



## Symphony™ Plus, General Purpose Interface (GPI) version 4.0, Data Sheet

### Highlights

- Harmony PCU Gateway (HPG-800), BRC-410 serial communication support
- Runs in a Harmony PCU Gateway, Multi-Function Processor (MFP02/12/03), Bridge Controller (100/200/300/400/410), and Harmony Area Controller
- Support for block numbers greater than 10,000 (applicable to the BRC-400/410 and HPG-800).
- Support for baud rate up to 38,400 with BRC's and HPG.
- Up to 4,000 data points
- Connects to a network of up to 50 PLC's
- Enables users to have all system data displayed in a common operator station interface or information system.
- One Window interface to Allen Bradley, Siemens, GE, Reliance, Modicon, Square-D and T1
- Support for UDF (User Defined Function Blocks) and Batch within the same module.
- Write Enable Refresh for both Allen Bradley and Modbus RTU.
- GPI Configuration tool, Composer Drawing Manager; the ability to create the Composer logic drawings (CLDS) for the Analog and Digital data to be transferred from the foreign device to the GPI controller on the Symphony system. This feature is for the Allen Bradley and RTU Master interfaces. The logic is created using a set of templates and includes both the block number assignments and tag definitions.

### System / Application Compatibility

General Purpose Interface version 4.0 user interface shares the Composer semAPI / HAPI systems interface for connecting and communicating with ABB system controller modules. The GPI 4.0 software is installed on a Composer workstation, therefore has the same workstation requirements as Composer.

GPI supports the following ABB controller modules MFP02/12 firmware revision G8, MFP03 firmware revision G8, BRC-100 firmware revision E0, BRC-300 firmware revision L\_9 or later, BRC-400 firmware revision L\_9 or later , HPG-800 at firmware revision L\_9 or later, and BRC-410 modules at firmware revision M\_0 or later.

The GPI application cannot be used concurrently with Harmony Gateway Software (HGS) in the HPG-800 or BRC-410 controllers.

**Protocol Sub-Set Supported**

Modbus protocol supported.

Function	Description
1	Read Coil Status
2	Read Input Status
3	Read Output Register
4	Read Input Register
5	Force Single Coil
6	Preset Single Register
8	Loopback Diagnostic Test Diagnostic Codes 0 (Loopback Test) to test standby port only. 11 Bus Message Count 12 Bus Communication Error Count 13 Bus Exception Error Count 14 Slave Message Count 15 Slave No Response Count 16 Slave NAK Count 17 Slave Busy Count 18 Bus Character Overrun Count 19 Overrun Error Count
15	Force Multiple Coils
16	Preset Multiple Output Registers

Modbus RTUSlave functions supported.

Function	Description
1	Read Coil Status
2	Read Input Status
3	Read Output Register
4	Read Input Register
5	Force Single Coil
6	Preset Single Register
8	Loopback Diagnostic Test Diagnostic Codes: 0 Loopback Test Other Diagnostic codes are not supported. The RTUSlave software does not maintain this diagnostic information.
15	Force Multiple Coils
16	Preset Multiple Output Registers
17	Report Slave ID (emulates a 584 PLC response)

Allen-Bradley DF1 protocol commands supported.

PLC	Medium	Command cmd (fnc)	Description
PLC-2	DH	00	Protected Write
		01	Unprotected Read
		02	Protected Bit Write
		05	Unprotected Bit Write
		08	Unprotected Write
PLC-3	DH	0F (00)	Word Range Write
		0F (01)	Word Range Read
		0F (02)	Bit Write
		0F (08)	Physical Write
PLC-5	DH+ ControlNet DeviceNet	0F (00)	Word Range Write
		0F (01)	Word Range Read
		0F (26)	Read-Modify-Write
PLC-5/250	DH+ ControlNet DeviceNet	0F (00)	Word Range Write
		0F (01)	Word Range Read
		0F (26)	Read-Modify-Write
SLC-500 SLC-5/01 SLC-5/02 SLC-5/04	DH485	0F (A2)	Protected Typed Logical Read with three address fields
		0F (AA)	Protected Typed Logical Write with three address fields
SLC-5/04	DH+ ControlNet DeviceNet	0F (A2)	Protected Typed Logical Read with three address fields
		0F (AA)	Protected Typed Logical Write with three address fields

Controller Module Requirements.

Module	Product	Capacities	Peripheral Hardware
MFP03	RTU RTUSlave AB	500 1500 3000 4000 (Not relevant to RTUSlave)	IMMPI01 Module
			Auxiliary I/O ribbon cable 1948720A60
			Termination unit (NTMP01) and cable (NTKU01) or Termination module (NIMP01) and cable (NTKU02)
BRC- 100/200/300/400/410 HPG-800	RTU RTUSlave AB	500 1500 3000 4000 (Not relevant to RTUSlave)	Processor bus adapter board (PBA board)
			Termination unit (NTMP01) and cable (NTKU01) or Termination module (NIMP01) and cable (NTKU02)
MFP02/12	RTU RTUSlave AB	500 1500 (Not relevant to RTUSlave)	Termination unit (NTMP01) and cable (NTKU01) or Termination module (NIMP01) and cable (NTKU02)

Specifications.

	RTU	RTUSLAVE	AB
PLC's	Siemens GE 9070, GE 6 GE 5 Reliance Modicon Square - D T1	GPI RTU Foxboro DCS	AB PLC – 2 AB PLC – 5 AB PLC – 3 AB PLC - 5/250 AB SLC DH, DH +, DH II, DH-485
Interface Type	RS-232	RS-232	RS-232
Command Protocol	Modbus (RTU) Commands: 1,2,3,4,5,6,8,11,15,16	Modbus (RTU) Commands: 1,2,3,4,5,6,8,11,15,16,17	Data Highway Data Highway + PCL Data Highway II Native DH-485 (SLC-500)
Point Capacity (Controlway)	Up to 4,000	Associates Modbus address of received command with block number in module (using optional bias)	Up to 4,000
Point Capacity (Module bus)	Up to 4,000	Associates Modbus address of received command with block number in module (using optional bias)	Up to 4,000
No of networked PLC's	Up to 50	Responds to Modbus Master commands received via either port (Terminal or Printer port)	Up to 50
Analog data translation	Translation for PLC analog 16-bit signed or unsigned integers, unsigned 32-bit integers and IEEE float values	16-bit integer globally defined as signed or unsigned.	Translation for PLC analog 16-bit signed or unsigned integers, unsigned 32-bit integers and IEEE float values

## Documentation

The following documents provide technical and commercial information concerning General Purpose Interface Software version 4.0. All documentation is available on the ABB Library under Control Systems.

3BCA040093R0003	General Purpose Interface Price Book
3BCA010145R1701	General Purpose Interface User Manual
3BCA017032R1701	General Purpose Interface Slide Presentation

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