker YASKAV	WA Electric Corpora	tion Series INVERTER SIO Port COM1
Text Data Mode	1 <u>Change</u>	
Communication Settings		
SIO Type	C RS232C	RS422/485(2wire) C RS422/485(4wire)
Speed	9600	V
Data Length	O 7	• 8
Parity	C NONE	
Stop Bit	• 1	C 2
Flow Control	NONE	C ER(DTR/CTS) C XON/XOFF
Timeout	3 🕂	(sec)
Retry	2 +	
Wait To Send	10 🕂	(ms)
RI / VCC	🖲 BL	C VCC
In the case of RS or VCC (5V Powe Isolation Unit, plea	232C, you can seler r Supply). If you us ase select it to VCC.	et the 9th pin to RI [Input] e the Digital's RS232C Default
Device-Specific Settings		
Allowable Number of	f Devices/PLCs	16 📊
Number Device Number	Name	Settings Series=VS mini V7A/S-606V7 Slave Address(DEC)=1

Device Setting

To display the [Individual Device Settings] dialog box, select the external device and click [Device-Specific Settings] in the [Device/PLC] window. To connect multiple External Devices, click from [Device-Specific Settings] in the [Device/PLC] window to add another External Device.

Individual Device !	5ettings	×
PLC1		
Series	VS mini V7A	/S-606V7 💌
If you change series, p address settings.	olease reconfir	m all
Slave Address(DEC)	1	•
		Default
01	<(0)	Cancel

To configure communication settings, use the DSPL, DATA/ENTER, Up, or Down key on the digital operator located on the front of the inverter. Refer to your External Device manual for details.

- 1 Press the DSPL key to select [PRGM].
- **2** Press the Up key to display the parameter you want to set.
- **3** Press the DATA/ENTER key.
- **4** Press the Up or Down key to display the setting value.

Parameter No.	Settings	Setup Description
n03	2	RUN Command Selection
n04	6	Frequency Reference Selection
n153	1	Slave Address Setting (DEC)
n154	2	Baud Rate Selection
n155	0	Parity Selection
n156	10	Transmission Wait Time
n157	0	RTS Control

- 5 Press the DATA/ENTER key.
- 6 Reboot the External Device.

3.9 Setting Example 9

GP-Pro EX Settings

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

Device/PLC 1			
Summary			Change Device/PLC
Maker YASKAWA E	lectric Corporation	Series INVERTER SIO	Port COM1
Text Data Mode 1	<u>Change</u>		
Communication Settings			
SIO Type	RS232C (RS422/485(2wire) • RS422/485(4wire)	
Speed	9600	•	
Data Length 🤇	7 🤇	8	
Parity C	NONE	EVEN C ODD	
Stop Bit 🤇	01 0	2	
Flow Control	NONE C	ER(DTR/CTS) C XON/XOFF	
Timeout	3 📫 (sec)	
Retry	2 📫		
Wait To Send	10 📫 (ms)		
RI/VCC 6	D RI C) vec	
In the case of RS232C or VCC (5V Power Sup Isolation Unit, please s	, you can select th pply). If you use th elect it to VCC.	e 9th pin to RI (Input) e Digital's RS232C Default	
Device-Specific Settings			
Allowable Number of Dev	vices/PLCs	16	
Number Device Name	•	Settings Series=Varispeed E7S Slave Address(DEC)=1	

Device Setting

To display the [Individual Device Settings] dialog box, select the external device and click i [Setting] from [Device-Specific Settings] in the [Device/PLC] window. To connect multiple External Devices, click i from [Device-Specific Settings] in the [Device/PLC] window to add another External Device.

Individual Device 🤅	5ettings	×
PLC1		
Series	Varispeed F7	'S 🔻
If you change series, p address settings.	olease reconfin	m all
Slave Address(DEC)	1	•
		Default
01	<(0)	Cancel

To configure communication settings, use the MENU, DATA/ENTER, Up, Down, or Shift/RESET key on the digital operator located on the front of the inverter. Refer to your External Device manual for details.

- 1 Press the MENU key to select [Programming].
- 2 Press the DATA/ENTER key.
- **3** Press the Up key to display the parameter you want to set.
- 4 Press the DATA/ENTER key.
- 5 Press the Up, Down, or Shift/RESET key to display the setting value.

Parameter No.	Settings	Setup Description
H5-01	01	Slave address (HEX)
H5-02	3	Communication speed selection
H5-03	1	Communication parity selection
H5-04	3	Stopping method after communication error
H5-05	1	Communication error detection selection
H5-06	5	Send wait time
H5-07	1	RTS control ON/OFF

- 6 Press the DATA/ENTER key.
- **7** Reboot the External Device.

3.10 Setting Example 10

GP-Pro EX Settings

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

Device/PLC 1	
Summary	Change Device/PLC
Maker YASKAWA Electric Corporation Series INVERTER SID	Port COM1
Text Data Mode 1 Change	
Communication Settings	
SID Tupe C BS232C BS422/485(2wire) C BS422/485(4wire)	
Data Levelta C. 7 C. 9	
Party CINONE CEVEN CODD	
Flow Control (• NUNE O ER(DTR/CTS) O XUN/XUFF	
Timeout 3 🕂 (sec)	
Retry 2	
Wait To Send 10 🕂 (ms)	
RI/VCC © RI O VCC	
In the case of RS232C, you can select the 9th pin to RI (Input)	
Isolation Unit, please select it to VCC. Default	
Device-Specific Settings	
Allowable Number of Devices/PLCs 16	
Number Device Name Settings	
Series=Varispeed F7S,Slave Address(DEC)=1	

Device Setting

To display the [Individual Device Settings] dialog box, select the external device and click [Device-Specific Settings] in the [Device/PLC] window. To connect multiple External Devices, click from [Device-Specific Settings] in the [Device/PLC] window to add another External Device.

Individual Device 9	Settings 🛛 🗙
PLC1	
Series	Varispeed F7S
If you change series, p address settings.	please reconfirm all
Slave Address(DEC)	1
	Default
	(0) Cancel

To configure communication settings, use the MENU, DATA/ENTER, Up, Down, or Shift/RESET key on the digital operator located on the front of the inverter. Refer to your External Device manual for details.

- 1 Press the MENU key to select [Programming].
- 2 Press the DATA/ENTER key.
- **3** Press the Up key to display the parameter you want to set.
- 4 Press the DATA/ENTER key.
- 5 Press the Up, Down, or Shift/RESET key to display the setting value.

Parameter No.	Settings	Setup Description
H5-01	01	Slave address (HEX)
H5-02	3	Communication speed selection
H5-03	1	Communication parity selection
H5-04	3	Stopping method after communication error
H5-05	1	Communication error detection selection
H5-06	5	Send wait time
H5-07	1	RTS control ON/OFF

- 6 Press the DATA/ENTER key.
- **7** Reboot the External Device.

3.11 Setting Example 11

GP-Pro EX Settings

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

Device/PLC 1		
Summary	Chang	e Device/PLC
Maker YASKAW	A Electric Corporation Series INVERTER SIO Port COM	11
Text Data Mode	1 Change	
Communication Settings		
SIO Type	C RS232C C RS422/485(2wire) • RS422/485(4wire)	
Speed	9600	
Data Length	C 7 • 8	
Parity	C NONE O EVEN O ODD	
Stop Bit		
Flow Control	NONE O ER(DTR/CTS) O XON/XOFF	
Timeout	3 * (sec)	
Retry	2 *	
Wait To Send	10 • (ms)	
RI / VCC	© RI O VCC	
In the case of RS2 or VCC (5V Power Isolation Unit, pleas	2C, 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 16	
Number Device Na	me Settings	
	Internet in the second	

Device Setting

To display the [Individual Device Settings] dialog box, select the external device and click in [Setting] from [Device-Specific Settings] in the [Device/PLC] window. To connect multiple External Devices, click from [Device-Specific Settings] in the [Device/PLC] window to add another External Device.

Individual Device 9	5ettings	×
PLC1		
Series	Varispeed L7	•
If you change series, p address settings.	olease reconfirn	n all
Slave Address(DEC)	1	* *
		Default
01	<(0)	Cancel

To configure communication settings, use the MENU, DATA/ENTER, Up, Down, or Shift/RESET key on the digital operator located on the front of the inverter. Refer to your External Device manual for details.

- 1 Press the MENU key to select [Programming].
- 2 Press the DATA/ENTER key.
- $\mathbf{3}$ Press the Up or Down key to display the parameter you want to set.
- 4 Press the DATA/ENTER key.
- 5 Press the Up, Down, or Shift/RESET key to display the setting value.

Parameter No.	Settings	Setup Description
H5-01	01	Slave address (HEX)
H5-02	3	Communication speed selection
H5-03	1	Communication parity selection
H5-04	3	Stopping method after communication error
H5-05	1	Communication error detection selection
H5-06	5	Send wait time
H5-07	1	RTS control ON/OFF

- 6 Press the DATA/ENTER key.
- **7** Reboot the External Device.

3.12 Setting Example 12

■ GP-Pro EX Settings

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

Device/PLC 1	
Summary Change Device/PL	C
Maker VASKAWA Electric Corporation Series INVERTER SID Port COM1	Ē
Text Data Mode TT Change	
Communication Settings	
SID Type C RS232C 💿 RS422/485(2wire) C RS422/485(4wire)	
Speed 9600 💌	
Data Length C 7 💿 8	
Parity C NONE C EVEN C ODD	
Stop Bit	
Flow Control O NONE O ER(DTR/CTS) C XON/XOFF	
Timeout 3 📫 (sec)	
Retry 2	
Wait To Send 10 📑 (ms)	
RI/VCC © RI C VCC	
In the case of RS232C, you can select the 9th pin to RI (Input)	
or VLL (SV Power Supply). If you use the Digital's HS232L Isolation Unit, please select it to VCC. Default	
Allowable Number of Devices/PLCs 16	
Number Device Name Settings	
1 PLC1 Series=Varispeed L7,Slave Address(DEC)=1	

Device Setting

To display the [Individual Device Settings] dialog box, select the external device and click [Device-Specific Settings] in the [Device/PLC] window. To connect multiple External Devices, click from [Device-Specific Settings] in the [Device/PLC] window to add another External Device.

💰 Individual Device Settings 🛛 🗙		
PLC1		
Series	Varispeed L7	•
If you change series, p address settings.	olease reconfirm	all
Slave Address(DEC)	1	*
		Default
10	<(0)	Cancel

To configure communication settings, use the MENU, DATA/ENTER, Up, Down, or Shift/RESET key on the digital operator located on the front of the inverter. Refer to your External Device manual for details.

- 1 Press the MENU key to select [Programming].
- 2 Press the DATA/ENTER key.
- $\mathbf{3}$ Press the Up or Down key to display the parameter you want to set.
- 4 Press the DATA/ENTER key.
- 5 Press the Up, Down, or Shift/RESET key to display the setting value.

Parameter No.	Settings	Setup Description
H5-01	01	Slave address (HEX)
H5-02	3	Communication speed selection
H5-03	1	Communication parity selection
H5-04	3	Stopping method after communication error
H5-05	1	Communication error detection selection
H5-06	5	Send wait time
H5-07	1	RTS control ON/OFF

- 6 Press the DATA/ENTER key.
- **7** Reboot the External Device.

3.13 Setting Example 13

■ GP-Pro EX Settings

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

Device/PLC 1		
Summary		Change Device/PLC
Maker YASKAV	VA Electric Corpora	tion Series INVERTER SIO Port COM1
Text Data Mode	1 Change	
Communication Settings		
SIO Type	O RS232C	© RS422/485(2wire) © RS422/485(4wire)
Speed	9600	•
Data Length	O 7	• 8
Parity	O NONE	
Stop Bit	● 1	0 2
Flow Control	NONE	C ER(DTR/CTS) C XON/XOFF
Timeout	3 🕂	(sec)
Retry	2 📫	
Wait To Send	10 📫	(ms)
RI / VCC	© BI	C VCC
In the case of RS or VCC (5V Power Isolation Unit, plea	232C, you can seler r Supply). If you use se select it to VCC.	ct the 9th pin to RI [Input] e the Digital's RS232C Default
Device-Specific Settings		
Allowable Number o	f Devices/PLCs	16
Number Device N	lame	Settings

Device Setting

To display the [Individual Device Settings] dialog box, select the external device and click i [Setting] from [Device-Specific Settings] in the [Device/PLC] window. To connect multiple External Devices, click i from [Device-Specific Settings] in the [Device/PLC] window to add another External Device.

💰 Individual Device Settings 🛛 🛛 🗙		
PLC1		
Series	Varispeed AC	
If you change series, p address settings.	olease reconfirr	n all
Slave Address(DEC)	1	* *
		Default
01	<(0)	Cancel

To configure communication settings, use the MENU, DATA/ENTER, Up, Down, or Shift/RESET key on the digital operator located on the front of the inverter. Refer to your External Device manual for details.

- 1 Press the MENU key to select [Programming].
- 2 Press the DATA/ENTER key.
- **3** Press the Up key to display the parameter you want to set.
- 4 Press the DATA/ENTER key.
- 5 Press the Up, Down, or Shift/RESET key to display the setting value.

Parameter No.	Settings	Setup Description
H5-01	01	Slave address (HEX)
H5-02	3	Communication speed selection
H5-03	1	Communication parity selection
H5-04	3	Stopping method after communication error
H5-05	1	Communication error detection selection
H5-06	5	Send wait time
H5-07	1	RTS control ON/OFF

- 6 Press the DATA/ENTER key.
- **7** Reboot the External Device.

3.14 Setting Example 14

GP-Pro EX Settings

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

Device/PLC 1		
Summary	Chan	ige Device/PLC
Maker YASKAWA B	Electric Corporation Series INVERTER SIO Port CO	M1
Text Data Mode 1	1 Change	
Communication Settings		
SIO Type	C RS232C 💿 RS422/485(2wire) 🔍 RS422/485(4wire)	
Speed	9600 💌	
Data Length 🤇	C 7 🕶 8	
Parity (C NONE C EVEN C ODD	
Stop Bit 🤇	● 1	
Flow Control	NONE O ER(DTR/CTS) O XON/XOFF	
Timeout	3 • (sec)	
Retry	2 *	
Wait To Send	10 (ms)	
RI/VCC Ø	© RI C VCC	
In the case of RS2320	C, you can select the 9th pin to RI (Input)	
Isolation Unit, please s	select it to VCC. Default	
Device-Specific Settings		
Allowable Number of De	evices/PLCs 16 📷	
Number Device Name	e Settings Series-Varianeed AC Slave Address(DEC)-1	
	Ut June - valispeed Act, slave Address (PEC)=1	

Device Setting

To display the [Individual Device Settings] dialog box, select the external device and click [Device-Specific Settings] in the [Device/PLC] window. To connect multiple External Devices, click from [Device-Specific Settings] in the [Device/PLC] window to add another External Device.

💰 Individual Device Settings 🛛 🛛 🔀		
PLC1		
Series	Varispeed A	.C 🔽
lf you change series, p address settings.	olease reconfi	irm all
Slave Address(DEC)	1	▲ ▼
		Default
01	< (0)	Cancel

To configure communication settings, use the MENU, DATA/ENTER, Up, Down, or Shift/RESET key on the digital operator located on the front of the inverter. Refer to your External Device manual for details.

- 1 Press the MENU key to select [Programming].
- 2 Press the DATA/ENTER key.
- **3** Press the Up key to display the parameter you want to set.
- 4 Press the DATA/ENTER key.
- 5 Press the Up, Down, or Shift/RESET key to display the setting value.

Parameter No.	Settings	Setup Description
H5-01	01	Slave address (HEX)
H5-02	3	Communication speed selection
H5-03	1	Communication parity selection
H5-04	3	Stopping method after communication error
H5-05	1	Communication error detection selection
H5-06	5	Send wait time
H5-07	1	RTS control ON/OFF

- 6 Press the DATA/ENTER key.
- **7** Reboot the External Device.

3.15 Setting Example 15

GP-Pro EX Settings

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

Device/PLC 1	
Summary Change Device.	/PLC
Maker VASKAWA Electric Corporation Series INVERTER SID Port COM1	
Text Data Mode 1 Change	
Communication Settings	
SID Type C RS232C C RS422/485(2wire) • RS422/485(4wire)	
Speed 9600 💌	
Data Length C 7 💿 8	
Parity CINONE CIEVEN CIODD	
Stop Bit 💿 1 🔿 2	
Flow Control NONE C ER(DTR/CTS) C XON/XOFF	
Timeout 3 🔆 (sec)	
Retry 2 🛨	
Wait To Send 10 📑 (ms)	
RI / VCC © RI C VCC	
In the case of RS232C, you can select the 9th pin to RI (Input) or VCC (5V Power Supply). If you use the Digital's RS232C Isolation Unit, please select it to VCC.	
Device-Specific Settings	
Allowable Number of Devices/PLCs 16	
Number Device Name Settings Number Device Name Settings 1 PLC1 Image: Settings Seties=V1000.Slave Address/DEC =1	

Device Setting

To display the [Individual Device Settings] dialog box, select the external device and click [Device-Specific Settings] in the [Device/PLC] window. To connect multiple External Devices, click from [Device-Specific Settings] in the [Device/PLC] window to add another External Device.

💰 Individual Device Settings 🛛 🛛 🔀		
PLC1		
Series	V1000	•
If you change series, j address settings.	please recon	firm all
Slave Address(DEC)	1	÷
		Default
0	K (0)	Cancel

To configure communication settings, use the ENTER, Up, Down, or Shift/RESET key on the digital operator located on the front of the inverter. Refer to your External Device manual for details.

- 1 Press the Up key to display [STUP].
- 2 Press the ENTER key.
- **3** Press the Up key to display the parameter you want to set.
- 4 Press the ENTER key.
- **5** Press the Up, Down, or Shift/RESET key to display the setting value.

Parameter No.	Settings	Setup Description
b1-01	2	Frequency Reference Selection 1
b1-02	2	Run Command Selection 1
H5-01	01	Node Address Setting (HEX)
H5-02	3	Communication Speed Selection
H5-03	1	Communication Parity Selection
H5-04	3	Stopping Method After Communication Error
H5-05	1	Communication Fault Detection Selection
H5-06	5	Drive Transmit Wait Time
H5-07	1	RTS Control Selection
H5-09	2.0	CE Detection Time

6 Press the ENTER key.

7 Reboot the External Device.

3.16 Setting Example 16

GP-Pro EX Settings

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

Device/PLC 1	
Summary	Change Device/PLC
Maker YASKAWA Elect	tric Corporation Series INVERTER SIO Port COM1
Text Data Mode 🛛 🗍	Change
Communication Settings	
SIO Type O R	19232C 💿 RS422/485(2wire) 🔿 RS422/485(4wire)
Speed 960	0 💌
Data Length C 7	• 8
Parity O N	IONE © EVEN C ODD
Stop Bit 📀 1	C 2
Flow Control 📀 N	IONE C ER(DTR/CTS) C XON/XOFF
Timeout 3	* (sec)
Retry 2	
Wait To Send 10	• (ms)
RI/VCC © R	
In the case of RS232C, yo or VCC (5V Power Supply)	u can select the 9th pin to RI (Input)). If you use the Digital's RS232C
Isolation Unit, please selec	st it to VCC. Default
Device-Specific Settings	
Allowable Number of Device	ss/PLCs 16
1 PLC1	Seturius Series=V1000,Slave Address(DEC)=1
,	

Device Setting

To display the [Individual Device Settings] dialog box, select the external device and click [Device-Specific Settings] in the [Device/PLC] window. To connect multiple External Devices, click from [Device-Specific Settings] in the [Device/PLC] window to add another External Device.

💰 Individual Device Settings 🛛 🛛 🔀		
PLC1		
Series	V1000	•
If you change series, j address settings.	please recon	firm all
Slave Address(DEC)	1	÷
		Default
0	K (0)	Cancel

To configure communication settings, use the ENTER, Up, Down, or Shift/RESET key on the digital operator located on the front of the inverter. Refer to your External Device manual for details.

- 1 Press the Up key to display [STUP].
- 2 Press the ENTER key.
- **3** Press the Up key to display the parameter you want to set.
- 4 Press the ENTER key.
- **5** Press the Up, Down, or Shift/RESET key to display the setting value.

Parameter No.	Settings	Setup Description
b1-01	2	Frequency Reference Selection 1
b1-02	2	Run Command Selection 1
H5-01	01	Node Address Setting (HEX)
H5-02	3	Communication Speed Selection
H5-03	1	Communication Parity Selection
H5-04	3	Stopping Method After Communication Error
H5-05	1	Communication Fault Detection Selection
H5-06	5	Drive Transmit Wait Time
H5-07	1	RTS Control Selection
H5-09	2.0	CE Detection Time

6 Press the ENTER key.

7 Reboot the External Device.

3.17 Setting Example 17

GP-Pro EX Settings

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

Device/PLC 1	
Summary	Change Device/PLC
Maker VASKAWA Electric Corporation Series INVERTER SID	Port COM1
Text Data Mode 1 Change	
Communication Settings	
SID Type C RS232C C RS422/485(2wire) © RS422/485(4wire)	
Speed 9600 💌	
Data Length C 7 C 8	
Parity CINONE CIEVEN CIODD	
Stop Bit	
Flow Control O NONE O ER(DTR/CTS) O X0N/X0FF	
Timeout 3 🛨 (sec)	
Retry 2	
Wait To Send 10 👘 (ms)	
RI/VCC © RI C VCC	
In the case of RS232C, you can select the 9th pin to RI (Input) or VCC (5V Power Supply). If you use the Digital's RS232C Isolation Unit, please select it to VCC.	
Device-Specific Settings	
Allowable Number of Devices/PLCs 16	
Number Device Name Settings	

Device Setting

To display the [Individual Device Settings] dialog box, select the external device and click [Device-Specific Settings] in the [Device/PLC] window. To connect multiple External Devices, click from [Device-Specific Settings] in the [Device/PLC] window to add another External Device.

💰 Individual Device Settings 🛛 🛛 🔀		
PLC1		
Series	J1000	•
If you change series, p address settings.	please recon	firm all
Slave Address(DEC)	1	÷
		Default
0	K (0)	Cancel

To configure communication settings, use the ENTER, Up, Down, or RESET key on the digital operator located on the front of the inverter. Refer to your External Device manual for details.

- 1 Press the Up key to display [STUP].
- 2 Press the ENTER key.
- $\mathbf{3}$ Press the Up key to display the parameter you want to set.
- 4 Press the ENTER key.
- **5** Press the Up, Down, or RESET key to display the setting value.

Parameter No.	Settings	Setup Description
b1-01	2	Frequency Reference Selection
b1-02	2	Run Command Selection
H5-01	01	Slave Address Setting (HEX)
H5-02	3	Communication Speed Selection
H5-03	1	Communication Parity Selection
H5-04	3	Stopping Method After Communication Error
H5-05	1	Communication Fault Detection Selection
H5-06	5	Drive Transmit Wait Time
H5-07	1	RTS Control Selection

- 6 Press the ENTER key.
- 7 Reboot the External Device.

3.18 Setting Example 18

GP-Pro EX Settings

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

Device/PLC 1	
Summary Change Device	e/PLC
Maker VASKAWA Electric Corporation Series INVERTER SIO Port COM1	
Text Data Mode 1 Change	
Communication Settings	
SID Type C RS232C C RS422/485(2wire) C RS422/485(4wire)	
Speed 9600	
Data Length C 7 📀 8	
Parity CINONE CIEVEN CIDD	
Stop Bit 1 2	
Flow Control NONE C ER(DTR/CTS) C XON/XOFF	
Timeout 3 📥 (sec)	
Retry 2	
Wait To Send 10 📑 (ms)	
RI/VCC © RI C VCC	
In the case of RS232C, you can select the 9th pin to RI (Input) or VCC (5V Power Supply). If you use the Digital's RS232C	
Isolation Unit, please select it to VLL. Default	
Device-Specific Settings	
Allowable Number of Devices/PLUs 16 Iug Number Device Name Settings	
I PLC1 III Series=J1000,Slave Address(DEC)=1	

Device Setting

To display the [Individual Device Settings] dialog box, select the external device and click [Device-Specific Settings] in the [Device/PLC] window. To connect multiple External Devices, click from [Device-Specific Settings] in the [Device/PLC] window to add another External Device.

Individual Device 9	Settings	×
PLC1		
Series	J1000	•
If you change series, p address settings.	lease reconfi	rm all
Slave Address(DEC)	1	▲ ▼
		Default
04	(0)	Cancel

To configure communication settings, use the ENTER, Up, Down, or RESET key on the digital operator located on the front of the inverter. Refer to your External Device manual for details.

- 1 Press the Up key to display [STUP].
- 2 Press the ENTER key.
- $\mathbf{3}$ Press the Up key to display the parameter you want to set.
- 4 Press the ENTER key.
- **5** Press the Up, Down, or RESET key to display the setting value.

Parameter No.	Settings	Setup Description
b1-01	2	Frequency Reference Selection
b1-02	2	Run Command Selection
H5-01	01	Slave Address Setting (HEX)
H5-02	3	Communication Speed Selection
H5-03	1	Communication Parity Selection
H5-04	3	Stopping Method After Communication Error
H5-05	1	Communication Fault Detection Selection
H5-06	5	Drive Transmit Wait Time
H5-07	1	RTS Control Selection

- 6 Press the ENTER key.
- 7 Reboot the External Device.

4 Setup Items

Set up the Display's communication settings in GP-Pro Ex or in the Display's off-line mode. The setting of each parameter must match that of the External Device.

⁽³⁷⁾ "3 Communication Settings" (page 9)

4.1 Setup Items in GP-Pro EX

Communication Settings

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

Summary				Change Device/PLC
Maker [YASKA]	WA Electric Corporat	ion Series IN	IVERTER SIO	Port COM1
Text Data Mode	1 <u>Change</u>			
Communication Settings				
SIO Type	C RS232C	C RS422/485(2wir	e) 💿 RS422/485(4wire)	
Speed	9600	•		
Data Length	0.7	• 8		
Parity	O NONE	EVEN	C ODD	
Stop Bit	● 1	O 2		
Flow Control	NONE	C ER(DTR/CTS)	C XON/XOFF	
Timeout	3 📫 (s	sec)		
Retry	2 +			
Wait To Send	10 📫 (r	ns)		
RI / VCC	🖸 RI	C VCC		
In the case of RS or VCC (5V Powe Isolation Unit, ple	232C, you can selec r Supply). If you use ase select it to VCC.	t the 9th pin to RI (Inp the Digital's RS232C	ut) Default	
Device-Specific Settings				
Allowable Number of	of Devices/PLCs	16 🔢		
Number Device	Name	Settings		

Setup Items	Setup Description
SIO Type	Select the SIO type to communicate with the External Device. MPORTANT In the communication settings, set [SIO Type] correctly according to the serial interface specifications of the Display. If you select an SIO type that the serial interface does not support, proper operation cannot be guaranteed. Refer to your Display manual for details on the serial interface specifications.
Speed	Select the communication speed between the External Device and the Display.
Data Length	Display data length.

Continues on the next page.

Setup Items	Setup Description
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.

Device Setting

To display the [Individual Device Settings] dialog box, select the external device and click i [Setting] from [Device-Specific Settings] in the [Device/PLC] window. To connect multiple External Devices, click i from [Device-Specific Settings] in the [Device/PLC] window to add another External Device.

💰 Individual Device 🥯	Settings 🛛 🗙
PLC1	
Series	Varispeed F7
If you change series, p address settings.	blease reconfirm all
Slave Address(DEC)	1
	Default
04	< (D) Cancel

Setup Items	Setup Description	
Series	Select the series of the External Device.	
Slave Address	Enter the slave address of the External Device, from 1 to 255 (DEC).	

4.2 Setup Items 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 off-line mode. Touch the External Device you want to set from the display list.

Comm.	Device	Option	-	
INVERTER SIO			[COM1]	Page 1/1
	SIO Type Speed Data Length Parity Stop Bit Flow Control Timeout(s) Retry Wait To Send(ms)	RS422/48 9600 8 • NONE • 1 NONE	5(4wire)	
	Exit		Back	2008/05/26 09:55:45

Setup Items	Setup Description
SIO Type	Select the SIO type to communicate with the External Device. IMPORTANT In the communication settings, set [SIO Type] correctly according to the serial interface specifications of the Display. If you select an SIO type that the serial interface does not support, proper operation cannot be guaranteed. Refer to your Display manual for details on the serial interface specifications.
Speed	Select the communication speed between the External Device and the Display.
Data Length	Display data length.
Parity	Select how to check parity.
Stop Bit	Select stop bit length.

Continues on the next page.

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Setup Items	Setup Description
Flow Control	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.

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 diplayed list, and touch [Device].

Comm.	Device	Option		
INVERTER SIO			[COM1]	Page 1/1
Devic	e/PLC Name PL	01		
S	eries Nave Address(DEC)	V1000	
	Exit		Back	2008/05/26 09:55:48

Setup Items	Setup Description
Device/PLC Name	Select the External Device to set. Device name is the title of a External Device set with GP- Pro EX. (Initial value [PLC1])
Series	Display the series of the External Device.
Slave Address	Enter the slave address of the External Device, from 1 to 255 (DEC).

5 Cable Diagrams

The following cable diagrams may be different from cable diagram recommended by YASKAWA Electric Corporation. Please be assured there is no operational problem in applying the cable diagrams shown in this manual.

- Be sure to isolate the communication wiring from the main circuit wiring and other power and electrical lines.
- The FG pin of the External Device body must be D-class grounded. Refer to your External Device manual for more details.
- The SG and FG are connected inside the Display. When connecting the External Device to the SG, design your system to avoid short-circuit loops.
- Connect an isolation unit if the communication is not stable due to noise or other factors.

Cable Diagram 1

Display (Connection Port)		Cable	Remarks
GP ^{*1} (COM1) AGP-3302B (COM2) ST ^{*2} (COM2) LT (COM1) IPC ^{*3}	А	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable	
		User-created cable	
GP ^{*1} (COM2)	С	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable	Cable length: 50m or less
	D	Online adapter by Pro-face CA4-ADPONL-01 + User-created cable	

*1 All GP models except AGP-3302B

*2 All ST models except AST-3211A

*3 Only the COM port which can communicate by RS-422/485 (4wire) can be used.

IPC COM Port (page 6)

- A) When using the COM port conversion adapter (CA3-ADPCOM-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, and a user-created cable.
- 1:1 Connection



• 1:n Connection



- NOTE
- For the shield ground, be sure to use the ground terminal on the External Device.
- Turn on the termination resistor switch on the External Device located at the end.

B) When using a user-created cable.

• 1:1 Connection



• 1:n Connection



NOTE

- For the shield ground, be sure to use the ground terminal on the External Device.
- Turn on the termination resistor switch on the External Device located at the end.

- C) When using the online adapter (CA4-ADPONL-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, and a user-created cable.
- 1:1 Connection



• 1:n Connection



• Turn on the termination resistor switch on the External Device located at the end.

- D. When using the online adapter (CA4-ADPONL-01) by Pro-face, and a user-created cable
- 1:1 Connection



User-created cable

• 1:n Connection



NOTE

• For the shield ground, be sure to use the ground terminal on the External Device.

• Turn on the termination resistor switch on the External Device located at the end.

Cable Diagram 2

Display (Connection Port)		Cable	Remarks
GP ^{*1} (COM1) AGP-3302B (COM2) ST ^{*2} (COM2) LT (COM1)	А	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable	
	В	User-created cable	
GP ^{*1} (COM2)	С	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable	Cable length: 50m or less
	D	Online adapter by Pro-face CA4-ADPONL-01 + User-created cable	
IPC ^{*3}	Е	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable	
	F	User-created cable	

*1 All GP models except AGP-3302B

*2 All ST models except AST-3211A

*3 Only the COM port which can communicate by RS-422/485 (2wire) can be used. ☞ ■ IPC COM Port (page 6)

- A) When using the COM port conversion adapter (CA3-ADPCOM-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, and a user-created cable
- 1:1 Connection



• 1:n Connection



NOTE

• For the shield ground, be sure to use the ground terminal on the External Device.

• Turn on the termination resistor switch on the External Device located at the end.

B) When using a user-created cable.

• 1:1 Connection

Terminal	Di D-Sub 9	splay pin (socket)	Shield	External Device Terminal Block		
resistance	Pin	Signal name	1		Signal name	
10032 (1/200)	1	RDA			S+	
N. I	2	RDB	←		S	
Display	3	SDA			→ R+	
	7	SDB			→ R-	
	5	SG		Ţ		
	4	ERA		-		
	8	CSA				
	9	ERB				
	6	CSB	◄┘			
	Shell	FG				

• 1:n Connection



NOTE

- For the shield ground, be sure to use the ground terminal on the External Device.
- Turn on the termination resistor switch on the External Device located at the end.

- C) When using the online adapter (CA4-ADPONL-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, and a user-created cable.
- 1:1 Connection



• 1:n Connection



NOTE

- For the shield ground, be sure to use the ground terminal on the External Device.
- Turn on the termination resistor switch on the External Device located at the end.

- D. When using the online adapter (CA4-ADPONL-01) by Pro-face, and a user-created cable.
- 1:1 Connection



• 1:n Connection

NOTE



• For the shield ground, be sure to use the ground terminal on the External Device.

• Turn on the termination resistor switch on the External Device located at the end.

- E) When using the COM port conversion adapter (CA3-ADPCOM-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, and a user-created cable.
- 1:1 Connection



• Turn on the termination resistor switch on the External Device located at the end.

F) When using a user-created cable.

• 1:1 Connection



1:n Connection



NOTE

- For the shield ground, be sure to use the ground terminal on the External Device.
- Turn on the termination resistor switch on the External Device located at the end.

6 Supported Device

The following table shows the range of supported device addresses. Please note that the actually supported range of the devices varies depending on the External Device to be used. Please check the actual range in the manual of your External Device.

: This address can be specified as system data area.

Device	Bit Address	Word Address	32 bits	Remar ks
Bit Register ^{*1}	BR0000.0 - BR1959.F		-	*2
Register ^{*1}		0000 - 1959	[L/H]	Bit

*1 The Bit Register and the Register are the same device, but their bit write operation differs. Use either as needed.

*2 When bits are written, the Display reads the corresponding word address from the External Device, sets particular bits of that word address to ON, and then returns the resulting address to the External Device. Note that the correct data may not be written if you change the word address using the ladder program while the Display reads data from the External Device and returns it. To write bits to the write-only register, use a registering device. Writing bits to the write-only register will cause a communication error to appear when the readout command is executed.

• If you use a device, set the address to the MEMOBUS register No. corresponding to the parameter No. Refer to your External Device manual for details.

Constant No. Name						Control mode			
		Description	Setting Range	Default Value	Changes during Operation	V/f with- out PG	V/f with PG	Vector without PG	MEMOBUS Register
A1-02	Selection of Control Mode	Select an inverter control mode. 0: V/f control without PG 1: V/f control with PG 2: Vector control without PG The control mode is not initialized by selecting INITIALIZE.	0 to 2	0	×	Q	Q	Q	102H
b1-01	Selection of frequency command	Select a frequency command input method. (): Digital operator 1: Control circuit terminal (analog input) 2: MEMOBUS communication 3: Optional card 4: Pulse column input	0 to 4	1	×	Q	Q	Q	180H

Example)	Correspond	ence hetwe	en the I	nverter (onstant]	Number :	and MFM	OBUS	register
Linampic)	Concepting	chec betwe	ch uic i		Jonstant	vuinoer a		10000	register

- You can only set the Read Area Size for the system area available to use in the External Device. Please refer to the GP Pro-EX Reference Manual for Read Area Size.
- Refer to the GP-Pro EX Reference Manual for system data area.

Cf. GP-Pro EXReference Manual "Appendix 1.4 LS Area (Direct Access Method)"

• For the icons in the table, refer to the notes on manual notation.

"Manual Symbols and Terminology"

7 Device Code and Address Code

Use device code and address code when you set "Device Type & Address" for the address type of the data display or other devices.

Device	Device Name	Device Code (HEX)	Address Code
Register	-	0000	Word Address

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 number
Device Name	Name of the External Device where an error has occurred. Device/PLC name is the title of the External Device set with GP-Pro EX. (Initial value [PLC1])
Error Message	Displays messages related to an error that has occurred.
Error Occurrence Area	Displays the IP address or device address of the External Device where an error has occurred, or error codes received from the External Device.
	 NOTE Received error codes are displayed as "Decimal [Hex]". Device address is displayed as "Address: Device address". IP addresses are displayed as "IP address (Decimal): MAC address (Hex)".

Examples of Error Messages

"RHAA035: PLC1: Error has been responded for device write command (Error Code: 1 [01H])"

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.

Error Codes Unique to External Device

Error Code	Description
02H	Invalid register number error
21H	Data setting error
22H	Write mode error
23H	Writing during main circuit undervoltage (UV) error
24H	Writing error during constants processing