Pro-face

Digital Human Machine Interface

Device/PLC Connection Manuals

About the Device/PLC Connection Manuals

Prior to reading these manuals and setting up your device, be sure to read the "Important: Prior to reading the Device/PLC Connection manual" information. Also, be sure to download the "Preface for Trademark Rights, List of Units Supported, How to Read Manuals and Documentation Conventions" PDF file. Furthermore, be sure to keep all manual-related data in a safe, easy-to-find location.

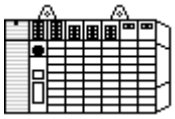
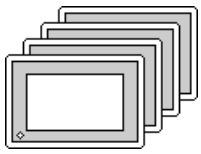
6.2 Rockwell (Allen-Bradley)

Important

With Rockwell PLC-5 DataHighway+, SLC500 DH485, and Remote I/O Protocol units, when the same project file is used on multiple GP/GLC units, the system may malfunction. When using multiple GP/GLC units, create and maintain only one unique project file for each GP/GLC unit.

6.2.1 System Structure

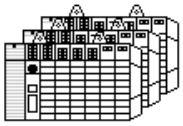
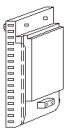
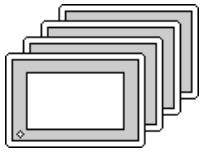
■ SLC 500 Series (Using DH485)

CPU	Unit	Cable Diagram	GP
			
SLC-5/01 SLC-5/02 SLC-5/03 SLC-5/04		TCP's *1 HMI-CAB-C83 *2	GP Series
	1747-PIC Link coupler (Allen Bradley's)	TCP's *1 HMI-CAB-C84 *2	

**1 Use the HMI CAB-C83 cable at 1:1, or HMI CAB-C84 at m:n.*

**2 Manufactured by Total Control Products, Inc.*

■ SLC 500 Series (Using Data Highway Plus)

CPU	Cable Diagram	Unit	GP
		 DH Plus Module	
SLC-5/04	(Cable Diagram 1)	TCP's *1 QPI-ABD-201	Large Size GPs *2
		TCP's *1 QPJ-ABD-201	Medium Size GPs *3

**1 Manufactured by Total Control Products, Inc.*

(footnotes continue on following page)

**2 Connectable large-size GP Series units are listed below.*

Series Name		Unit
GP70 Series	GP-470 Series	GP-470E
	GP-570 Series	GP-570S
		GP-570T
		GP-57JS
		GP-570VM
	GP-571 Series	GP-571T
	GP-675 Series	GP-675S
		GP-675T
	GP-870 Series	GP-870VM
GP77 Series	GP-477R Series	GP477RE
	GP-577R Series	GP-577RS
		GP-577RT
GP2000 Series *	GP-2500 Series	GP-2500T
	GP-2501 Series	GP-2501S
		GP-2501T
	GP-2600 Series	GP-2600T
	GP-2601 Series	GP-2601T
GLC2000 Series*	GLC2500 Series	GLC2500T
	GLC2600 Series	GLC2600T

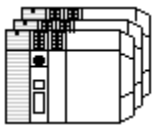
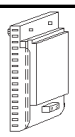
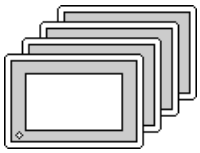
* *When using a large-size GP2000/GLC2000 Series unit, a bus conversion unit (PSL-CONV00) is required.*

**3 Connectable medium-size GP Series units are listed below.*

Series Name		Unit
GP70 Series	GP-270 Series	GP-270L
		GP-270S
	GP-370 Series	GP-370S
		GP-370T
GP77 Series	GP-377R Series	GP-377RT
GP2000 Series*	GP-2300 Series	GP-2300L
		GP-2300T
	GP-2301 Series	GP-2301L
		GP-2301S
		GP-2301T
GLC2000 Series*	GLC2300 Series	GLC2300L
		GLC2300T

* *When using a medium-size GP2000/GLC2000 Series unit, a bus conversion unit (PSM-CONV00) is required.*

■ PLC-5 Series (Using Data Highway Plus)

CPU	Cable Diagram	Unit	GP
		 DH Plus Module	
PLC-5/20	(Cable Diagram 1)	QPI-ABD-201 (TCP's) *1	Large Size GPs *2
		QPJ-ABD-201 (TCP's) *1	Medium Size GPs *3

**1 Product manufactured by Total Control Products, Inc.*

**2 Connectable large-size GP Series units are listed below.*

Series Name		Unit
GP70 Series	GP-470 Series	GP-470E
	GP-570 Series	GP-570S
		GP-570T
		GP-57JS
		GP-570VM
	GP-571 Series	GP-571T
	GP-675 Series	GP-675S
		GP-675T
	GP-870 Series	GP-870VM
GP77 Series	GP-477R Series	GP477RE
	GP-577R Series	GP-577RS
		GP-577RT
GP2000 Series *	GP-2500 Series	GP-2500T
	GP-2501 Series	GP-2501S
		GP-2501T
	GP-2600 Series	GP-2600T
	GP-2601 Series	GP-2601T
GLC2000 Series*	GLC2500 Series	GLC2500T
	GLC2600 Series	GLC2600T

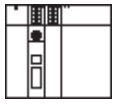
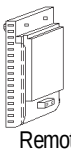
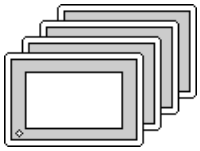
* *When using a large-size GP2000/GLC2000 Series unit, a bus conversion unit (PSL-CONV00) is required.*

**3 Connectable medium-size GP Series units are listed below.*

Series Name		Unit
GP70 Series	GP-270 Series	GP-270L
		GP-270S
	GP-370 Series	GP-370S
		GP-370T
GP77 Series	GP-377R Series	GP-377RT
GP2000 Series*	GP-2300 Series	GP-2300L
		GP-2300T
	GP-2301 Series	GP-2301L
		GP-2301S
		GP-2301T
GLC2000 Series*	GLC2300 Series	GLC2300L
		GLC2300T

* *When using a medium-size GP2000/GLC2000 Series unit, a bus conversion unit (PSM-CONV00) is required.*

■ PLC-5 Series (Using Remote I/O)

CPU	Cable Diagram	Unit	GP
		 Remote I/O	
PLC-5	(Cable Diagram 1)	QPI-ABR-201 (TCP's) *1	Large Size GPs *2
		QPJ-ABR-201 (TCP's) *1	Medium Size GPs *3

**1 Product manufactured by Total Control Products, Inc.*

**2 Connectable large-size GP Series units are listed below.*

Series Name		Unit
GP70 Series	GP-470 Series	GP-470E
	GP-570 Series	GP-570S
		GP-570T
		GP-57JS
		GP-570VM
	GP-571 Series	GP-571T
	GP-675 Series	GP-675S
		GP-675T
	GP-870 Series	GP-870VM
GP77 Series	GP-477R Series	GP477RE
	GP-577R Series	GP-577RS
		GP-577RT
GP2000 Series *	GP-2500 Series	GP-2500T
	GP-2501 Series	GP-2501S
		GP-2501T
	GP-2600 Series	GP-2600T
	GP-2601 Series	GP-2601T
GLC2000 Series*	GLC2500 Series	GLC2500T
	GLC2600 Series	GLC2600T

* *When using a large-size GP2000/GLC2000 Series unit, a bus conversion unit (PSL-CONV00) is required.*

**3 Connectable medium-size GP Series units are listed below.*

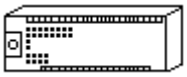
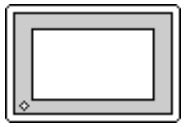
Series Name		Unit
GP70 Series	GP-270 Series	GP-270L
		GP-270S
	GP-370 Series	GP-370S
		GP-370T
GP77 Series	GP-377R Series	GP-377RT
GP2000 Series*	GP-2300 Series	GP-2300L
		GP-2300T
	GP-2301 Series	GP-2301L
		GP-2301S
		GP-2301T
GLC2000 Series*	GLC2300 Series	GLC2300L
		GLC2300T

* *When using a medium-size GP2000/GLC2000 Series unit, a bus conversion unit (PSM-CONV00) is required.*

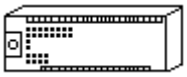
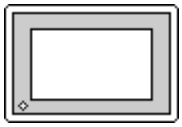
**3 Connectable GP Series are listed below.*

Series Name		Product Name
GP70 Series	GP-270 Series	GP-270L
		GP-270S
	GP-370 Series	GP-370S
		GP-370T
GP77R Series	GP-377R Series	GP-377RT

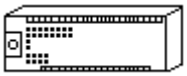
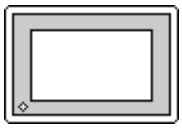
■ **MicroLogix 1000 Series** (Using DH485)

CPU	Link	Cable Diagram	Cables	GP
				
1761-L16AWA 1761-L32AWA 1761-L20AWA-5A 1761-L10BWA 1761-L16BWA 1761-L20BWA-5A 1761-L32BWA 1761-L10BWB 1761-L16BWB 1761-L20BWB-5A 1761-L32BWB 1761-L16BBB 1761-L32BBB 1761-L32AAA	RS-232C port on CPU unit	RS-232C <Cable Diagram 2>	Rockwell's 1761-CBL-PM02 cable	GP Series

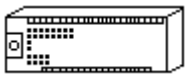
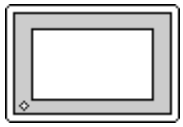
■ **MicroLogix 1200 Series** (Using DH485)

CPU	Link	Cable Diagram	Cables	GP
				
1762-L24AWA 1762-L24BWA 1762-L24BXB 1762-L40AWA 1762-L40BWA 1762-L40BXB	RS-232C port on CPU unit	RS-232C <Cable Diagram 2>	Rockwell's 1761-CBL-PM02 cable	GP Series

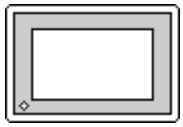
■ MicroLogix 1500 Series (Using DH485)

CPU	Link	Cable Diagram	Cables	GP
				
1764-LSP	RS-232C port on Base unit	RS-232C <Cable Diagram 2>	Rockwell's 1761-CBL-PM02 cable	GP Series

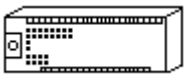
■ MicroLogix 1000 Series (Using DH485 with Advanced Interface Converter)

CPU	Link	Cable Diagram	GP
			
1761-L16AWA 1761-L32AWA 1761-L20AWA-5A 1761-L10BWA 1761-L16BWA 1761-L20BWA-5A 1761-L32BWA 1761-L10BWB 1761-L16BWB 1761-L20BWB-5A 1761-L32BWB 1761-L16BBB 1761-L32BBB 1761-L32AAA	Advanced Interface Converter (1761-NET-AIC)	RS-232C port connection <Cable Diagram 3>	GP Series
		RS-422 (2-wire type) port 3 connection <Cable Diagram 4>	

■ MicroLogix 1200 Series (Using DH485 with Advanced Interface Converter)

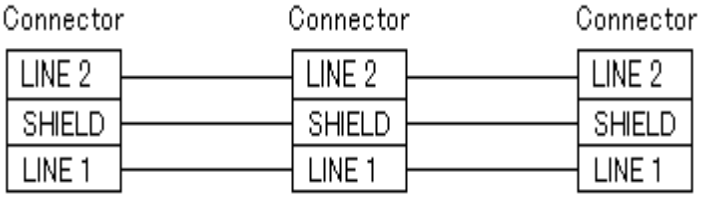
CPU	Link	Cable Diagram	GP
			
1762-L24AWA 1762-L24BWA 1762-L24BXB 1762-L40AWA 1762-L40BWA	Advanced Interface Converter (1761-NET-AIC)	RS-232C port connection <Cable Diagram 3>	GP Series
		RS-422 (2-wire type) port 3 connection <Cable Diagram 4>	

■ MicroLogix 1500 Series (Using DH485 with Advanced Interface Converter)

CPU	Link	Cable Diagram	GP
			
1764-LSP	Advanced Interface Converter (1761-NET-AIC)	RS-232C port connection <Cable Diagram 3>	GP Series
		RS-422 (2-wire type) port 3 connection <Cable Diagram 4>	

6.2.2 Cable Diagrams

Cable Diagram 1 (Using Data Highway Plus /Remote I/O)

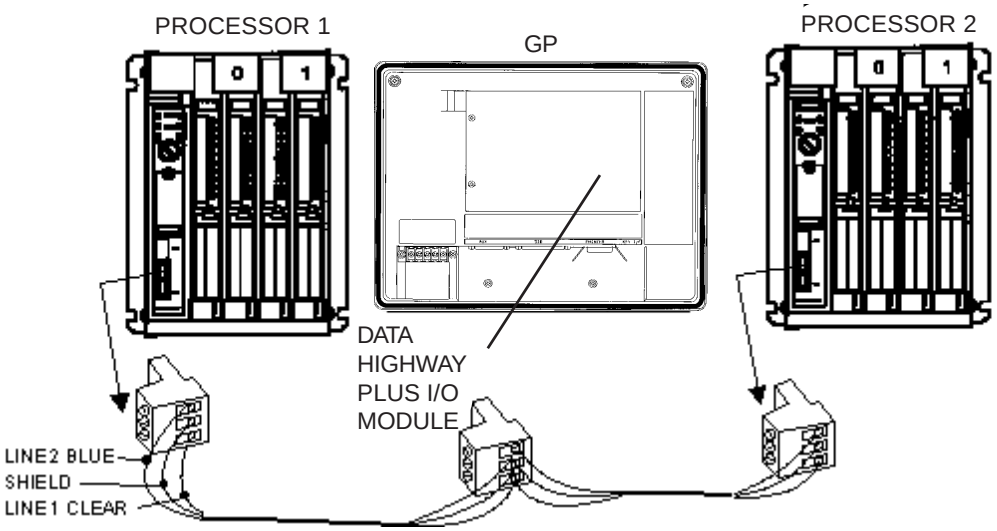


Important

- ***The connector is supplied as an accessory for the PLC.***

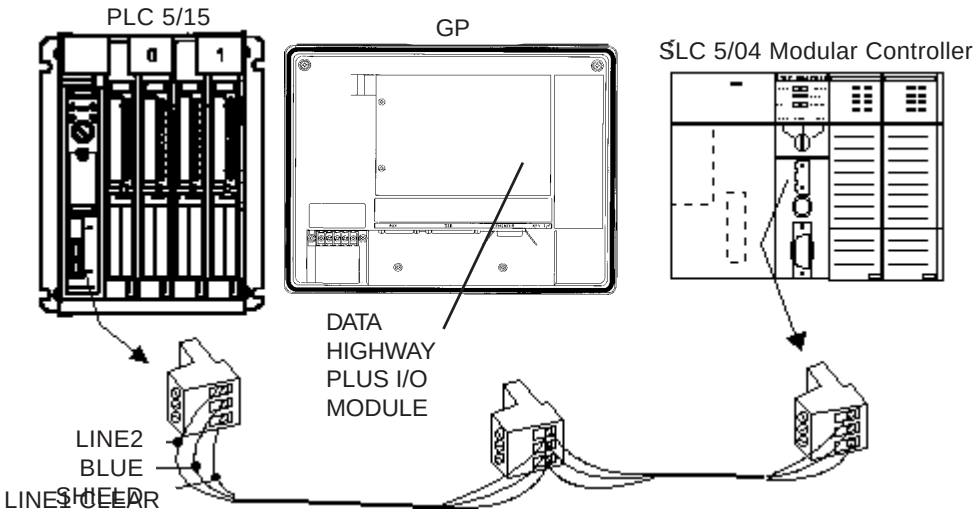
Connection to Data Highway Plus

The following drawing shows a GP connected to two PLC-5 processors on a Data Highway Plus network.



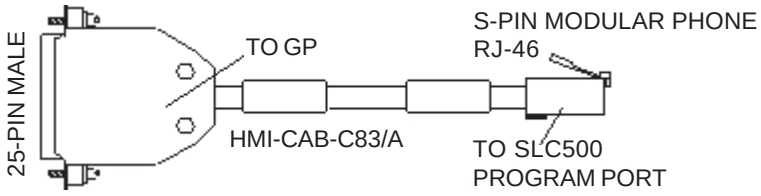
SLC 5/04 DH+ Connection

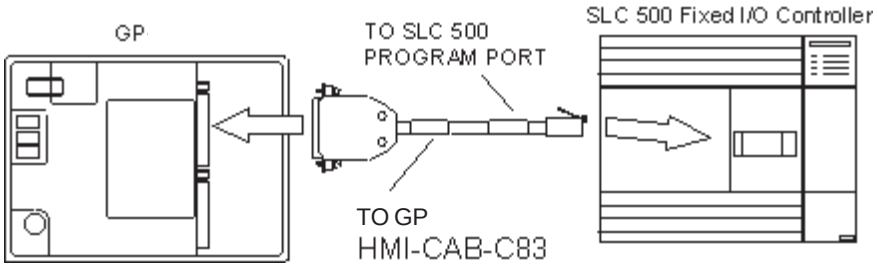
The drawing shows a possible configuration for DH+.



HMI-CAB-C83 Cable

This cable connects a single GP unit directly to the Rockwell (Allen-Bradley) SLC 500 Programming Port.





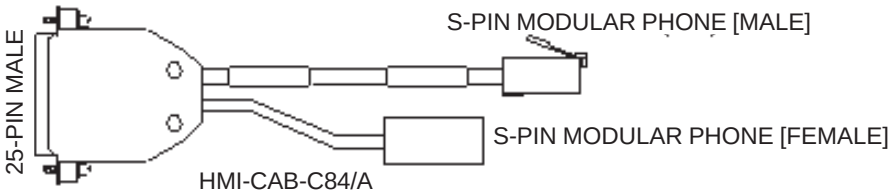
HMI-CAB-C84 Cable

This cable connects the GP's serial port to the Rockwell (Allen-Bradley) SLC 500 Programming Port.

The cable is designed to allow connection to additional devices such as an Rockwell (Allen-Bradley) 1747-PIC Interface Converter.

Warning

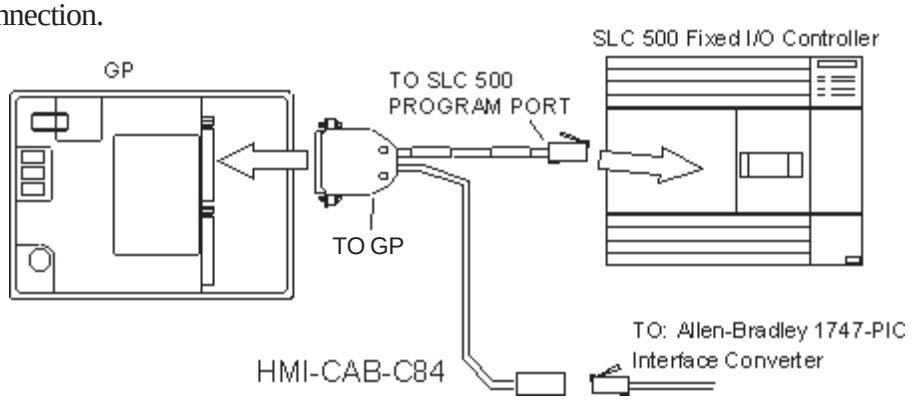
This cable is 6 feet (approximately 2 meters) long. Do not attempt to make it longer.



SLC 500 Network Connection for Programming Equipment (DH485)

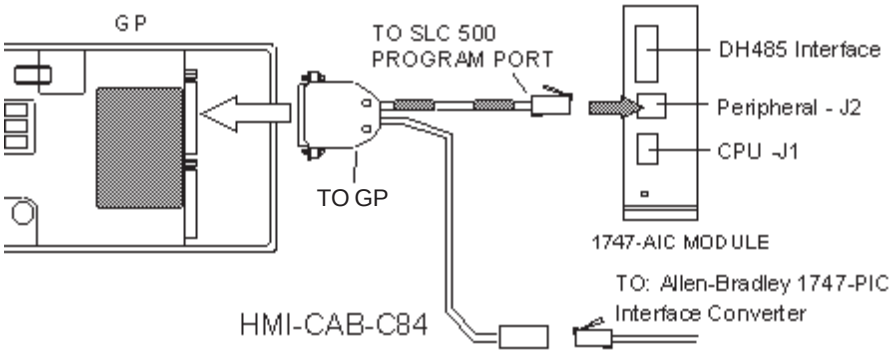
This connection allows two devices to be connected to the PLC. In this case, a programming terminal can be connected to the PLC using a 1747-PIC Interface Converter connected to the HMI-CAB-C84 cable.

The drawing shows the connections for adding a second device to the network connection.

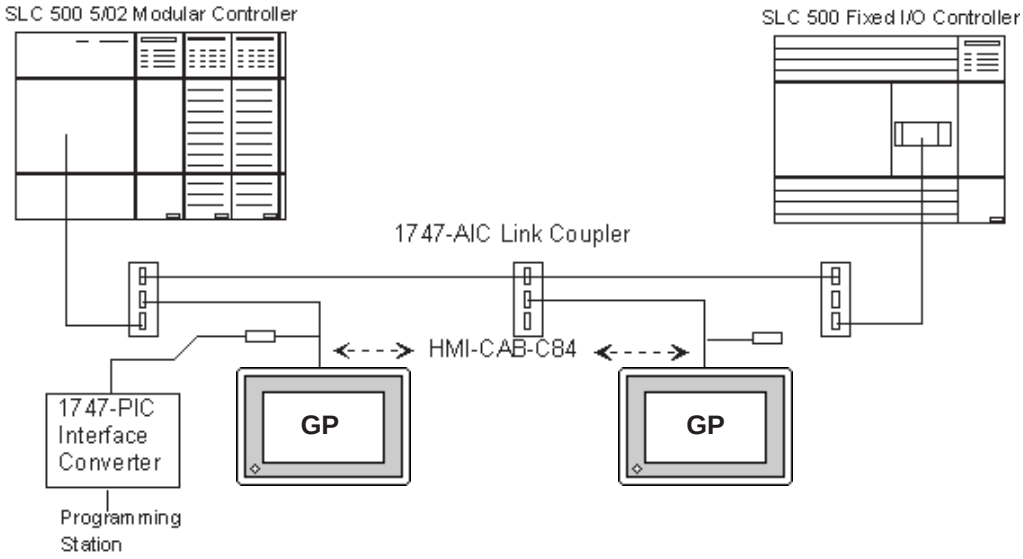


Connecting to a 1747 AIC Module (DH485)

Connect the HMI-CAB-C84 cable to the 1747 AIC Module as shown below.

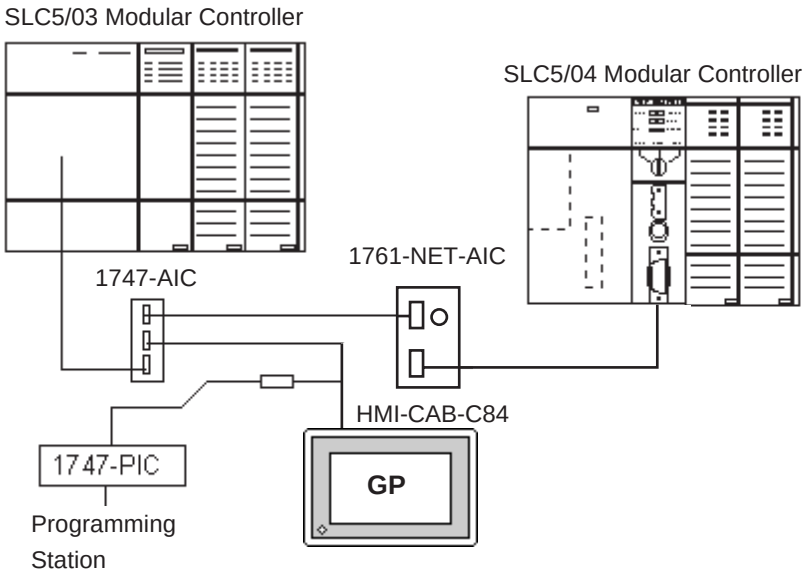


SLC 500 Net work Connection using 1747 AIC Link Couplers (DH485)

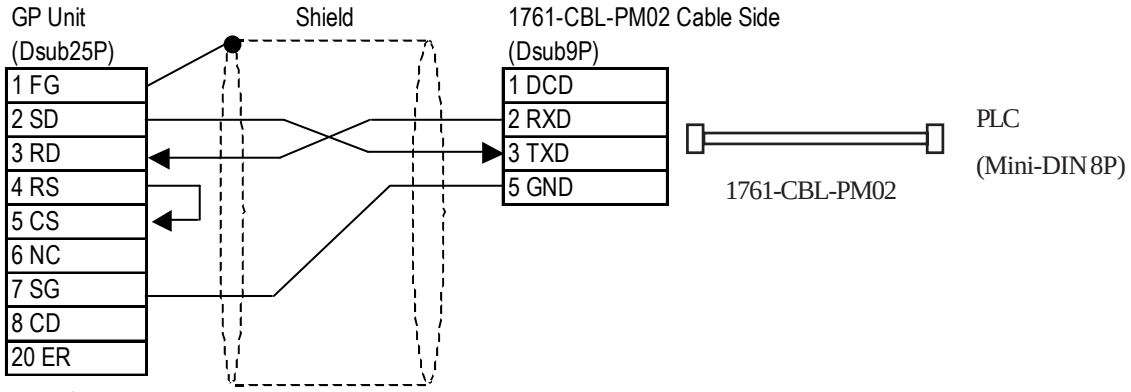


SLC 5/03 and SLC 5/04 DH485 Connections

You can connect channel 0 of the SLC 5/03 and SLC 5/04 modules to the 1747-PIC to make a connection to the DH485 network.



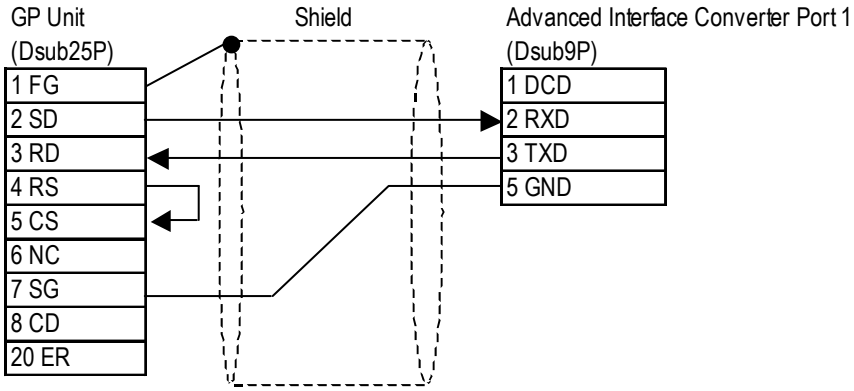
Cable Diagram 2 (RS-232C)



Important

- ***Use a cable length less than 15m.***

Cable Diagram 3 (RS-232C)

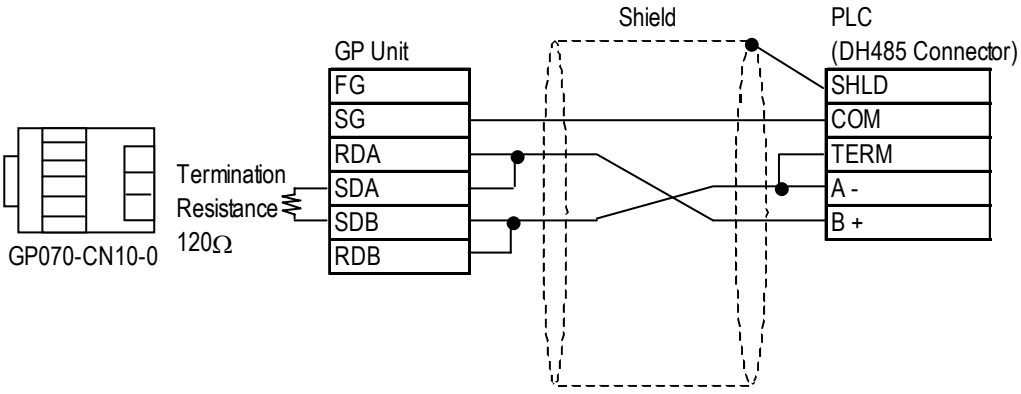


Important

- ***Use a cable length less than 15m.***

Cable Diagram 4 (RS-422C)

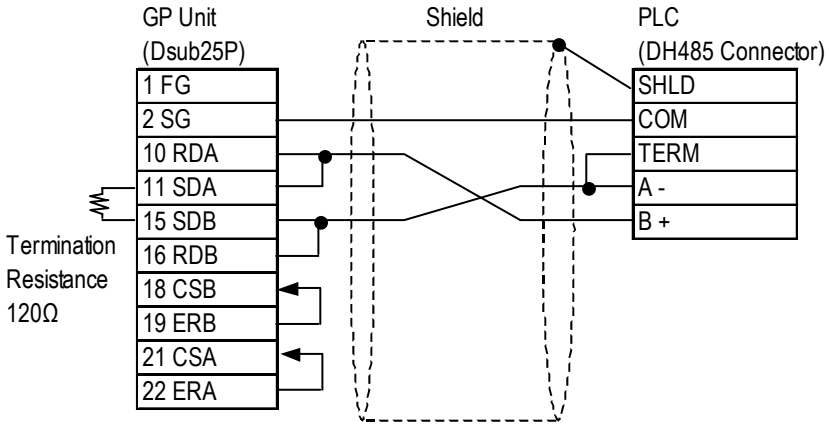
- When using Digital's RS-422 connector terminal adapter GP070-CN10-O



Important

- ***Use a cable length less than 600m.***

• When making your own connections.



Important

• Use a cable length less than 600m.

6.2.3 Supported Devices

■ SLC 500 Series (Using DH485 or Data Highway Plus)

Setup System Area here

Device	Bit Address	Word Address	Particulars	
Status	S2:000/0 ~ S2:15/15	S2:000 ~ S2:15	SLC5/01	L/H
	S2:000/0 ~ S2:32/15	S2:000 ~ S2:32	SLC5/02	
	S2:000/0 ~ S2:83/15	S2:000 ~ S2:83	SLC5/03	
Bit	B3:000/0 ~ B3:255/15	B3:000 ~ B3:255		
Timer (TT: Timing Bit)	T4:000.TT ~ T4:255./TT	---		
	T10:000.TT ~ S255:255.TT	---		
Timer (DN: Completion Bit)	T4:000.DN ~ T4:255./DN	---		
	T10:000.DN ~ S255:255.DN	---		
Timer EN: Enable Bit)	T4:000.EN ~ T4:255.EN	---		
	T10:000.EN ~ S255:255.EN	---		
Timer (PRE: Current Value)	---	T4:000.PRE ~ T4:255.PRE		
	---	T10:000.PRE ~ S255:255.PRE		
Timer (Acc: Setup Value)	---	T4:000.ACC ~ T4:255.ACC		
	---	T10:000.ACC~ S255:255.ACC		
Counter (CU: Up Count)	C5:000.CU ~ C5:255.CU	---		
	C10:000.CU ~ C255:255.CU	---		
Counter (CU: Down Count)	C5:000.CD ~ C5:255.CD	---		
	C10:000.CD ~ C255:255.CD	---		
Counter (DN: Completion Bit)	C5:000.DN ~ C5:255.DN	---		
	C10:000.DN ~ C255:255.DN	---		
Counter (OV: Overflow)	C5:000.OV ~ C5:255.OV	---		
	C10:000.OV ~ C255:255.OV	---		
Counter (UN: Underflow)	C5:000.UN ~ C5:255.UN	---		
	C10:000.UN ~ C255:255.UN	---		
Counter (UA: newly current value reading)	C5:000.UA ~ C5:255.UA	---		
	C10:000.UA ~ C255:255.UA	---		
Counter (Current Value)	---	C5:000.ACC ~ C5:255.ACC		
	---	C10:000.ACC ~ C255:255.ACC		
Counter (Current Value)	---	C5:000.PRE ~ C5:255.PRE		
	---	C10:000.PRE ~ C255:255.PRE		
Control (DN)	R6:000.DN ~ R6:255.DN	---		
	R10:000.DN ~ R255:255.DN	---		
Control (EN)	R6:000.EN ~ R6:255.EN	---		
	R10:000.EN ~ R255:255.EN	---		
Control (ER)	R6:000.ER ~ R6:255.ER	---		
	R10:000.ER ~ R255:255.ER	---		
Control (UL)	R6:000.UL ~ R6:255.UL	---		
	R10:000.UL ~ R255:255.UL	---		

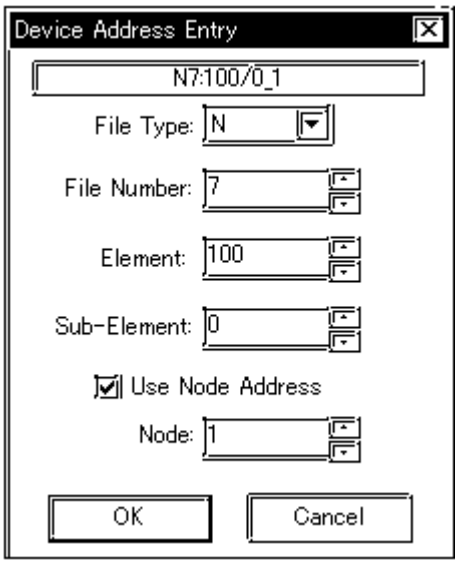
■ **SLC 500 Series** (Using DH485 or Data Highway Plus) (Continued)

Setup System Area here.

Device	Bit Address	Word Address	Particulars	
Control (IN)	R6:000.IN ~ R6:255.IN	---		L/H
	R10:000.IN ~ R255:255.IN	---		
Control (EN)	R6:000.FD ~ R6:255.FD	---		
	R10:000.FD ~ R255:255.FD	---		
Control (LEN)	---	R6:000.LEN ~ R6:255.LEN		
	---	R10:000.LEN ~ R255:255.LEN		
Control (POS)	---	R6:000.POS ~ R6:255.POS		
	---	R10:000.POS ~ R255:255.POS		
Integral Number (N)	N7:000/0 ~ N7:255/15	N7:000 ~ N7:255		
	N10:000/0 ~ N255:255/15	N10:000 ~ N255:255		

Note:

- **You may specify a station number of the PLC when entering addresses during the setup of parts and tags in GP-PRO/PBIII. If no station number is specified, the last entered number is assumed (the default value is 1).**



N7:100/00_1

- PLC's Node Address — DH485: 0 to 31 (Decimal), DH Plus: 0 to 77 (Octal)
- Bit Address (Sub element)
- Element
- File No.
- File Type

■ **PLC-5 Series** (Using Data Highway Plus)

Setup System Area here.

Device	Bit Address	Word Address	Remarks	
Output	0:0/0 ~ 0.377/17	---		L/H
Input	1:0/0 ~ 1.377/17	---		
Status	S2:000/0 ~ S2:15/15	S2:000 ~ S2:15		
Bit	B3:000/0 ~ B3:999/15	B3:000 ~ B3:999		
Timer (TT: Timing Bit)	T4:000.TT ~ T4:999./TT	---		
	T8:000.TT ~ S999:999.TT	---		
Timer (DN: Completion Bit)	T4:000.DN ~ T4:999./DN	---		
	T8:000.DN ~ T999:999.DN	---		
Timer EN: Enable Bit)	T4:000.EN ~ T4:999./EN	---		
	T8:000.EN ~ T999:999.EN	---		
Timer (PRE: Current Value)	---	T4:000.PRE ~ T4:999.PRE		
	---	T8:000.PRE ~ S999:999.PRE		
Timer (Acc: Setup Value)	---	T4:000.ACC ~ T4:999.ACC		
	---	T8:000.ACC~ T999:999.ACC		
Counter (CU: Up Count)	C5:000.CU ~ C5:999.CU	---		
	C8:000.CU ~ C999:999.CU	---		
Counter (CU: Down Count)	C5:000.CD ~ C5:999.CD	---		
	C8:000.CD ~ C999:999.CD	---		
Counter (DN: Completion Bit)	C5:000.DN ~ C5:999.DN	---		
	C8:000.DN ~ C999:999.DN	---		
Counter (OV: Overflow)	C5:000.OV ~ C5:999.OV	---		
	C8:000.OV ~ C999:999.OV	---		
Counter (UN: Underflow)	C5:000.UN ~ C5:999.UN	---		
	C8:000.UN ~ C999:999.UN	---		
Counter (UA: newly current value reading)	C5:000.UA ~ C5:999.UA	---		
	C8:000.UA ~ C999:999.UA	---		
Counter (Current Value)	---	C5:000.ACC ~ C5:999.ACC		
	---	C8:000.ACC ~ C999:999.ACC		
Counter (Current Value)	---	C5:000.PRE ~ C5:999.PRE		
	---	C8:000.PRE ~ C999:999.PRE		
Control (DN)	R6:000.DN ~ R6:999.DN	---		
	R8:000.DN ~ R999:999.DN	---		
Control (EN)	R6:000.EN ~ R6:999.EN	---		
	R8:000.EN ~ R999:999.EN	---		
Control (ER)	R6:000.ER ~ R6:999.ER	---		
	R8:000.ER ~ R999:999.ER	---		
Control (UL)	R6:000.UL ~ R6:999.UL	---		
	R8:000.UL ~ R999:999.UL	---		
Control (IN)	R6:000.IN ~ R6:999.IN	---		
	R8:000.IN ~ R999:999.IN	---		

■ **PLC-5 Series** (Using Data Highway Plus) (Continued)

Setup System Area here.

Device	Bit Address	Word Address	Particulars	
Control (FD)	R6:000.IN ~ R6:999.FD	---		L/H
	R8:000.IN ~ R999:999.FD	---		
Control (LEN)	---	R6:000.LEN ~ R6:999.LEN		
	---	R10:000.LEN ~ R999:999.LEN		
Control (POS)	---	R6:000.POS ~ R6:999.POS		
	---	R10:000.POS ~ R999:999.POS		
Integral Numberl (N)	N7:000/0 ~ N7:999/15	N7:000 ~ N7:999		
	N8:000/0 ~ N:999/15	N8:000 ~ N:999:999		
Floating point (F)	---	F8:000 ~ F999:999		
ASCII (A)	---	A12:000 ~ A999:999		H/L

Note:

- **The range of supported devices may differ depending on your CPU.**
- **These maximum ranges may not be supported by some PLC configurations.**

■ **PLC-5 Series** (Using Remote I/O)

Device	Bit Address	Word Address	Particulars
Input	I:000/00 ~ I:377/17	I:000 ~ I:377	
Output	O:000/00 ~ O:377/17	O:000 ~ O.377	
Block Transfer (Read)	BTR:0000:00/00 ~ BTR:3771:63/15	BTR:0000:00 ~ BTR:3771:63	*1
Block Transfer (Write)	BTW:0000:00/00 ~ BTW:3771:63/15	BTW:0000:00 ~ BTW:3771:63	*1

**1 Block Transfer Read & Write (BTR & BTW) must be configured in the Environment Setup (See next section) before being able to use these addresses.*

Note:

- **These maximum ranges may not be supported by some PLC configurations.**
- **This driver cannot allocate the System Data Area for the PLC's Device Addresses.**

■ **MicroLogix 1000 Series** (using DH485)

Device	Bit Address	Word Address	Particulars	
Output (O)	O0:0/0	—	*3	
Input (I)	I1:0/0 ~ I1:1/17	—	*3	
Status (S)	S2:0/0 ~ S2:31/15	S2:0 ~ S2:31	*1 *2	
Bit (B)	B3:0/0 ~ B3:31/15	B3:0 ~ B31:2		L/H
Timer (PRE:Preset Value)	—	T4:0.PRE ~ T4:39.PRE	*4	
Timer (ACC:Accumlator Value)	—	T4:0.ACC ~ T4:39.ACC	*4	
Timer (EN:Enable Bit)	T4:0.EN ~ T4:39.EN	—		
Timer (TT:Timing Bit)	T4:0.TT ~ T4:39.TT	—		
Timer (DN:Done Bit)	T4:0.DN ~ T4:39.DN	—		
Counter (PRE:Preset Value)	—	C5:0.PRE ~ C5:31.PRE	*4	
Counter (ACC:Accumlator Value)	—	C5:0.ACC ~ C5:31.ACC	*4	
Counter (CU:Count up enable bit)	C5:0.CU ~ C5:31.CU	—		
Counter (CD:Count down enable)	C5:0.CD ~ C5:31.CD	—		
Counter (DN:Done Bit)	C5:0.DN ~ C5:31.DN	—		
Counter (OV:Overflow bit)	C5:0.OV ~ C5:31.OV	—		
Counter (UN:Underflow bit)	C5:0.UN ~ C5:31.UN	—		
Counter (UA:Update accumlator bit)	C5:0.UA ~ C5:31.UA	—		
Control (LEN:Length Value)	—	R6:0.LEN ~ R6:15.LEN	*4	
Control (POS:Position Value)	—	R6:0.POS ~ R6:15.POS	*4	
Control (EN:Enable bit)	R6:0.EN ~ R6:15.EN	—		
Control (EU:Update enable bit)	R6:0.EU ~ R6:15.EU	—		
Control (DN:Done bit)	R6:0.DN ~ R6:15.DN	—		
Control (EM:Stack empty bit)	R6:0.EM ~ R6:15.EM	—		
Control (ER:Error bit)	R6:0.ER ~ R6:15.ER	—		
Control (UL:Unload)	R6:0.UL ~ R6:15.UL	—		
Control (IN:Inhibit bit)	R6:0.IN ~ R6:15.IN	—		
Control (FD:Found bit)	R6:0.FD ~ R6:15.FD	—		
Integer (N)	N7:0/0 ~ N7:104/15	N7:0 ~ N7:104		L/H

**1 No data can be written.*

**2 Addresses up to S:65/15 may be used for the PLC, and those up to S:31/15 for the GP.*

**3 Bit part: Octal input*

**4 Only 16-bit addresses may be specified. Since this is a structured device, trying to access it using a 32-bit address will result in accessing a different element. For the configuration of a structure device, refer to the corresponding PLC manual.*

- ***No ASCII (A), Floating point (F), and String (ST) devices exist in the MicroLogix1000.***

■ **MicroLogix 1200 Series** (using DH485)

Device	Bit Address	Word Address	Particulars	
Output (O)	O0:0/0 ~ O0:3/17	—	*5	
Input (I)	I1:0/0 ~ I1:3/17	—	*5	
Status (S)	S2:0/0 ~ S2:31/15	S2:0 ~ S2:31	*1 *2	
Bit (B)	B3:0/0 ~ B3:255/15 B9:0/0 ~ B255:255/15	B3:0 ~ B3:255 B9:0 ~ B255:255		L/H
Timer (PRE:Preset value)	—	T4:0.PRE ~ T4:255.PRE T9:0.PRE ~ T255:255.PRE	*3	
Timer (ACC:Accumulator value)	—	T4:0.ACC ~ T4:255.ACC T9:0.ACC ~ T255:255.ACC	*3	
Timer (EN:Enable bit)	T4:0.EN ~ T4:255.EN T9:0.EN ~ T255:255.EN	—	*6	
Timer (TT:Timing bit)	T4:0.TT ~ T4:255.TT T9:0.TT ~ T255:255.TT	—		
Timer (DN:Done bit)	T4:0.DN ~ T4:255.DN T9:0.DN ~ T255:255.DN	—		
Counter (PRE:Preset value)	—	C5:0.PRE ~ C5:255.PRE C9:0.PRE ~ C255:255.PRE	*3	
Counter (ACC:Accumulator value)	—	C5:0.ACC ~ C5:255.ACC C9:0.ACC ~ C255:255.ACC	*3	
Counter (CU:Count up enable bit)	C5:0.CU ~ C5:255.CU C9:0.CU ~ C255:255.CU	—		
Counter (CD:Count down enable bit)	C5:0.CD ~ C5:255.CD C9:0.CD ~ C255:255.CD	—		
Counter (DN:Done bit)	C5:0.DN ~ C5:255.DN C9:0.DN ~ C255:255.DN	—		
Counter (OV:Overflow bit)	C5:0.OV ~ C5:255.OV C9:0.OV ~ C255:255.OV	—		
Counter (UN:Underflow bit)	C5:0.UN ~ C5:255.UN C255:0.UN ~ C255:255.UN	—		
Counter (UA:Update accumulator bit)	C5:0.UA ~ C5:255.UA C9:0.UA ~ C255:255.UA	—		
Control (LEN:Length value)	—	R6:0.LEN ~ R6:255.LEN R9:0.LEN ~ R255:255.LEN	*3	
Control (POS:Positon value)	—	R6:0.POS ~ R6:255.POS R9:0.POS ~ R255:255.POS	*3	
Control (EN:Enable bit)	R6:0.EN ~ R6:255.EN R9:0.EN ~ R255:255.EN	—		
Control (EU:Update enable bit)	R6:0.EU ~ R6:255.EU R9:0.EU ~ R255:255.EU	—		
Control (DN:Done bit)	R6:0.DN ~ R6:255.DN R9:0.DN ~ R255:255.DN	—		
Control (EM:Stack empty bit)	R6:0.EM ~ R6:255.EM R9:0.EM ~ R255:255.EM	—		
Control (ER:Error bit)	R6:0.ER ~ R6:255.ER R9:0.ER ~ R255:255.ER	—		
Control (UL:Unload bit)	R6:0.UL ~ R6:255.UL R9:0.UL ~ R255:255.UL	—		
Control (IN:Inhibit bit)	R6:0.IN ~ R6:255.IN R9:0.IN ~ R255:255.IN	—		
Control (FD:Found bit)	R6:0.FD ~ R6:255.FD R9:0.FD ~ R255:255.FD	—		

Integer (N)	N7:0/0 ~ N7:255/15 N9:0/0 ~ N255:255/15	N7:0 ~ N7:255 N9:0 ~ N255:255		L/H
Floating point (F)	—	F8:0 ~ F8:255 F9:0 ~ F255:255	*4	
String (ST)	—	ST9:0 ~ ST9:46 ST10:0 ~ ST10:46 . . . ST255:0 ~ ST255:46	*1 *7	

**1 No data can be written.*

**2 The addresses up to S:65/15 may be used for the PLC, and those up to S:31/15 for the GP.*

**3 Only 16-bit addresses may be specified. Since this is a structure device, trying to make access using a 32-bit address will result in accessing a different element. For the configuration of a structure device, refer to the corresponding manual for the PLC.*

**4 32-bit device*

**5 Bit part: Octal input*

**6 If the bits are turned ON by the GP when File No. is 255, the upper communication error (02:CF) occurs. The bits can only be turned OFF.*

**7 Character string type*

Important

- ***No ASCII (A) devices exist in the MicroLogix1200. The Long (L), Message (MG), PID (PID), and Programmable Limit Switch (PLS) are not supported by the GP.***

■ MicroLogix 1500 Series (using DH485)

Device	Bit Address	Word Address	Particulars	
Output (O)	O0:0/0 ~ O0:3/17	—	*4	
Input (I)	I1:0/0 ~ I1:3/17	—	*4	
Status (S)	S2:0/0 ~ S2:31/15	S2:0 ~ S2:31	*1 *2	
Bit (B)	B3:0/0 ~ B3:255/15 B9:0/0 ~ B255:255/15	B3:0 ~ B3:255 B9:0 ~ B255:255		L/H
Timer (PRE:Preset value)	—	T4:0.PRE ~ T4:255.PRE T9:0.PRE ~ T255:255.PRE	*3	
Timer (ACC:Accumulator value)	—	T4:0.ACC ~ T4:255.ACC T9:0.ACC ~ T255:255.ACC	*3	
Timer (EN:Enable bit)	T4:0.EN ~ T4:255.EN T9:0.EN ~ T255:255.EN	—	*5	
Timer (TT:Timing bit)	T4:0.TT ~ T4:255.TT T9:0.TT ~ T255:255.TT	—		
Timer (DN:Done bit)	T4:0.DN ~ T4:255.DN T9:0.DN ~ T255:255.DN	—		
Counter (PRE:Preset value)	—	C5:0.PRE ~ C5:255.PRE C9:0.PRE ~ C255:255.PRE	*3	
Counter (ACC:Accumulator value)	—	C5:0.ACC ~ C5:255.ACC C9:0.ACC ~ C255:255.ACC	*3	
Counter (CU:Count up enable bit)	C5:0.CU ~ C5:255.CU C9:0.CU ~ C255:255.CU	—		
Counter (CD:Count down enable bit)	C5:0.CD ~ C5:255.CD C9:0.CD ~ C255:255.CD	—		
Counter (DN:Done bit)	C5:0.DN ~ C5:255.DN C9:0.DN ~ C255:255.DN	—		
Counter (OV:Overflow bit)	C5:0.OV ~ C5:255.OV C9:0.OV ~ C255:255.OV	—		
Counter (UN:Underflow bit)	C5:0.UN ~ C5:255.UN C255:0.UN ~ C255:255.UN	—		
Counter (UA:Update accumulator bit)	C5:0.UA ~ C5:255.UA C9:0.UA ~ C255:255.UA	—		
Control (LEN:Length value)	—	R6:0.LEN ~ R6:255.LEN R9:0.LEN ~ R255:255.LEN	*3	
Control (POS:Positon value)	—	R6:0.POS ~ R6:255.POS R9:0.POS ~ R255:255.POS	*3	
Control (EN:Enable bit)	R6:0.EN ~ R6:255.EN R9:0.EN ~ R255:255.EN	—		
Control (EU:Update enable bit)	R6:0.EU ~ R6:255.EU R9:0.EU ~ R255:255.EU	—		
Control (DN:Done bit)	R6:0.DN ~ R6:255.DN R9:0.DN ~ R255:255.DN	—		
Control (EM:Stack empty bit)	R6:0.EM ~ R6:255.EM R9:0.EM ~ R255:255.EM	—		
Control (ER:Error bit)	R6:0.ER ~ R6:255.ER R9:0.ER ~ R255:255.ER	—		
Control (UL:Unload bit)	R6:0.UL ~ R6:255.UL R9:0.UL ~ R255:255.UL	—		
Control (IN:Inhibit bit)	R6:0.IN ~ R6:255.IN R9:0.IN ~ R255:255.IN	—		
Control (FD:Found bit)	R6:0.FD ~ R6:255.FD R9:0.FD ~ R255:255.FD	—		

Integer (N)	N7:0/0 ~ N7:255/15 N9:0/0 ~ N255:255/15	N7:0 ~ N7:255 N9:0 ~ N255:255		L/H
String (ST)	—	ST9:0 ~ ST9:46 ST10:0 ~ ST10:46 . . . ST255:0 ~ ST255:46	*1 *3 *6	

**1 No data can be written.*

**2 Since addresses up to S:65/15 may be used for the PLC and those up to S:31/15 can be set up for the GP, the maximum is S:31/15*

**3 Only 16-bit addresses may be specified. Since this is a structured device, trying to access it using a 32-bit address will result in accessing a different element. For the configuration of a structured device, refer to the corresponding PLC manual.*

**4 Bit setting: Octal*

**5 If the bits are turned ON by the GP when File No. is 255, a host communication error (02:CF) occurs. The bits can only be turned OFF.*

**6 Character string type*

- ***No Floating point (F) and ASCII (A) devices exist in the MicroLogix1500. The Long (L), Message (MG), and PID (PID) are not supported by the GP.***

6.2.4 Environment Setup

- ***When entering the GP OFFLINE mode's Set up Operation Surroundings, be sure to select the [GP-PRO/PBIII for Windows] Edit mode. (Data Highway Plus and Remote I/O)***
- ***These settings cannot be set using the GP's OFFLINE Communication Settings. Be sure to use GP-PRO/PBIII for this.***
- ***These settings cannot be set using the GP's Environment Settings. Be sure to use GP-PRO/PBIII for this.***
- ***E and K-tags cannot use the "Indirect" Setting.***
- ***32 bit-length data cannot be written. (DH485)***
- ***K-tag text (columns) data cannot be written. (DH485)***
- ***After the H-tag starts (is triggered), data cannot be read (out).***
- ***After the S-tag starts (is triggered), data cannot be read (out).***
- ***The Trend graph's group data display's PLC device designation feature cannot be used.***
- ***The System Area and the Read (In) Area cannot be used. (Only with Remote I/O)***
- ***For GP70 Series, the data backup feature cannot be used (Data Highway Plus, Remote I/O).***
- ***D-Script 's Memory Copy and Offset Address features cannot be used.***
- ***The Logging and Filing Data features cannot be used.***
- ***2-Way Driver can access to only LS area (Data Highway Plus, Remote I/O).***

■ SLC 500 Series (Using DH485)

GP Setup		PLC Setup	
Baud Rate	19200 bps	---	
Data Length	8 bits	---	
Stop Bit	1 bit	---	
Parity Bit	Even	---	
Data Flow Control	ER Control	---	
Communication Format (RS-232C)	RS-232C *1	---	
Communication Format (RS-422)	2-wire type *2	---	
Unit No.	---	---	
Source ID	0	---	
Destination ID	1	Node Address	1
Maximum ID	31	Maximum Address	31

** 1 Set the Communication Format to RS-232C when using the HMI-CAB-C84 cable.*

** 2 Set the Communication Format to RS-422 when using the HMI-CAB-C83 cable.*

■ SLC 500 Series (Using Data Highway Plus)

GP Setup		PLC Setup	
Baud Rate	---	---	---
Data Length	---	---	---
Stop Bit	---	---	---
Parity Bit	---	---	---
Data Flow Control	---	---	---
Communication Format (RS-232C)	---	---	---
Communication Format (RS-422)	---	---	---
Unit No.	---	---	---
Source ID *1	0	---	---
Destination ID *1	1	Node Address	1

** 1 These settings can be made by "option" of GP system setting in Drawing Software (PRO/PBIII for Windows). It is not possible to set from the GP's OFFLINE menu.*

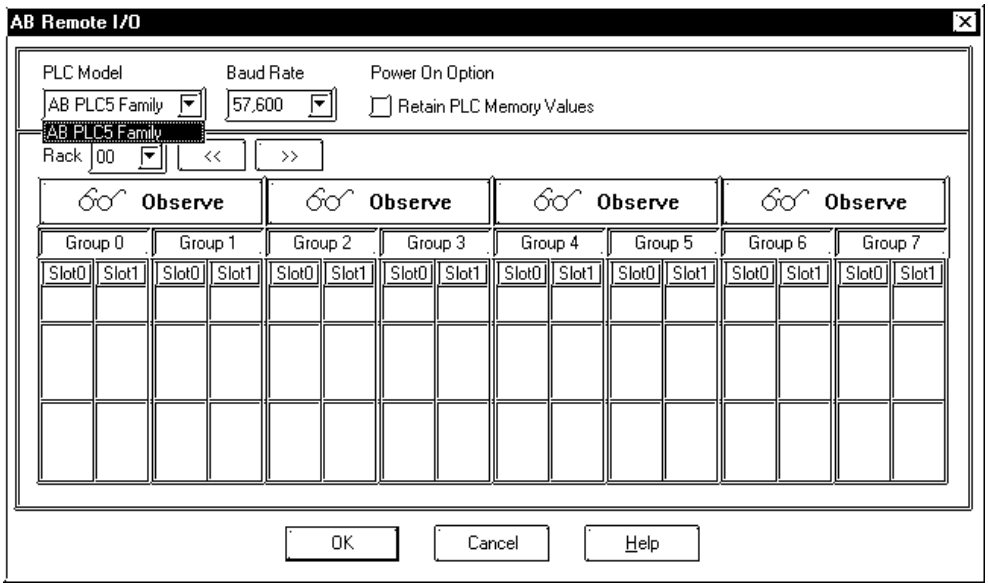
■ **PLC 5 Series** (Using Data Highway Plus)

GP Setup		PLC Setup	
Baud Rate	57600 bps	Baud Rate	57600 bps
Data Length	---	---	---
Stop Bit	---	---	---
Parity Bit	---	---	---
Data Flow Control	---	---	---
Communication Format (RS-232C)	---	---	---
Communication Format (RS-422)	---	---	---
Unit No.	---	---	---
Source ID *1	0	---	---
Destination ID *1	1	Node Address	1

** 1 These settings can be set via the GP-PRO/PBIII [Option] area. These settings cannot be set using the GP's OFFLINE Mode.*

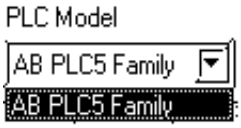
■ **PLC-5 Series** (Using Remote I/O)

If you select the PLC type setting as [AB Remote I/O] for your GP-PRO/PBIII project, you will also need to configure your GP unit's I/O addresses. After the project is setup, the following configuration window can be found by clicking on the Mode Settings area's "Rack Setup" button.



◆ **PLC Model**

Currently, only the AB PLC 5 Family is supported.

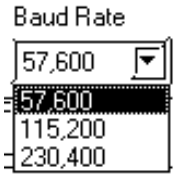


◆ **Baud Rate**

Select the baud rate used for the Remore I/O network. This selection must match that of the intended network.

Important

Early versions of the QPI-ABR-001 RIO modules are not capable of operating at 230,400bps baud.



◆ **Retain PLC Memory Values**

To retain the memory values of all data input and all Block Transfer Reads (BTR), click on the checkbox titled "Retain PLC Memory Values. If this box is not checked, all data values will be set to 0 when the power is cycled (turned off).

◆ **Rack**

A rack corresponds to the I/O rack number of the I/O chassis in which you have placed the target I/O module. For rack emulation, the target I/O module is the emulated rack. The valid ranges for rack numbers are shown below.
You cannot do a block transfer to a rack above address 17.

Processor	Maximum No. of Racks	Valid Range (octal)
PLC-5/10, -5/12, -5/15	4	00 - 03
PLC -5/25, -5/30	8	00 - 07
PLC-5/40, -5/40L	16	00 - 17
PLC-5/60, -5/60L	24	00 - 27

1. Observe Mode

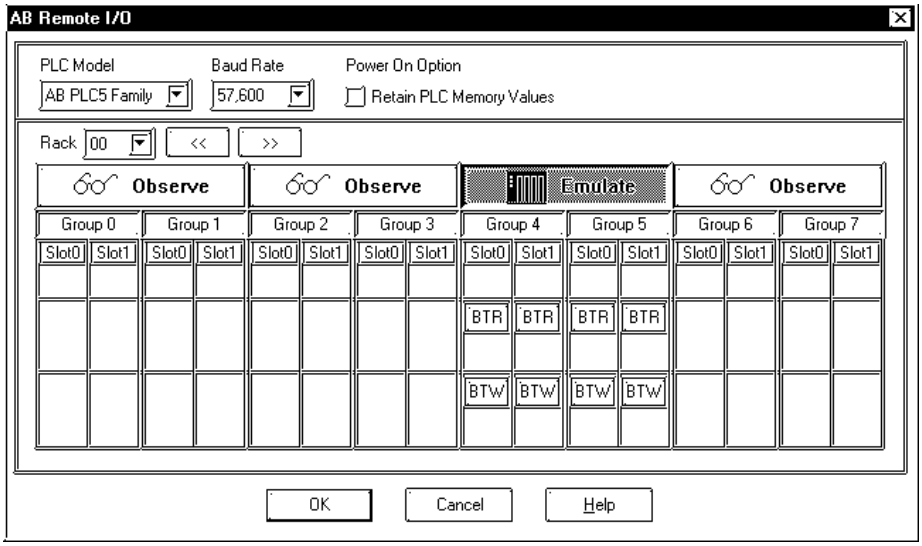
When you first start a project using Remote I/O, all racks are in OBSERVE mode, which allows the target display to listen to all discrete I/O transfers on the Remote I/O link.

An Allen Bradley rack corresponds to 128 input bits and 128 output bits of defined PLC data table memory. In the PLC memory, a "data table" reserves 128 bits for both input and output. This data table then allows the PLC to communicate with all other devices. No matter what I/O scheme (configuration) is being used, 1, 1/2, 1/4 slot addressing, the limit per rack is 128 bits.

When you select two (2) slot addressing, each pair of slots is assigned to the corresponding pair of words in the input and output image tables. You assign one I/O rack number to eight (8) I/O groups. The following drawing shows a rack of I/O that has been set up to use 2-slot addressing.

2. Emulate Mode

You can also have your GP emulate a rack for only discrete I/O, or configure it to work with "Block Transfer" read and write operations.



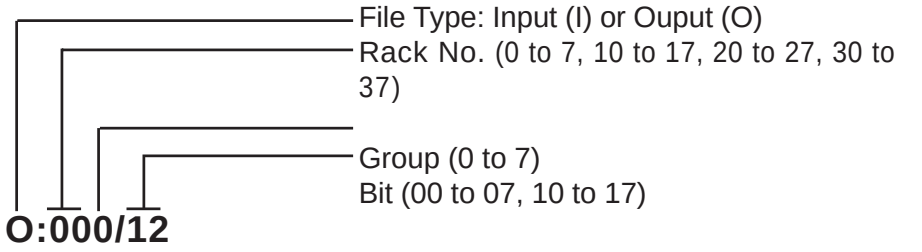
■ Discrete I/O

From the configuration shown above (this window can be called up using the Project Setup area Mode tab's "Rack Setup" selction), select the areas of the master PLC's I/O table that the GP should emulate.

Caution

These areas should not be used by any other device.

In the above example, this GP will emulate Rack 00, Groups 4 and 5. This means that the GP can use addresses O:004/00 to O:004/17 and I:004/00 to I:004/17.



■ Block Transfer

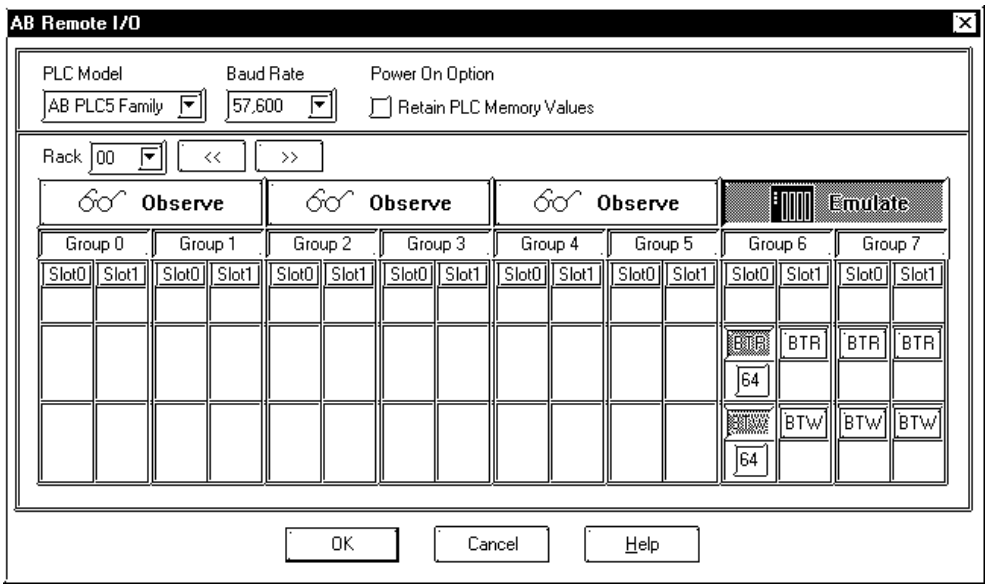
"Block Transfer" commands allow you to send and receive data to and from a PLC.

Use the configuration window shown below (called up by clicking on the Project Setup area Mode tab's [Option]) to select the areas of the master PLC's I/O table that should be used by the GP for Block transfer (Read or Write) and how many words (0 to 64) should be transferred.

Important

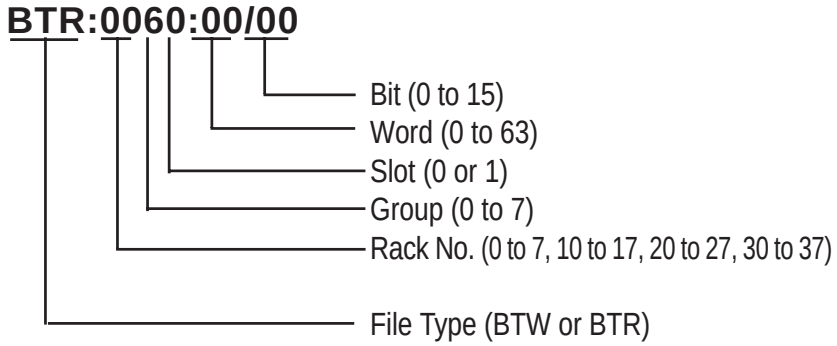
These areas should not be used by any other device.

The block transfer area selected here must be accompanied by an equivalent Block Transfer command in the PLC ladder program.

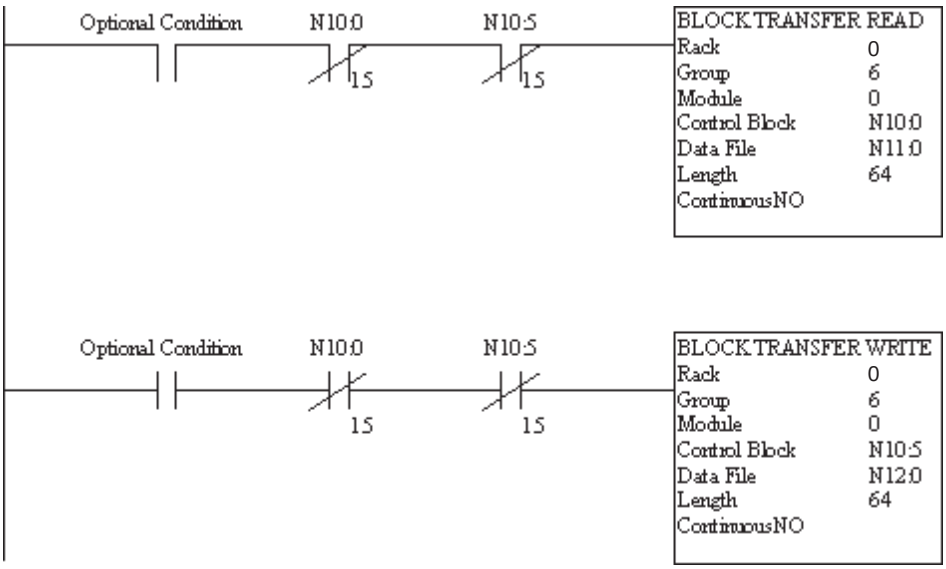


The difference between the BTR and BTW data types is very important. A BTR is s "Block Transfer Read" from the GP to the PLC, which means the GP can write to this area. A BTW is a "Block Transfer Write" from the PLC to the GP, which means the GP can read data from this area.

In the above example, the GP is using Rack 00, Group 6, Slot 0 for Block Transfer. Slot 0 is set with a BTR and BTW of 64. This means that the GP can use addresses BTR:0060:00 to BTR:0060:63, and BTW:0060:00 to BTW:0060:63.



The ladder program below shows how to transfer data from the GP to N10:0 to 63 and data (from the PLC's) N:11:0 to 63 into the GP.



■ MicroLogix 1000/1200/1500 Series

GP Setup		PLC (Channel 0) Setup	
Baud Rate	19200 bps	Baud Rate	19200 bps
Data Length	8 bits	---	---
Stop Bit	1 bit	---	---
Parity Bit	Even	---	---
Control Method	ER Control	---	---
Communication Format	RS-232C	---	---
	RS-422 (2-wire Type)	---	---
Source ID *1	0 to 31	---	---
Destination ID *1	0 to 31	Node Address *1	0 to 31
Maximum ID *2	0 to 31	Max.Node Address *2	0 to 31
---	---	Dribver	DH485
---	---	Token Hold Factor	2

*1 *Specify only unique node addresses so that they do not overlap node addresses of other equipment connected to the DH485 network.*

*2 *This is the largest node address of the active processor. Specify the smallest practical value for the maximum node address. This will shorten the time required for initializing the network. All the node addresses are continuously specified starting with 0. When the value specified for the maximum node address is the same as that connected to the DH485 network, the transmission speed of the DH485 network can be improved.*

MEMO