

Nixdorf 8850 Series

MANAGEMENT SUMMARY

The Nixdorf 8850 Series of distributed data processing systems consists of five models: the 8850 Micro 5, 8850/50, 8850/55, 8850/65, and 8850/75. The series is designed to offer both communications facilities and operating features needed for business-oriented data processing in a decentralized environment.

The original 8850 Series was launched in 1978, being based on the earlier Nixdorf 620 Series of data entry systems but with an enhanced operating system. The 620 models were upwards compatible with the 8850 Series. The current five 8850 models were introduced at a later stage during 1983/4. A version of the 8850 Series is marketed in the USA as the Nixdorf 600 Series, but this differs in the models offered.

Each system in the 8850 Series can perform data entry, local file processing, local data base inquiry and updating, and batch and interactive communications. An 8850 system can also communicate with a local or remote Nixdorf 8840 word processing system.

Nixdorf Computer AG designs and manufactures mainframes, minicomputers including fault-tolerant systems, microcomputers, office systems, banking terminals, and data communications equipment. In 1983, Nixdorf total revenue increased by 19 percent to DM 2.700 million, of which West Germany provided 49 percent and international markets accounted for 51 percent. Nixdorf employs approximately 18,600 people in Germany and internationally in forty subsidiary companies. The subsidiaries operate independently in that each has its own marketing strategy, and provides customer support and training.

Each 8850 model has 128KB of main memory and can support a full range of peripheral devices. The Micro 5 desktop system differs from the other models in the series



The 8850/50 configuration shown is based on one of five 8850 models available, and can support up to 32 workstations, one 16MB fixed disk, and four diskettes.

The Nixdorf 8850 Series is a distributed data processing system offering both communications using IBM or Siemens protocols, and local data processing capabilities. There are currently five models in the series, and hardware and software compatibility is maintained throughout.

MODELS: 8850 Micro 5, 8850/50, 8850/55, 8850/65, and 8850/75.

CONFIGURATION: The 8850 Series can support up to 32 workstations and printers, one system printer, four diskette units, 528MB of fixed disk storage, and four magnetic tape units.

COMPETITION: IBM 5280, IBM System/36, Datapoint 8600, ICL DRS 20, Harris 1600, MDS Series 21, and Microdata Series 8000.

PRICING: The purchase price of a typical low-end configuration based on the 8850 Micro 5 is DM 19.500, while prices for the larger 8850/50 systems start at DM 38.410.

CHARACTERISTICS

MANUFACTURER: Nixdorf Computer AG, Fürstenallee 7, 4790 Paderborn, West Germany. Telephone (05251) 3010.

COMPANY LOCATIONS: *Australia:* Nixdorf Computer Pty. Ltd., 655 Pacific Highway, P.O. Box 235, St. Leonards N. S.W. 2065. Telephone (02) 439 5477. *Austria:* Nixdorf Computer GmbH, Untere Donaust. 11, 1020 Vienna. Telephone (0222) 266767. *Belgium:* Nixdorf Computer SA, Rue Colonel Bourg 105, 1040 Brussels. Telephone (02) 735 8050. *Canada:* Nixdorf Computer Canada Ltd., 505 Consumers Rd., Suite 102, Willowdale, Ontario M2J 4V8. Telephone (416) 498 7200. *Denmark:* Nixdorf Computer A/S, Hoerkaer 20, DK-2730 Herlev. Telephone (02) 919810. *Eire:* Nixdorf Computer Ltd., Fitzwilliam Court, Leeson Close, Dublin 2. Telephone (01) 767551. *Finland:* Oy Nixdorf Computer AB, Höyläämötie 11, 00380 Helsinki 38. Telephone (0) 558072. *France:* Nixdorf Computer SA, 7-13 Bd. de Courbevoie, 92200 Neuilly-sur-Seine. Telephone (01) 747 1270. *Greece:* Nixdorf Computer AE, Leof-Sygrou + Skra 1, Athen-Kallithea. Telephone (01) 959 5190. *Hong Kong:* Nixdorf Computer Ltd., Unit A, 9th Floor United Centre, 95 Queensway, Central, Hong Kong. Telephone (05) 202222. *Italy:* Nixdorf Computer S.p.A., Via Piranesi 46, 20137 Milan. Telephone (02) 73961. *Japan:* Nixdorf Computer Japan, 5-23, Higashi-Gotanda 5-Chome, Shinagawa-Ku, Tokyo 141. Telephone (03) 443 0504. *Luxembourg:* Nixdorf Computer SA, 107-111 route d'Arlon, 8009 Strassen. Telephone 312828. *Morocco:* Nixdorf Computer SA, 23 Bd. Girardot, Casablanca. Telephone 307639. *Netherlands:* Nixdorf Computer b.v., Postbus 29, Mijlweg 7-9, 4130 EA Vianen. Telephone (0347) 372904. *Norway:* Nixdorf Computer A/S, Postbox 59 Lilleaker, Lilleakerveien 25, Oslo 2. Telephone (02) 553190. *Singapore:* Nixdorf Computer Pte. Ltd., 100-c

Nixdorf 8850 Series

➤ in being able to support only four workstations: the others can support a maximum of thirty-two, although a typical system will include between eight and ten workstations. The major variations between Models /50, /55, /65, and /75 concern primary and backup storage. The /50 and /55 models each have one 8-inch fixed disk for primary storage, the /65 uses one or two 14-inch fixed disks, and the Model/75 includes two or four 14-inch fixed disks, giving up to 528M bytes of storage, and optionally providing redundancy. The Models /50 and /55 each contain one diskette in the basic configuration, and can optionally support a further three diskettes. Four diskettes are optionally available with the /65 and /75. Further backup storage is supplied by a streaming tape cassette on all models except the Micro 5, and additionally by up to four magnetic tape units on Models /55, /65 and /75.

The display terminal used with all models in the 8850 Series can function as a local or remote workstation. It features a 1920-character display and a keypunch, typewriter, banking, or 3270-style keyboard. An optional workstation with a 480-character screen is available. A wide choice of printers can be connected to the 8850, including daisy-wheel, matrix, line, band, and ink-jet models. Speeds range from 17 characters per second to 600 lines per minute. Each workstation can support one printer, and all models with the exception of the Micro 5 can additionally support a system printer.

The 8850 runs under the multitasking DIDOS 2 operating system which can support 32 concurrent users. Nixdorf provides optional software packages which cover accounting and administrative applications. There is full software compatibility between the 8850 models.

COMPETITIVE POSITION

The Nixdorf 8850 Series is marketed as a distributed data processing system. It competes with the IBM 5280, Data-point 8600, Harris 1600, and ICL DRS 20. Nixdorf also considers that the native German market contains a number of competitive minicomputers including the Siemens 6.000, Kienzle 9000 and Honeywell Bull System 6.

ADVANTAGES AND RESTRICTIONS

An advantage of the 8850 Series is that it can be connected to the Nixdorf 8840 word processing system which will aid users in many applications. Nixdorf has also provided an operating system which users with little technical knowledge can operate.

One possible disadvantage of the series is that it may prove constricting to a larger user who might require more growth from the system. The 8850 limits the user to a maximum of 32 workstations and 528MB of fixed disk storage.

USER REACTION

The 1984 Datapro Survey of German Users of Computer Systems brought responses from five Nixdorf 8850 users ➤

➤ Pasir Panjang Rd., Singapore 0511. Telephone 4791100. *South Africa:* Nixdorf Computer Pte. Ltd., Triompf House, Stanley Av., Milpark, P.O. Box 7911, Johannesburg 2092. Telephone (011) 7268 6000. *Spain:* Nixdorf Computer SA, Capitán Haya 38, Madrid 20. Telephone (01) 279 7808. *Sweden:* Nixdorf Computer AB, Dalvägen 22, S-17136 Solna. Telephone (08) 730 0600. *Switzerland:* Nixdorf Computer AG, Obstgartenstr. 25, 8302 Kloten. Telephone (01) 814 3434. *United Kingdom:* Nixdorf Computer Ltd., 125-135 Staines Rd., Hounslow, Middlesex TW3 1JB. Telephone (01) 570 1888. *USA:* Nixdorf Computer Corporation, 168 Middlesex Turnpike, Burlington, MA 01803. Telephone (617) 273 0480.

DISTRIBUTORS: Nixdorf is represented by agencies in the following countries: Argentina, Brazil, Egypt, Israel, Korea, New Zealand, Peru, Portugal, Sri Lanka, Thailand, Turkey, Venezuela, Yugoslavia, and Zimbabwe.

MODELS: 8850 Micro 5, 8850/50, 8850/55, 8850/65, 8850/75.

DATE ANNOUNCED: Micro 5: April 1984; /50, /55, /65, /75: April 1983.

DATE OF FIRST DELIVERY: Micro 5: 4th quarter 1984 (scheduled); /50, /55, /65, /75: 2nd quarter 1984.

NUMBER INSTALLED TO DATE: Over 12,000.

SERVICED BY: Nixdorf.

CONFIGURATION

The Nixdorf 8850 Series comprises five models: the Micro 5, 8850/50, 8850/55, 8850/65, and 8850/75. All models use a central system unit which includes a 16-bit microprocessor with 128KB of main memory, and fixed disk, diskette or tape cassette storage. Workstations and printers can be connected to all models in the series, with the exception of the system printers which cannot be supported by the Micro 5.

The basic 8850 Micro 5 comprises one 5MB fixed disk, one diskette in either 8850 or IBM 3740 format, and one workstation. The fixed disk can be replaced by one with 10MB capacity, and a total of four workstations can be connected into the system. Each workstation can support one printer. The central unit of the Micro 5 measures 14 by 45 by 44 cm³ (height by width by depth) and weighs 8 kg.

The 8850/50 in its basic configuration contains one fixed disk with a capacity of 10MB which can be replaced by one with 16MB capacity, one diskette in either 8850 or IBM 3740 format, a streaming tape cassette, and one workstation. Three more diskettes can be added to the system. Up to 32 workstations can be connected to the Model /50, and each workstation can support a printer. One system printer can additionally be attached. The central unit of the /50 measures 72 by 60 by 50 cm³ and weighs 100 kg.

The 8850/55 differs from the Model /50 in mass storage capacity. The basic Model /55 has one 10MB fixed disk, but this can be replaced by one with a capacity of up to 32MB. The /55 can also support from one to four magnetic tape units, one of which is necessary in all configurations. Streaming tape cassette and diskette storage, and workstation and printer connection, are as for the /50. The /55 central unit measures 106 by 60 by 90 cm³ and weighs 210 kg.

The basic 8850/65 includes one 33MB fixed disk, one magnetic tape unit, and one workstation. Expansion possibilities include increasing disk capacity to 264MB on two fixed disks; the addition of a further three magnetic tape ➤

Nixdorf 8850 Series

➤ with a total of six system installations. The average life of the system was five years and four months. (The survey results therefore also include a period of the Nixdorf 620 models). Twenty-five percent of the systems were purchased and the remaining seventy-five percent were hired from Nixdorf. Applications areas included order processing/inventory control, accounting/billing, payroll/personnel, process control, and purchasing.

To the question "Did the system do what you expected it to do", all five users replied yes. When asked if they would recommend the system to another user, four users said yes, and one said no. None were undecided.

Users were asked to evaluate the different aspects of their systems under the headings Excellent, Good, Fair, and Poor. The weighted average obtained is based on a scale of 4.0 for Excellent. The system ratings are summarized in the following table. □

	<u>Weighted Average</u>
Ease of Operation	3.60
Reliability of Mainframe	3.20
Reliability of Peripherals	3.00
Maintenance Service	
Responsiveness	3.00
Effectiveness	3.00
Technical Support	
Troubleshooting	2.40
Education	2.80
Documentation	2.20
Manufacturer's Software	
Operating System	2.60
Compilers & Assemblers	2.75
Applications Programs	2.67
Ease of Programming	3.40
Ease of Conversion	2.67
Overall Satisfaction	2.80 □

➤ units and one streaming tape cassette; the addition of two IBM 3740-format diskettes and two 8850-format diskettes, increasing the number of workstations to 32; and the addition of a system printer. Each workstation can support one printer. The Model /65 is contained in a central unit which measures 160 by 120 by 90 cm³ and weighs 380 kg.

The 8850/75 in its basic configuration comprises two 132MB fixed disks (one for primary storage and the other for backup), one magnetic tape unit, and one workstation. Mass storage can be increased to 528MB with two additional 132MB disks. Further expansion possibilities include a further three magnetic tape units, one streaming tape cassette and four diskettes, two in each format. Workstation and printer connection is as for the Model /50. The /75 is housed in two cabinets, each measuring 106 by 60 by 90 cm³. Total weight is 460 kg.

COMPONENTS

CENTRAL PROCESSING UNIT: The CPU is based on a Fairchild 16-bit microprocessor, and contains 128KB of CMOS memory with a 375-nanosecond cycle time. A standard emergency power supply provides five hours of backup power for the Micro 5, and ten hours for the other models.

DISPLAY TERMINALS: The standard terminal consists of a 1920-character display with 24 lines of 80 characters, each generated in a 7-by-9 dot matrix. The 12-inch screen has scrolling capability, and displays amber characters on a brown background; black characters on a white background and the inverse are optional. A tilt/swivel screen is available. A terminal can be locally connected up to 1500 meters from the central unit, or at any distance if connected remotely.

An optional display terminal with 480 characters is available. The screen displays 12 lines of 40 characters and also has scrolling capability.

KEYBOARDS: There are four types of keyboards, any of which can be attached to the display terminal.

Typewriter: with 49 alphanumeric keys, 20 function keys, and a numeric keypad.

Banking: similar to typewriter keyboard, but additionally contains decimal zero keys.

3270: similar to typewriter keyboard, but additionally contains 24 programmable function keys and 6 designated function keys.

Keypunch: with 38 alphanumeric keys and 19 function keys.

WORKSTATION PRINTERS: Nine models of workstation printer are available, each of which can be sited up to 30 meters from the workstation.

Models TD03 and TD04 are daisywheel printers with 132 print positions, and printing at 17 or 36 characters per second respectively. A single-sheet feeder is optionally available.

The Model MD02 is an ink-jet printer with a speed of 210 characters per second, and 132 print positions.

Models ND03 and ND04 are compact matrix printers with maximum print speed of 100 characters per second, and an 80- or 132-character line respectively.

The Model ND11 is a 9-by-9 dot matrix printer which prints up to 132 positions at a speed of 150 characters per second, and has a 128-character set.

The Model ND13 mini-compact matrix printer has a maximum print speed of 80 characters per second, and prints 80 characters per line.

The Model ND10 journal/document printer has a speed of 100 characters per second. It has two print heads, the journal head providing 63 or 80 print positions, and the document head 80 print positions.

The Model ND14 forms/document printer is similar to the ND10 journal/document printer, but additionally includes a continuous forms feeder.

OTHER WORKSTATION PERIPHERALS: The following peripheral units can also be connected to a workstation: bar code reader for EAN code; ID card unit; OCR-A/B wand reader; swipe card reader, general interface unit.

DISK DRIVES: Fixed disk drives with six different capacities are provided, and included according to 8850 model as described under Configuration above. The disk capacities are 5M, 10M, 16M, 32M, 33M, and 132MB.

The 5MB drive provides storage on one 5¼-inch disk. Average access time is 93 ms and the data transfer rate is 542KB per second. ➤

Nixdorf 8850 Series

► The 10MB and 16MB drives each provide storage on one 8-inch disk. For both drives, average access time is 65 ms and the data transfer rate is 543KB per second.

The 32MB drive uses one 8-inch disk. Average access time is 75 ms and the data transfer rate is 543KB per second.

The 33MB drive uses one 14-inch disk. Average access time is 38 ms and the data transfer rate is 1.2MB per second.

The 132MB drive provides storage on one 14-inch disk. Average access time is 37 ms and the data transfer rate is 1.02MB per second.

DISKETTE DRIVES: These are available in 8-inch and 5¼-inch versions.

The 8-inch drive uses a single- or double-sided, single-density diskette with a capacity of 308/600KB. Average access time is 470 ms and the data transfer rate is 310KB per second. This drive is available in either the 8850 or IBM 3740 format.

The 5¼-inch drive uses a double-sided, double-density diskette with a capacity of 512KB. Average access time is 174 ms and the data transfer rate is 310KB per second. This drive is available in either the 8850 or IBM 3740 format.

MAGNETIC TAPE UNITS: These are used for backup storage. Three models are available, and can be mixed in the same system. One has 800 bpi density with a transfer rate of 20KB per second, and the other two use 1600 bpi with a transfer rate of 40KB or 160KB per second respectively.

STREAMING TAPE CASSETTE: This is also used for backup storage. The recording speed is 90KB per second and the capacity is 20MB.

SYSTEM PRINTERS: These models of system printer are available.

The Model ND04 line printer has a 96-character set and prints 132 characters per line at a speed of 220 or 440 lines per minute.

The Model ND11 workstation printer described above can also be used as a system printer.

The Model ZD04 band printer uses 64 uppercase characters, and prints 132 characters per line at a speed of 300 or 600 lines per minute.

COMMUNICATIONS

Two communications processors in the central unit manage communications control. All 8850 models have two lines which can be used for dedicated or dial-up communications. Protocols supported include IBM BSC 3271, 3275, SDLC

3274, 3277, 3278, 3279, 3284, and Siemens MSV 1. Batch facilities include IBM RJE, 2780, 3740, 3780, 3770 SNA, and Siemens MSV 2.

The 8850 can connect into circuit- and packet-switched networks including Datex-L and Datex-P of the German PTT, X.25, and Teletex. The 8850 Series can communicate either locally or remotely with a Nixdorf 8840 Word Processing System using TECOM (Text Communication). Communication between the two systems is concurrent with other system functions.

SOFTWARE

The 8850 Series runs under NIXOS-DIDOS 2 (Distributed Data Processing Operating System). DIDOS 2 is a reentrant, interactive, menu-driven system. Its file management facilities are database-oriented and enable the nontechnical user to program the system. Fault-testing routines and an automatic restart mechanism are contained within DIDOS.

Nixdorf provides software packages covering stock control, accounting, and administrative applications. The financial package includes accounting, payroll, and cost planning. Nixdorf also writes software packages to suit individual company requirements.

SERVICE/SUPPORT

The basic maintenance contract offers software support in normal office hours i.e. 8 a.m. to 5 p.m., and 24-hour hardware support. After installation, Nixdorf will provide support and advice concerning new applications, optimization of solutions, and upgrading possibilities.

The basic maintenance contract offers software support in normal office hours i.e., 8 a.m. to 5 p.m., and 24-hour hardware support. After installation, Nixdorf will provide support and advice concerning new applications, optimization of solutions, and upgrading possibilities.

PRICING

	Purchase Price (DM)
8850 Micro 5 with 128KB main memory, 5MB fixed disk, one diskette, one comma controller, and one workstation with keyboard.	19.500
8850/50 with 128KB main memory, 10MB fixed disk, one streaming tape cassette, one diskette, and one workstation with keyboard.	38.410