

Gateway

Model 500

Specification

The Model 500 Gateway enables virtually any computer to communicate with up to 31 devices. These devices, connected together with Belden 9182 or 89182 cable, can communicate over distances of up to 4000 feet (1250 meters) on Honeywell's Distributed Manufacturing Control System (DMCS) Network. The devices can be any combination of

- UDC 6000 Process Controllers
- UDC 5000 Ultra-pro Controllers
- UDC 3000 Versa-pro Controllers
- DR 4500 Truline Recorders
- DPR 3000 Strip Chart Recorders
- 620 LCS Programmable Logic Controllers
- S9000 Controllers

The Gateway is the interpreter between the ASCII message protocol used by most computers and the highly secure protocol used on the DMCS network. through the Gateway, using your host computer, you can:

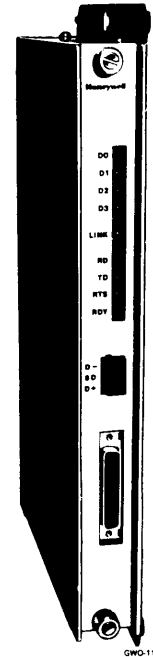


Figure 1 —Gateway Model 500

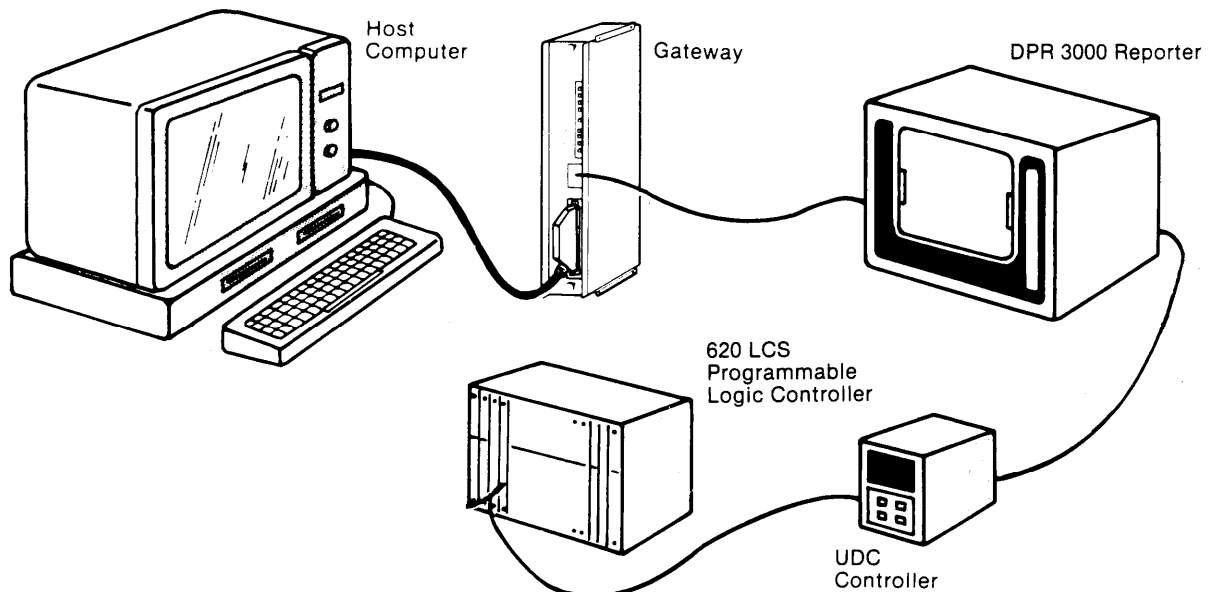


Figure 2—Devices which communicate with Gateway

Monitor Gateway enables you to monitor your manufacturing process from a central location. All inputs, outputs, and control parameters in UDC controllers and DPR recorders can be examined through Gateway. With 620 LCS programmable logic controllers, the Gateway can read timers, counters and data register values. It can read the status of input and output points.

Override Gateway lets your computer override inputs, outputs, and control parameters in UDC controllers and DPR recorders. The host can also write new values into 620 LCS programmable logic controller timers, counters, and data registers and turn discrete outputs on and off.

Configure Gateway allows you to configure the same parameters that an operator enters from the device's front panel. You can configure tuning constants, alarm limits, and output limits on UDC controllers. You can handle range limits, channel compensation, and chart ranges in DPR recorders.

Download Gateway supports the upload and download of complete configuration setups for some UDC controllers and DPR recorders. You can also upload and download 620 LCS ladder logic programs.

Diagnose Gateway lets your computer diagnose problems with some devices on the DMCS Network by reading self-diagnostic codes from the device's internal data base. Gateway also returns status information about itself and about the communication link.

Features

Easy Software Development

The Gateway and host computer communicate (Table 1) using simple ASCII messages and an uncomplicated data terminal protocol. Programming at the host computer can be done in any high level language like C or BASIC.

Secure Communications

Transmissions between the Gateway and devices on the DMCS Network take place on a shielded, twinaxial cable and are checked using a sophisticated error detection mechanism which ensures data integrity even under harsh, noisy plant floor conditions.

Optional length and checksum protocols improve the reliability of RS232 transactions with the host computer.

Link Isolation

Fused, transformer coupled interfaces protect the Gateway, your computer, and network devices from harmful voltages improperly applied to the DMCS cable. The Gateway is designed to handle shock, vibration, and ambient temperatures up to 60 degrees Celsius.

Modem Compatible

Gateway supports operation with RS232C compatible modems.

Self-Diagnostics

Gateway's internal software performs an extensive self-test on power-up and continues to monitor itself for correct operation thereafter. Diagnostic LEDs on the Gateway's front panel permit fault isolation.

Throughput

Gateway communicates with its host computer at rates from 110 baud to 19.2K baud. At 19.2K baud a typical 20-character message takes 0.063 seconds.

Easy Installation

Gateway connects to your host computer via a cable to its RS232 port. DMCS Network connections are wired using shielded twinaxial cable. Use Belden 9182 or 89182 or equivalent. Gateway and its power supply can be mounted on a desk top, a panel, or a wall.

The Gateway module assembly can be inserted directly into and draw its power from a 620 LCS I/O rack.

Ordering Information

For more information on this product, contact the nearest Honeywell sales office or

Honeywell Industrial Automation and Control Division
1100 Virginia Drive
Fort Washington, PA 19034

TABLE 1 —Some Communication Transactions Supported by Gateway 500

Class	Operation	UDC 6000	UDC 5000	UDC 3000	DR 4500	DPR 3000	620 LCS	S9000
Data Retrieval	Read process variables	•	•	•	•			•
	Read set point values	•	•	•	•			
	Read output values	•	•	•	•			
	Read control mode	•	•	•	•			•
	Read operating mode	•	•	•	•		•	
	Read recording mode							
	Read alarm status	•	•	•	•	•	•	
	Read tuning constants	•	•	•	•			
	Read configuration parameters	•	•	•	•	•	•	
	Read input type	•	•	•	•			
	Read input unit °F/°C	•	•	•	•			
	Read input range limit	•	•	•	•			
	Read alarm set point value	•	•	•	•			
	Read alarm type	•	•	•	•			
	Read output limits	•	•	•	•			
	Read auto tune/adaptive tune data	•	•	•				
	Read set point ramp/program status	•	•	•	•			
	Read channel values					•		
	Read chart speeds				•			
	Read chart ranges				•			
	Read print group status				•			
	Read scanning sequence status							
	Read time between prints							
	Read time and date				•			
	Read software item and options	•			•			
	Read digital output status						•	
	Read digital input status						•	
	Read data register value						•	
	Read timer accumulator value						•	

TABLE 1 — Some Communication Transactions Supported by Gateway 500

[illegible]

Specifications

Design

LED Indications One for power on, four for communication status, four for diagnostics.

Mounting and Dimensions Unit can be either surface or desk-top mounted. (Refer to Figure 3 for dimensions.) The module assembly can be installed in an 621 I/O rack.

Power Consumption Less than 13 VA

Weight 11.6 Kg (5.25 lbs)

Wiring Connections RS-232C connector to RS-232C Link; removable screw terminals to DMCS Network.

RS-232C Pin Connections	Signal	Pin #
	Protective Ground	1
	Transmit Data	2
	Receive Data	3
	Request-To-Send	4
	Clear-To-Send	5
	Data Set Ready	6
	Signal Ground	7
	Carrier Detect	8

Baud Rates 110, 300, 600, 1200, 2400, 4800, 9600, and 19,200 bits/see (baud)

Code Set American Standard Code for Information Interchange (ASCII) alphanumeric.

Communication Protocol Half-duplex message transmission of ASCII character strings. ASCII characters must be transmitted as 8 bits: 7 data bits and 1 parity bit, used for either odd or even parity. Characters maybe transmitted wit 1, 1-1/2, or 2 stop bits.

DMCS Cable Belden 9182 or 89182, two conductor, 100% shield, 150 ohms #22 AWG.

Operating Conditions

	Reference Conditions	Rated Conditions	Operative Limits	Transportation and Storage
Ambient Temperature	22±3°C 72 ± 5° F	15-40°C 58-104°F	0-60°C 32-140°F	-40 to 66°C -40 to 151°F
Relative Humidity (%)	10-55	10-90	5-90**	5-95**
Vibration				
Frequency (Hz)	0	0 to 70	0 to 200	0 to 200
Acceleration (g)	0	0.1	0.2	0.5
Mechanical Shock				
Acceleration (g)	0	1	5	20
Duration (ms)	0	30	30	30
Voltage (Vac) and Frequency (Hz)	120 ± 10%/60 Hz	108 to 129		
	230 ± 10%/50 Hz	207 to 250		

General Reference Data

Isolation	Transformers in the communication board isolate Gateway from other Honeywell products on the Honeywell Link.
Static Charge	Susceptibility — The exposed panel surface can withstand a discharge through 100 ohms from a 250 pf capacitor charged to 10 KV.
Radio Frequency Interference	Susceptibility — Gateway can withstand an RFI field strength of 20 volts/meter at 27 MHz, 462.2 MHz, and 151.685 MHz.
Approvals	FM and CSA approved

**The maximum rating only applies up to 40°C (104° F). For higher temperatures, RH specification is derated to maintain constant moisture content.

