32-bit UNIX computer system

■ DS90-30S

DS90-30S is a UNIX-based mini-computer with a hardware and software versatility that makes it suitable for most office environments and applications.

The computer is designed for administrative applications including inventory and office automation systems.

Thanks to a flexible design, the system offers great expansion potential.

o **M68030 processor**

o **16 MHz clock**

o **2 to 8 MByte primary memory**

o **advanced expansion possibilities in the form of mass storage and backup units.**

Open system architecture

DS90-30S is based on an open architecture, which means that it can easily be customized to suit a specific task. The open architecture allows simple expansion at the same pace as a company's growing needs, or when further development of the hardware provides new possibilities to increase the capacity.

The system can be further expanded with additional units placed next to the computer.

Thanks to the expansion possibilities with VME and DataBoard and the computer's communication support, the DS90-30S is also well-suited for industrial systems such as process control and data acquisition.

A large number of program development tools and complete packages are available as a result of the standardized UNIX included in the DS90-30S. These include database handlers, office automation and communication packages, all available to provide the end user with a well-integrated and functional environment.

Speed and performance

The computer's basic unit including the CPU and primary memory is built on one single circuit board, providing for short, fast signal paths, greatly contributing to the computer's total performance.

The heart of the DS90-30S consists of one Motorola 68030, a 32/32-bit processor with an optional floating point co-processor.

DS90-30S has 2 - 8 MByte primary memory and the system utilizes virtual memory handling. The virtual memory can handle up to 2 Gbytes per process.

Expansion up to 4 MByte can be

directly on the CPU card while memory expansion from 4 to 8 MByte requires an add-on memory card.

Mass memory with high capacity

The computer can be expanded with mass memory units with a capacity from 150 MByte to 600 MByte.

DS90-30S has two SCSI interface internal peripheral buses (one being optional) for connecting mass memory units and streamers.

A number of different units for rapid backup are available for the DS90-30S provided with the SCSI option, for example, a special streamer with an extremely large capacity (2 GBytes) or an optical disk drive with removable disks.

The diskette drive is for 5 1/4" diskettes and can read and write to a number of different formats. Files in IBM/PC and AT format can be read and written to with a file handler for MS-DOS.

A 60 MByte streamer is included for backup purposes.

Terminals and printers

Optionally, the DS90-30S can be equipped with one VME and one DataBoard 4680 bus for connection of external terminals, printers, networks and communication.

Peripherals may also be connected via the on-board Ethernet or Thin-wire Ethernet port located on the CPU card provided the Ethernet option has been installed.

Sturdy construction

The computer has a metal housing. The system's status is shown by a number of indicators on the computer's angled front, which also carries all controls necessary for daily use.

The computer is designed for simple, inexpensive maintenance. For instance, side covers can be removed without tools and the entire computer framework then swings out for easy access.

The D-NIX operating system

The DS90-30S works with the D-NIX operating system.

D-NIX complies with the UNIX System V Interface Definition (SVID) and POSIX 1003.1 specifications and is validated in accordance with SVVS (System V Validation Suite). In addition, the operating system includes the real-time functions needed in demanding administrative and technical applications. D-NIX also optimizes all resource distribution in the system. For example, all accesses to the mass memory are sorted so that data can be accessed as quickly as possible.

The operating system works with a very small kernel, and only the kernel resides permanently in the memory, making effective use of the memory. Together with D-NIX' priority system,

Dimensions
(mm)

555

600

205
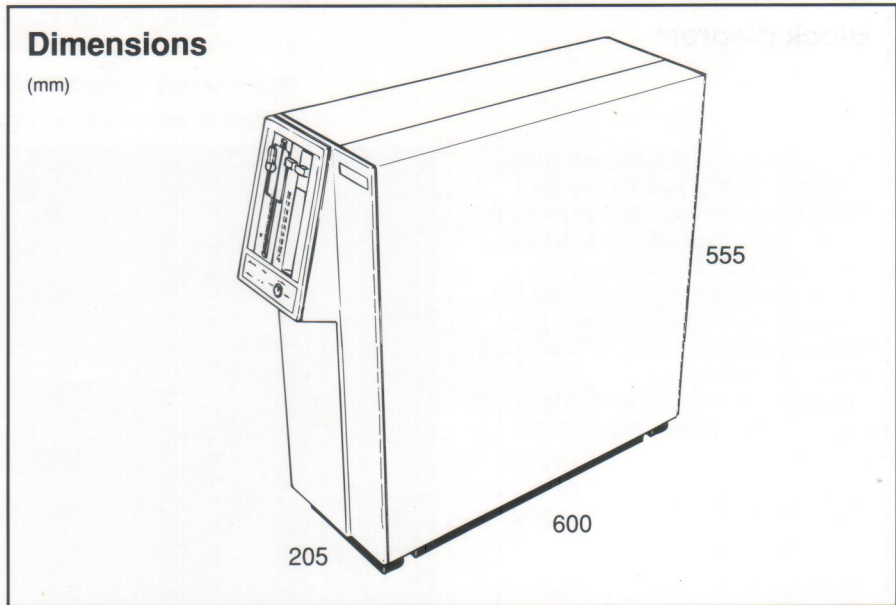
this provides rapid management of external events. The short response times are one of the reasons the DS90-30S is well suited for communication, data acquisition and office automation.

Communication

Thanks to the computer's and operating system's real-time performance, the DS90-30S is suited for direct communication with other computers. Local and global networks, and asynchronous and synchronous communication protocols are supported by the computer and software.

For communication, the DS90-30S utilizes a technique in which protocol conversion is handled by special processors, freeing the main processor from communication tasks, with the result that the system remains fast and accessible.

However, Ethernet support can be installed directly on the CPU card.

A complete development environment

AT&T System V development tools allow the programmer to produce effective applications that can easily be maintained with the routines included in D-NIX.
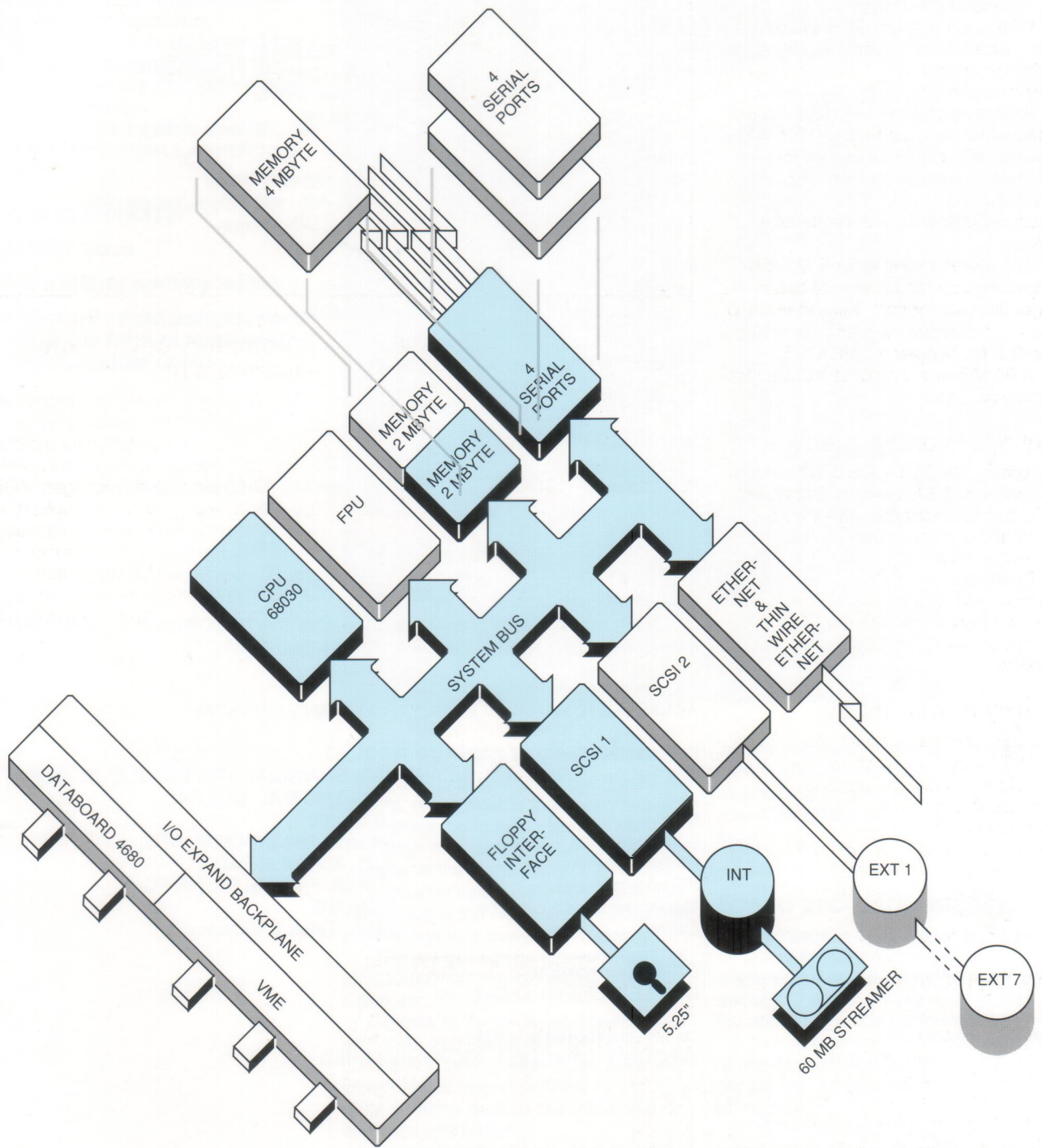
Fourth generation languages (4GL) are often used to make the applications more powerful and easier to maintain.

DS90-30S is also an exceptional system for program development. The D-NIX operating system provides the base for a large number of development utilities, as well as conventional programming languages and 4GL tools.

Easy access to expansion slots and connector panels

Block diagram

4 SERIAL PORTS

MEMORY 4 MBYTE

4 SERIAL PORTS

MEMORY 2 MBYTE

MEMORY 2 MBYTE

FPU

CPU 68030

SYSTEM BUS

ETHER-NET & THIN WIRE ETHER-NET

SCSI 2

SCSI 1

FLOPPY INTER-FACE

DATABOARD 4680

I/O EXP AND BACKPLANE

VME

5.25"

INT

60 MB STREAMER

EXT 1

EXT 7

Standard modules

Installation requirements

See the dimensions diagram on the inside of the brochure. Make sure there is room around the computer for service and maintenance needs. Requirements regarding the environment, power, etc. are included in the technical data.

Ordering information

The DS90-30S can be tailored to fit a customer's needs in terms of performance and capacity.

Diab Data has prepared a special guide called "DS90-30S - Configuration" as an aid in configuring the system. This guide also includes ordering information for all basic and expansion units.

Technical data

Computer hardware

CPU and primary memory

Processor	Motorola 68030
Co-processor	Motorola 68881 floating point unit (optional)
Clock frequency	16 MHz
Primary memory	2 -8 MByte

Mass memory

Diskette drive	5.25", 720 kByte/1.2 MByte
Disk channels	2 SCSI channels (1 optional)
Disk, SCSI	110 - 600 MByte
Backup, SCSI	150 MByte

External mass memory (optional)

Disks, SCSI	DU90, 150-600 MByte
	WU90, 400+400 MByte (optical disk)
Backup, SCSI	BU90, 2 GByte tape

Ports

Standard	4 RS232
Total number of ports	42 RS232

VME/DataBoard expansion (optional)

VME	3
DataBoard	2

Miscellaneous

Operating temperature	10-35°C
Power supply	115/230VAC, 47-63 Hz, 250 W
Fan cooling with low noise fans	

Software

Operating system

D-NIX operating system kernel fully compatible with UNIX System V. Utilities and development package are licensed products from AT&T.

Programming languages

ASSEMBLER, BASIC, C, COBOL, FORTRAN 77, PASCAL

Communication

IBM	3270 SNA/SDLC, 3770 SNA/RJE, 3270 API
	2780/3780 RJE, 3270 BSC
UNISYS	UTS-4000
Local networks	Ethernet 802.3 (TCP/IP, NFS)
Global networks	X.21, X.25, X.25PAD
PC communication	TCP/IP, PC-NFS, D-LINE/PC
Macintosh communication	D-SHARE
Other	Telex, Teletex, Videotex

Office information

UNIPLEX, LEX-68, Q-Calc, etc.

Development tools - 4GL

INFORMIX, ORACLE, PROGRESS, MIMER