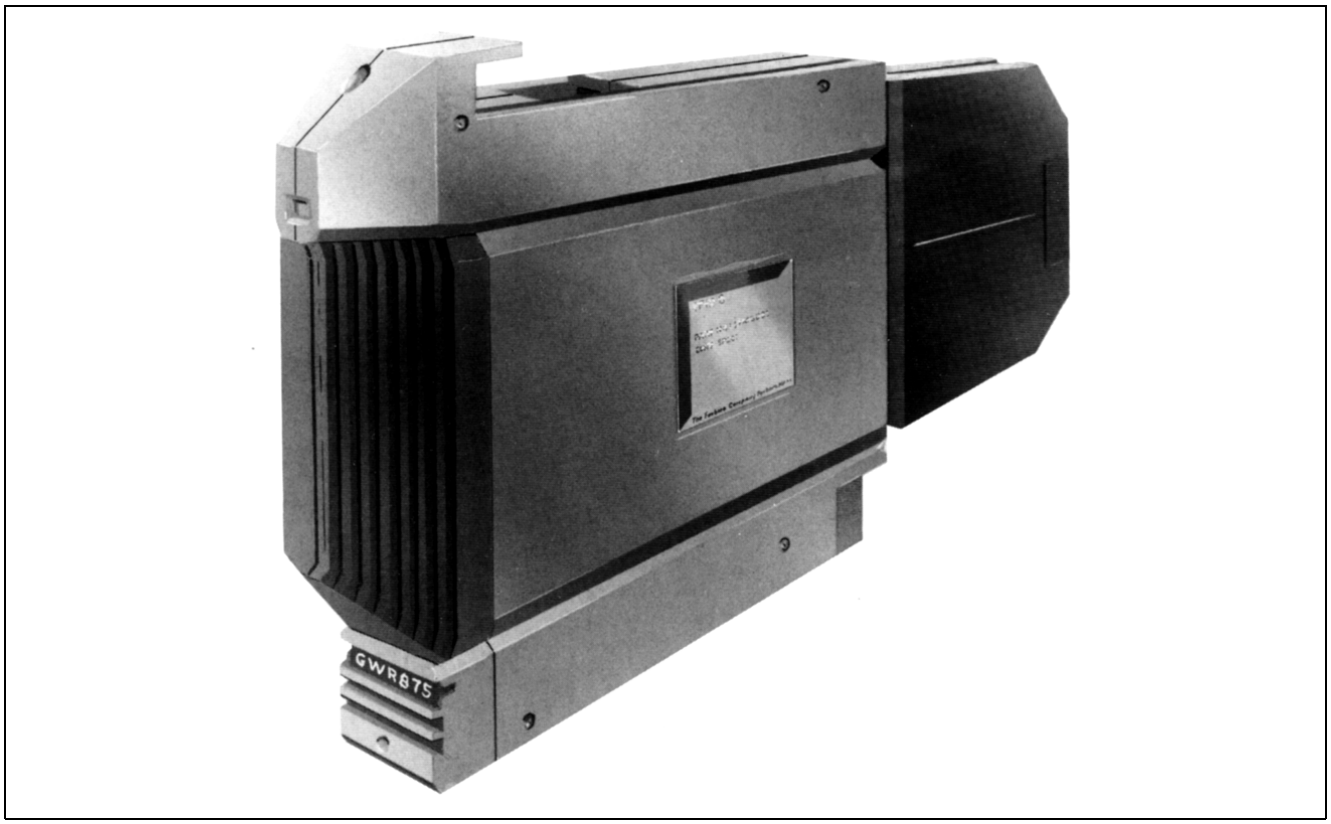
FOXBORO®

PSS 21H-7J1 B3

I/A Series® Hardware
Instrument Gateway



The Instrument Gateway is a station on the I/A Series System network that provides for the integration of data from up to sixty Foxboro 760 and/or 761 Series Devices. Communication to the controllers is accomplished by an RS-485 Data network.

Data from the controllers may be accessed in I/A Series databases for operator display interactions, supervisory control, and report and historian functions using standard I/A Series techniques. The gateway has two RS-232-C compatible asynchronous serial ports enabled for communication with the controllers via a Foxboro Model F6501A RS-232-C/RS-485 Interface Unit.

The gateway interfaces to the controllers via the Interface Unit over an RS-485 compatible serial multidrop link, as shown in Figure 1.

The gateway offers these features:

- Communication Interface
- Block Detail Displays
- Alarm Functions
- Application Interface

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Product Specifications

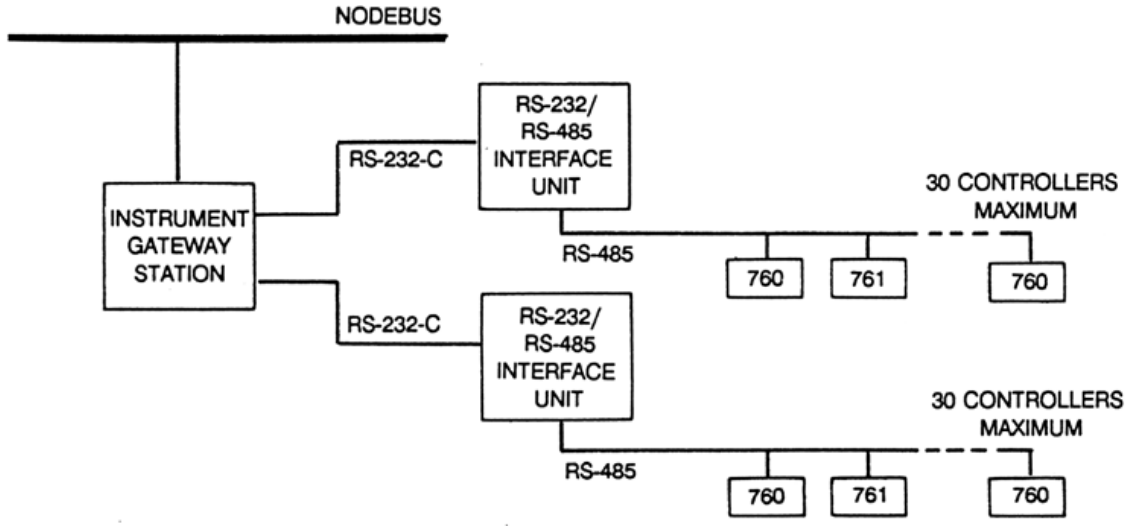

Figure 1. Gateway Interface to I/A Series Nodebus

Communication Interface

The gateway permits communication from an I/A Series System directly to controllers via standard I/A Series compound and block processing, interprocess communication and Object Manager access methods. Blocks dedicated for use with specific controllers may be included in block and group displays, graphic displays, historian functions, and other applicable areas. In addition, controller blocks, as well as the specific controller equipment control blocks (ECBs), are supported by Automated Data Capture (ADC).

Through block configuration for each controller, the user specifies controller ID, phase, period and alarm options, and the type of data to be accessed (by a “poll type”). A number of poll types is supported that allow different combinations of controller data to be dynamically updated. For 760 and 761 Controllers, the Primary Poll provides setpoint, measurement, output, auto/manual (A/M) status, remote/local (R/L) status, workstation/ panel (W/P) status and alarm state.

The Secondary Poll provides secondary setpoint, measurement, output, and status parameters for the 761 Controller when cascade control is configured. Extended polls provide additional parameters that can be configured for dynamic updates; they are input variables A, B, C, and D, for both 760 and 761 Controllers; and, for the 761Controllers, input variables E and F, constants G, H, I, and J, contact states, and parameters OUT1 and OUT 2.

The I/A Series Station Manager monitors the communications between the gateway and the controllers, and indicates the health status of each controller. As part of the standard system management functions, communication between the gateway and the controllers may be placed on or off-line. In addition, individual controllers can be placed on or off-line to the I/A Series System.

Block Detail Display Functions

A separate set of standard block detail displays exist for 760 and 761 controller block types, D760 and D761. They display measurement, setpoint and output values, status information (A/M, R/L, and W/P), and display existing alarms for the primary controller.

Setpoint, output, A/M status and R/L status parameters may be written to the individual controllers from an I/A Series workstation. Also provided are sub-pages for displaying and writing workstation secondary poll parameters, and alarm and tuning parameters. Only those parameters configured to be polled are dynamically updated on displays. Other parameters are updated by depressing the UPDATE soft key on the display, which performs an upload of the selected controller parameters.

Alarm Functions

The gateway fully supports standard I/A Series alarm functions. Alarms are read from the controllers and reported to the I/A Series operator via the alarm logging devices as configured in the gateway compound/block database. All alarms in an individual controller are acknowledged at one time from an I/A Series display. To allow for the dynamic suppression of selected alarms from the I/A Series workstation, the Priorities and Inhibit parameters of alarms are specified during block configuration.

Application Interface

The gateway provides an interface for application programs to communicate with controllers via standard I/A Series interprocess communication connected services. An application can transmit commands to specific controllers for reading and writing controller parameters. All error checking for message commands issued to and received by the application from the gateway must be done by the application.

Diagnostics

The gateway uses three types of diagnostic tests to detect and/or isolate faults:

- Power-up self checks
- Run-time and watchdog timer checks
- Off-line diagnostics

Power-up self-checks are self-initiated when power is applied to the gateway. These checks perform sequential tests on various gateway functional elements. Red and green indicators at the front of the gateway reflect the successful (or unsuccessful) completion of the startup sequence.

The run-time and watchdog timer checks provide continuous monitoring of the gateway functions during normal operations. The operator is informed of a malfunction by means of printed or displayed system messages.

Off-line diagnostics are temporarily loaded into the system for the purpose of performing comprehensive tests and checks on various stations and devices. By using the off-line diagnostics, the operator can isolate and/or confirm a suspected fault in the gateway.

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