

ABB Symphony® Plus Gateway Software (SGS)

Configurable software



The Symphony Plus Gateway Software (SGS) is configurable software that is a component of the Symphony Plus module. The software interfaces between a PLC network and the HR and SD series controllers providing bi-directional server or client communication (AO, AI, DO, DI) in real-time.

The Symphony Plus Gateway Software consists of two main components: Engineering Utilities and Runtime software. The Engineering Utilities of SGS provide a full function menu driven interface that simplifies configuration for startup engineering, commissioning and ongoing maintenance of the ModbusTCP interface. With first time configurations engineering hours can be reduced by using the Quick Config feature as only minimum parameters are required in a single table to generate the Mapping and Client Definition tables. Individual interface points can be configured using the SGS menus.

The Runtime portion of SGS performs ModbusTCP communications to other ABB equipment (e.g. AC500, AC 800M) or 3rd party PLC's over a 100Mbps Ethernet network and remote wireless gateways.

The Symphony Plus Gateway Software is licensed on the number of function block outputs and inputs to be exchanged by the interface. SGS uses a mapping database to define which Modbus data points are to be exchanged between the Modbus Transfer Tables and the Harmony function block in the controller's configuration. Harmony function blocks typically contain more information than an equivalent Modbus point can support, making it necessary to map more than one Modbus point to a single Harmony function block. SGS employs the use of multi-mapping to allow quality, alarms and values to be fully defined within the ModbusTCP configuration.

On the ModbusTCP network, connections between client and server devices are made through TCP sockets. Depending on the module being used the SGS can be configured to a maximum of 8 server connections to foreign Modbus clients and 128 client connections to foreign Modbus servers.

Features and benefits

- Bi-directional communication in real-time with Modbus devices
- Supports standard Modbus function codes and Modbus exception codes
- Exception and cyclic data writes
- Communication rates are fully tunable to meet requirements.
- Diagnostics enables users to isolate and troubleshoot one connection
- Support of online configuration (change in function blocks of the SGS points) with redundant controllers

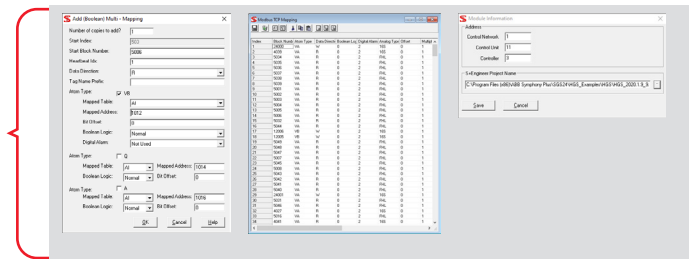
PROPERTY	CHARACTERISTIC/VALUE
Harmony function blocks	Up to 32,000 function block configuration
License point counts	500, 1,500, 3,000, 4,000, 10,000 (100 – process panel)
Module supported	BRC410, HPC800, SPC700, SPC800, SPC810 ev
Modbus TCP	BRC410 – up to 4 servers and 24 clients
• Server connections to foreign Modbus clients	HPC800, SPC800, SPC810ev – up to 8 servers and 128 clients
• Client connections to foreign Modbus servers	SPC700 - up to 4 servers and 24 clients Process panel – 1 server and 1 client

Control Engineering Workstation

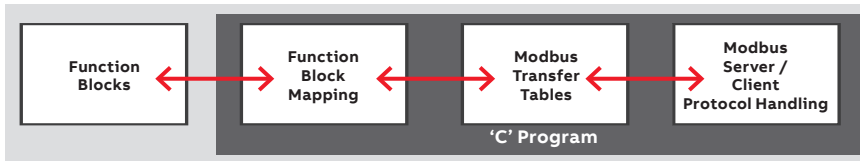


PN800 Plant Network 10 / 100 MB Ethernet TCP

SGS Engineering Utilities



Configuration



SGS Runtime software

Symphony Plus gateway software



Modbus TCP
Commands /
replies
100 MB
Ethernet

Symphony Plus Engineering Workstation



Control Engineering for Harmony SGS

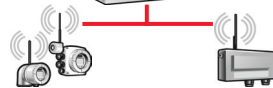
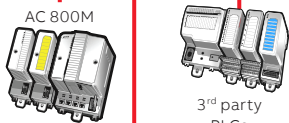
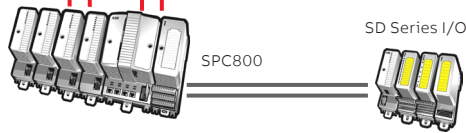
Symphony Plus Operations Servers



Symphony Plus Operations Workstations



PN800 (100MB Ethernet TCP/IP)



Point Data Connections

HARMONY FUNCTION BLOCK	POINT TYPE	MODBUS DATA POINT
FC 30 Block	<-WXR ---	AO or AI
FC 137 Block	<--W ---	AO or AI
FC 15 Block ¹	--- R -->	AO or AI
FC 68 Block ¹	--- R -->	AO or AI
FC 45 Block	<-WXR ---	DO, DI, AO or AI
FC 138 Block	<--W ---	DO, DI, AO or AI
FC 39 Block ²	--- R -->	DO, DI, AO or AI
FC 62 Block ²	--- R -->	DO, DI, AO or AI