

I/A Series® Hardware

Allen-Bradley Data Highway Gateway



The Allen-Bradley Gateway allows the integration of data from Allen-Bradley Programmable Logic Controllers (PLC'S) into I/A Series databases so that the data may be accessed by standard I/A Series blocks.

The Gateway interfaces to the Allen-Bradley Data Highway using 1771-KE/KF, 1770-KF2 Series B, or 1779-KFL (in 1771-KE/KF Emulation Mode) Communication Adapters. The Gateway is responsible for translating data received from the PLC controllers into an I/A Series database for incorporation into I/A Series based plant management functions and operator displays. Data access is supported by a subset of the Allen-Bradley Data Highway command set. An additional capability of the Gateway allows any Allen-Bradley Data

Highway command supported by the PLC controller to be initiated from an Application Processor via a "Message Pass Through" function.

FUNCTIONAL SPECIFICATIONS

The Allen-Bradley Data Highway Gateway provides communications with the PLC controllers via an RS-232-C serial Highway Communications Adapter.

The following Allen-Bradley PLC controllers are supported:

- PLC-2
- PLC-3
- PLC-5

The Gateway collects the required data from the PLC controllers, converts the data, and then stores the data in the Integrated Control Configurator database for access by I/A Series based plant management functions and operator displays. Data may also be written out to the individual PLC controllers from the I/A Series system. The Gateway supports both input and output to PLC controllers for the following I/A Series block types:

AIN	DEP	MON
ALMPRI	EXC	MOVLV
AOUT	GDEV	MTR
CALC	IND	PATLALM
CHARC	MAIN	REALM
CIN	MCIN	TIM
COUT	MCOUT	VLV

Support is also provided for the standard I/A Series sequence block functions and Boolean Alarm blocks. The Gateway supports a maximum of 16 I/A Series Allen-Bradley Scan Blocks (ABSCAN) to perform input/output functions with up to eight PLC controllers. Only one ABSCAN block may reside in a compound. Each ABSCAN block can access up to 60 analog or 960 digital points from any one PLC controller.

The System Health Displays for the Gateway show the Gateway as a Control Processor, with the PLC controllers appearing as Fieldbus Modules (FBM's). These displays can be used to connect or disconnect communications paths to the PLC controllers.

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PACKAGING AND ARCHITECTURE

The Gateway is packaged as non-expandable single width Z-Module which connects to the Mounting Structure Bus and accesses the Nodebus. Connections to Allen-Bradley Communications

Adapters are made via connections to cable connectors secured too the top or bottom of the mounting structure that houses the Gateway. The Gateway hardware architecture consists of the following:

- Processor
- Dynamic RAM Memory
- Nodebus Interface
- RS-232-C Interface I/O Port

DIAGNOSTICS

The Gateway utilizes three types of diagnostic to detect and/or isolate faults:

- Power-up self-checks
- Run-time and 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 a the front of the Gateway module reflect the successful (or non-successful) completion of the start-up sequence.

The run-time and watchdog timer checks provide continuous monitoring of Gateway communication processor functions during normal system 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 off-line diagnostics, a suspected fault in the Gateway can be isolated and/or confirmed.