

# 620 series Dataspec.

PRODUCT Digital Output

MODEL 620-830A, 830B

DATE September 1, 1971



varian data machines

## DIGITAL OUTPUT MODULE AND EXPANSION MODULE

### INTRODUCTION

The Model 620-830A Digital Output Module (DOM) and Model 620-830B Digital Output Expansion Module (DOME) are options for use with the Varian Data 620 Series Computers. A DOM provides two 16-bit output registers, one general purpose buffered input and control for up to eight 16-bit outputs and four buffered inputs. A DOME provides incremental expansion of two 16-bit output registers and one buffered input to the DOM.

### GENERAL DESCRIPTION

The DOM and DOME data transfer operation resulting in digital output occurs in two stages: First, the individual register is selected using an Extended External Control (EXC2) instruction; then a 16-bit data word is sent to the selected output register. An EXC2 instruction is also used in selecting the buffered digital input for transfer into the 620 Computer.

Data transfer can be accomplished under program control or under control of the optional Buffer Interlace Controller (BIC). When operating under program control, data transfers are initiated by the computer and are executed under input/output instruction control. When operating with a BIC, data transfers are initiated by the computer and are executed without input/output instruction control. The BIC permits automatic high speed block data transfer between the DOM and the 620 Computer memory without disturbing the sequence of the main program.

One DOM and three DOMEs provide eight 16-bit digital outputs and four buffered digital inputs per device address and up to eight device addresses are available. A maximum of sixty-four 16-bit digital outputs and thirty-two buffered digital inputs can be configured in a single computer system, with eight DOMs and twenty-four DOMEs.

### SOFTWARE

A comprehensive software package comprising a Test Program and I/O driver program is provided. The Test Program provides an effective tool in determining the operational status of the DOM and DOME. The I/O Driver Program provides convenient access to the DOMs and DOMEs without detailed knowledge of the hardware. The program can be used by itself or embedded in an operating system. The I/O Driver Program contains two routines: Programmed Data Transfers and Direct Memory Access Data Transfers.

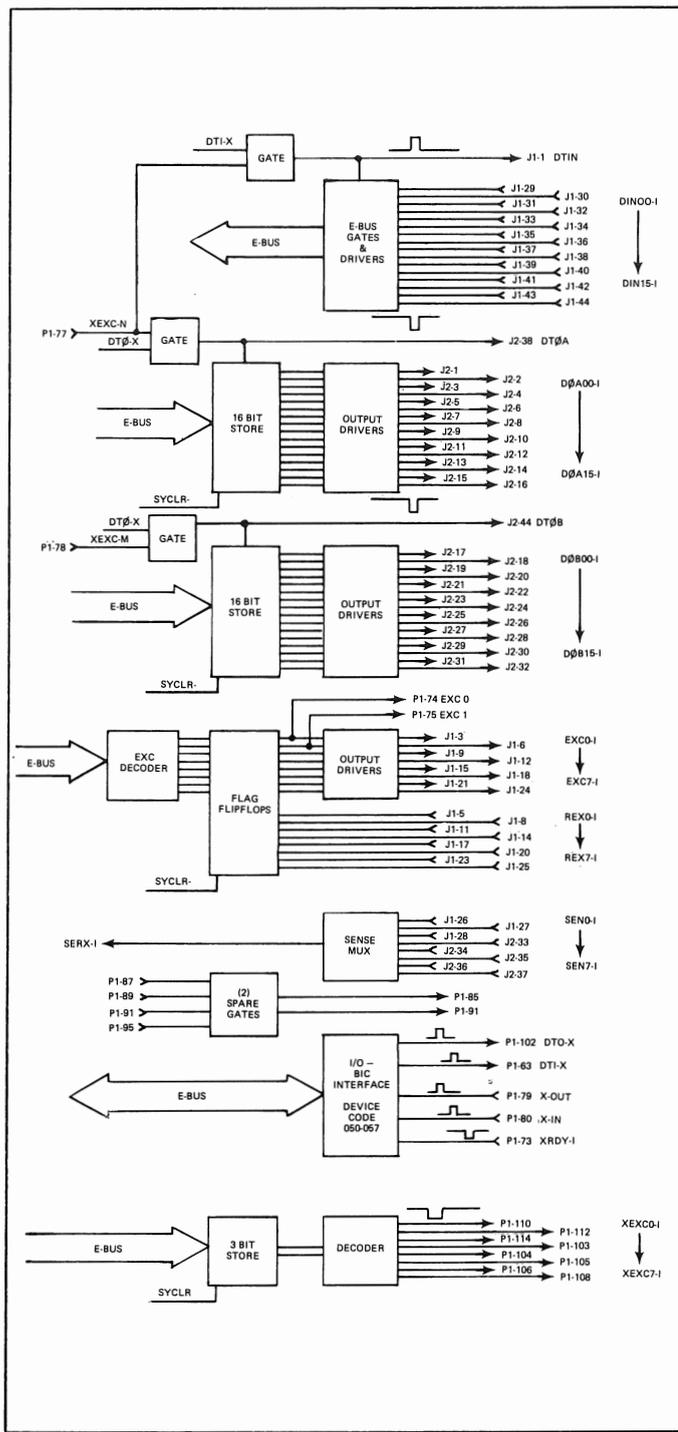
### PREREQUISITES

#### For DOM Module:

- 620 System Computer
- 620 Expansion chassis (requirements determined on individual system basis)
- 620-95-5 power supply assembly or 620-88 analog power supply (requirements determined on individual system basis)
- 620 peripheral Backplane wiring panel (requirements determined on individual system basis)
- 620-20 Buffer Interlace Controller (BIC) (optional)

#### For DOME Module:

- DOM Module
- 620 Expansion Chassis (requirements determined on individual system basis)
- 620-95-5 Power Supply Assembly or 620-88 Analog Power Supply (requirements determined on individual system basis)
- 620 Peripheral Backplane Wiring Panel (requirements determined on individual system basis)



## SPECIFICATIONS

- Digital Outputs** ..... Number: two 16-bit registers  
 Type: Open collector transistor with 5.6 K ohms to +5 Vdc. Sinks current when true. Capable of sinking 300 mA and will stand off +30 Vdc. Load pulses (DTOA and DTOB) are externally available. These pulses are 200 nanoseconds in duration, low true. Available fanout: 30 logic loads. Maximum load capacitance: 100 pF.
- Digital Input** ..... Number: One buffered  
 Type: 1 logic load, with 5.6K ohms to +5Vdc. Low true. Enable Gate (DTIN) is externally available. This signal is 1.9 micro-seconds in duration, low true. Available fanout: 16 logic loads. Maximum load capacitance: 1000 pF. This signal is true when input data is gated on to the computer E-Bus.
- Digital Control Outputs** ..... Number: Eight  
 Type: Open collector transistor with 5.6K ohms to +5 Vdc. Sinks current when true. Capable of sinking 300 mA and will stand off +30 Vdc. Each EXC sets an R-S type flip-flop, which results in a dc logic low true output. Each flip-flop has an externally available reset input, 1 logic load, 5.6K ohms to +5Vdc. Reset input may be grounded for pulse operation or may be connected to an EXC for computer control of reset.
- Digital Sense Inputs** ..... Number: Eight  
 Type: 1 logic load, 5.6K ohms to +5Vdc. Low true.
- Spare Gates** ..... Number: Two  
 Type: NOR gates are provided to facilitate special additional logic requirements.
- Power** ..... +5Vdc  $\pm$ 1%, 1A
- Temperature Range** ..... Specification: 0°C to 50°C  
 Operating: -10°C to 70°C  
 Storage: -55°C to 85°C
- Physical Characteristics** ..... Dimensions: One printed circuit board 7¼ x 12 x ½ inches  
 Connectors: One 122-terminal card edge connector  
 Two 44-terminal card edge connectors.



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