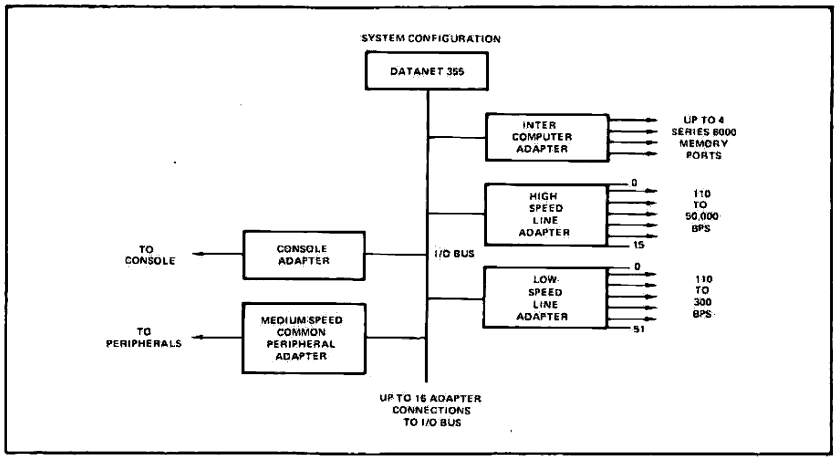
# Honeywell Bull

## SERIES 6000

# DATANET 355 COMMUNICATIONS PROCESSOR




The DATANET[1] 355 is a stored-program communications processor designed to match large-volume communications needs with the Multidimensional Information System, Series 6000.

The DATANET 355 is directly connected to a Series 6000 memory port to permit the transfer of data and control information at main memory speed.

With the DATANET 355, a Series 6000 system has a responsive, centralized information facility providing the capacity to meet high-volume communication requirements.

### CIRCUITRY

The DATANET 355 features total integrated circuit logic construction.

### STORAGE

- Ferrite coincident-current core storage.
- 1-microsecond cycle time.
- Addressable word sizes: 6, 9, 18, or 36 bits.
- Data words of different lengths can be mixed and fully packed in storage.
- Store size is 16K or 32K 18-bit words (1K = 1024 words).

### PROCESSOR

The DATANET 355 is an interrupt-driven stored-program data communications processor. Its 98-instruction set includes:

- Fixed-point arithmetic operations
- Boolean functions
- Shifting
- Comparing
- Data movement

The processor has an 18-bit single-address instruction, 3 index registers, and multilevel indirect addressing.

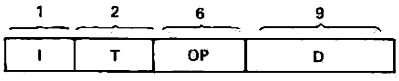
### INPUT/OUTPUT

DATANET 355 input/output is bus oriented and is designed to simplify real-time concurrent servicing of local and remote devices. It can handle up to 16 I/O connections with a total transfer rate of 500,000 words per second (6-, 9-, 18-, or 36-bit length).

Input/output operates independently of the processor and has 16 levels of priority interrupt with 16 sublevels per level, all maskable. It can service a variety of terminals connected to high- and low-speed line adapters.

### GENERAL INSTRUCTION FORMAT

BITS:




I – Indirect Bit (1 bit); if on (=1), effective address is computed from indirect word

T – Tag Field (2 bits), used to specify address modifications using one of three index registers or the instruction counter

OP – Operation Code (6 bits)

D – Displacement Field (9 bits)

### BASIC INSTRUCTION TIMES

| | |
|---|---|
| Transfer | 1 μsec. |
| Load or Store | 2 μsec. |
| Add or Subtract | 2 μsec. |
| Multiply (18 bits by 18 bits) | 7 μsec. |
| Divide (36 bits by 18 bits) | 8 μsec. |

### REGISTERS

| | |
|---|---|
| Address Register | 18 bits |
| Data Buffer Register | 36 bits (from memory) |

| | |
|---|---|
| Operation Code Register | 6 bits |
| Arithmetic Counter | 6 bits |
| AQ Register | 36 bits |
| Instruction Counter | 15 bits |
| Index Register (3) | 18 bits |
| I/O Channel Selector | 6 bits |
| Indicator Register | 8 bits |

## INTERCOMPUTER ADAPTER (ICA)

The ICA provides the link between the input/output bus of the DATANET 355 and from one to four memory ports on the Series 6000 system. The ICA transfers data and control information between the two systems. In normal data transfer activities, the ICA acts as an agent of the DATANET 355 which controls all detailed transactions. The Series 6000 exercises command control over the ICA, and can initiate a program load into the DATANET 355 or interrupt its processing.

The ability of the DATANET 355 through its ICA to respond to the Series 6000 system interrupts enables the DATANET 355 to assume mainframe input/output functions if required.

## HIGH-SPEED LINE ADAPTER

The High-Speed Line Adapter is a multiline communication controller that can have from 1 to 16 channels. One or two High-Speed Line Adapters can be configured per DATANET 355, providing up to 32 low-; medium-; or high-speed data communications lines. Both single-line and dual-line channels are available to service a variety of communications terminals or subsystems intended for remote operation at speeds up to 50,000 bps.

The Adapter can handle both synchronous and asynchronous character-oriented communications, operating at various transmission rates with a variety of bit orders, character sets, message formats, auxiliary signaling techniques, and control procedures. Each line can be used in half-duplex or full-duplex mode, 2- or 4-wire operation. Codes can be 5- or 8-level on the single-line channel and 7- or 8-level on the dual-line channel. Each channel is character-buffered.

Terminal capabilities include the G-100 Series remote batch computers, the 765, 775, 785 VIP terminals, and the teletypewriter offerings noted below.

## LOW-SPEED LINE ADAPTER

The Low-Speed Line Adapter can operate up to 52, 26, or 17 low-speed terminals, operating at speeds of 110, 134.5/150, or 300 bps, respectively. Terminals with different transmission speeds can be mixed on a single LSLA. Terminal type capabilities include Teletype Models 33, 35, and 37; IBM 2741; DATANET 730; and the Termi-Net 300 data communication printer. From one to six Low-Speed Line Adapters can be configured in a single DATANET 355 system. A maximum of 200 terminals is allowed. Code levels: ASCII or IBM 2741 code.

## POWER REQUIREMENTS:

208/120V, 3-phase, 4-wire, 60 Hz, 2.2 KVA

## PROCESSOR PHYSICAL SPECIFICATIONS

| | |
|---|---|
| Weight: | 1,000 lbs. |
| Dimensions: | Height: 76" |
| | Width: 74" |
| | Depth: 28" |

## AIR CONDITIONING

3400 BTU/HOUR; no external air flow is required.

[1]Trademark.