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INDUSTRIAL DATA-PROCESSING MODULES

P 800 CATALOGUE

Industrial &
Electro-acoustic Systems

PHILIPS

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Preface

With this catalogue, which is a copy of the catalogue distributed by Philips Data Systems, we like to inform you what is available in the P800 family.

In chapters 1 through 7 all hardware items are listed with as many characteristics as are necessary to configure systems. These items are divided in two "classes": A and B.
Items in class A have to be considered as regular. In general, for these items, pricing can be considered competitive and leadtimes vary between 1 and 3 months.

Items in class B are items for which the production became relatively small, and therefor regular production is no longer justified. Orders received before January, 1st, May, 1st or September, 1st will result in a production batch which will be delivered with an average leadtime of six months from the relevant date.

In some cases the class A or B is extended with an asterix *. An item in class A* will move to class B or B* one year after the date the present catalogue has become valid; an item in class B* will be removed from the catalogue after one year.

Also the class X can occur. Items in this class are new items, which have not yet been officially announced. Via the IDP Bulletin we will inform you about the availability.

Finally you can find in the class column the indication S&I. This means that the same item, with some modifications is also included in the S&I catalogue as a PC-number.

For most items it is indicated in which systems they can be used. Under "Applicable system" 1 stands for P851 or P871, 4 stands for P854 or P874, 6 stands for P876, 7 stands for P857 and 9 stands for P859.

The general form of hardware typenumbers is "P8xx-yyy/zz". The group "P8xx" indicates the type of product, e.g. the typenumber of all items related to floppy discs starts with "P830". The group "-yyy" always occurs and is a further definition of the item. The group "/zz" is not always used. When used it defines variations of the same hardware item to define it unambiguously.

P800 equipment is delivered for 220V-50Hz mains connection, unless otherwise specified.

P800 software is divided in four classes. Class 1 contains standard software products. For these products PDS accepts obligations with regard to delivery, maintenance and support.

- Class 1 is divided in two subclasses: class 1a containing current products for which active and passive maintenance is provided and class 1b containing frozen products for which only urgently required passive maintenance is provided.
- Class 2 contains special software products for which PDS accepts only responsibilities as specified in the product announcement.
- Class 3 contains discontinued software products, which means obsolete products from classes 1 and 2. These products are in general not delivered to end-users. PDS accepts no responsibilities with regard to maintenance and support.
- Class 4 contains user programs. On request PDS provides a list of these programs. PDS does not distribute these programs and does not accept any obligations.

Those items with the typenumber underlined are items which have been checked by S&I and which are subsequently guaranteed for use in industrial applications.

Although this catalogue has been prepared and reviewed with utmost care in order to avoid errors, ambiguities and misunderstandings it will probably show, that this goal has not been reached completely. Your comments and remarks aimed at improvement of this catalogue will be appreciated.

Chapter 1. P800 Basic Systems

CPU characteristics

In the P800-series several CPU's are known. A CPU forms usually part of a basic system and can not be delivered separately, unless special agreements concerning price and delivery-conditions have been agreed upon.

In the table below the most important characteristics of the CPU's are summarized to facilitate comparison.

	P851	P854	P857	P859	P870	P871	P874	P876
P800 standard instruction set	x	x	x	x	x	x	x	x
move instructions, extended addressing instructions		x	x	x		x	x	x
bit-handling instructions		x		x	x	x	x	x
string-handling instructions		x		x		x	x	x
interface for floating point processor (FPP)		x	x	x			x	x
8 kbytes of cache memory								x
logical addressing for up to 32k 16-bits words	x	x	x	x	x	x	x	x
physical addressing for up to 128k 16-bits words			x					
physical addressing for up to 512k 16-bits words		x		x		x	x	
physical addressing for up to 8M 16-bits words								x
number of interrupt lines	16	28	8	5	12	12	28	28
number of binary encoded interrupts	-	-	63	61	-	-	-	-
number of serial encoded interrupts	-	60	-	-	61	61	60	60
integrated I/O processor with 15 subchannels *)		x		x			x	
memory management unit allowing addressing beyond 32k, dynamic relocation and memory protection		x	x	x		x	x	x
direct access (read/write) for up to 256 external registers	x		x					x
direct access (read/write) for up to 240 external registers					x	x		
direct access (read/write) for up to 224 external registers		x		x			x	
integrated V24 serial interface		x	x	x	x		x	
general purpose initial program loader	x	x	x	x		x	x	x
power failure/automatic restart	x	x	x	x	x	x	x	x
real time clock, line frequency	x	x	x	x	x	x	x	x
DMA facility	x	x	x	x	x	x	x	x
serial interface for control panel		x		x		x	x	x
parallel interface for control panel			x					
16 hardware registers, 14 of which are programmable	x	x	x	x	x	x	x	x
general purpose bus, simplified (GPBS)	x							
general purpose bus (GPB)			x					
general purpose bus, extended addressing				x				
general purpose bus, unified (UPL)		x			x	x	x	x
microdiagnostic facility	x	x	x	x		x	x	x
double Euro card format (160 x 233.4 mm)	x	x			x	x	x	x
Belier card format (420 x 350 mm)			x	x				
number of cards	1	3	2	1	1	1	3	5

*) break level 0 is used for FPP

Basic systems

In the P800-series "Basic Systems" have been defined. A basic system consists of :
- a mounting box (rack) with a certain number of slots
- an integrated power supply unit
- a control panel and/or control panel interface
- a CPU-card or -cardset.

The basic systems as described below do not contain any memory, except for P870-256 and P870-356. However, for reasons of system-responsibility no systems without memory can be delivered, unless a special arrangement with the customer has been made. In some cases a basic system is equipped with a battery pack and logic for power supply during power failure and with a filter option. A mounting gear for standard 19" cabinets is supplied with all basic systems.

The characteristics of the P800 basis systems are given in three tables.
Table 1 contains the typenumbers to be used for ordering and a short description. If apart from the typenumbers any models are mentioned only these models can be ordered.
Table 2 indicates which racks, resp. boxes and which CPU-cards, both described with their technical names, are comprised in the basic systems.
Table 3 contains the power characteristics and mounting codes.

Table 1: Typenumbers and available models

Type Number	Description	Class
P851-100	P851 Basic System with 12 free general purpose slots models: P851-100/01 incl. minipanel card P851-100/11 incl. full control panel	B
P851-200	P851 Basic System with 5 free general purpose slots models: P851-200/11 incl. minipanel card and filter P851-200/12 incl. hand held control panel and filter P851-200/41 incl. minipanel, filter and battery P851-200/42 incl. hand held control panel, filter and battery	B*
P854-300	P854 Basic System with 9 free general purpose slots incl. control panel interface for either hand held control panel or extended digital control panel. A ventilation unit is mandatory if the system is mounted in a cabinet, otherwise it is strongly recommended. models: P854-300/41 incl. filter board and battery P854-300/51 incl. filter board and 2 batteries	B*
P854-400	P854 Basic System with 20 free general purpose slots incl. power supplies PSUB1E and PSUM, battery back-up, filter board, ventilation unit and control panel interface for either hand held control panel or extended digital control panel.	B*
P857-400	P857 Basic System with 8 free general purpose slots (incl. extended control panel)	B*
P857-500	P857 Basic System with 15 free general purpose slots (incl. extended control panel)	B*
P859-400	P859 Basic System with 9 free general purpose slots (incl. extended digital control panel)	B*
P870-256	P870 Basic System with 5 free general purpose slots incl. 4K 16-bit words of memory, sockets for 6K or 12K PROM	A
P870-356	P870 Basic System with 11 free general purpose slots incl. 4K 16-bit words of memory, sockets for 6K or 12K PROM models: P870-x56/11 incl. filter P870-x56/41 incl. filter and battery	A

Type Number	Description	Class
P871-300	P871 Basic System with 11 free general purpose slots incl. battery back-up, mains filter, control panel interface for either hand held control panel or extended digital control panel, facility for connection of Winchester disc drives.	A
P874-300	P874 Basic System with 9 free general purpose slots incl. mains filter, battery back-up, control panel interface for either hand held control panel or extended digital control panel, facility for connection of Winchester disc drives. A ventilation unit is mandatory if the system is mounted in a cabinet, otherwise it is strongly recommended.	A
P874-400	P874 Basic System with 20 free general purpose slots incl. power supplies PSUB1E and PSUM, battery back-up, filter board PSU8B, ventilation unit, control panel interface for either hand held control panel or extended digital control panel, facility for connection of Winchester disc drives.	A
P876-400	P876 Basic System with 18 free general purpose slots incl. power supplies PSUB1E and PSUM, battery back-up, filter board PSU8B, ventilation unit, cable support, control panel interface for either hand held control panel or extended digital control panel, facility for connection of Winchester disc drives.	A

Table 2: Basic system components

		P851	P854	P857	P859	P870	P871	P874	P876
Racks:	Eurorack	-100							
	6U6G rack	-200							
	6U6U rack					-256			
	6U12 rack		-300			-356			
	RU22 rack		-400						
	M4M box			-400					
	M4R box				-400				
	M5 box			-500					
	RA12F rack						-300	-300	
	RAL22F rack							-400	-400
CPU's:	CPSZ-card	x							
	C7E1-, C7E2-, MIOP-cards (P857E-cards)		x					x	
	CP7B-, MMU-cards			x					
	CP7R-card				x				
	SBCA-card					x			
	CP1BF-card						x		
	CP2B-cardset								x

Table 3: Basic system mounting and power characteristics

Type Number	Free slots	Mounting code	power available (in Amp) logic +5V	-5V	+12V	-12V	+16V	+18V	-18V	+24V	memory +5V	+12V	+16V	Notes (app.1)	Class
P851-100	12	rack 6U	12.2		2.0	1.2					1.2	.9		1,32	B
P851-200	5	rack 6U	11.2		1.0	.5					1.5	.9		1,2,32	B*
P854-300	9	rack 6U	19.2		2.9	0.95					1.5	.9		3,4	B*
P854-400	20	rack 10U	31.2	0.7	1.4	0.95					2.5	1.4		3,31	B*
P857-400	8	rack 6U	29.6	2.0			9.0	2.0	2.0					1,5,8,12,30,33	B*
P857-500	15	rack 11U	72.6	4.0			18.0	4.0	4.0					1,5,8,12,30,33	B*
P859-400	9	rack 6U	48.8	1.5				1.7	1.9		8.0		3.0	1,3,5,8,34	B*
P870-256	5	rack 6U	11.6		1.5	.5					1.1	.8		2,10,11	A
P870-356	11	rack 6U	25.6		3.0	1.0					1.1	.8		2,10,11	A
P871-300	11	rack 6U	27.4		0.98	0.48				3.5	3.0			3,35	A
P874-300	9	rack 6U	21.2		0.9	0.47				3.5	3.0			3,35	A
P874-400	20	rack 10U	31.2	1.0	1.25	0.95				3.5	3.0	1.5		3,31,35	A
P876-400	18	rack 12U	15.0	1.0	1.25	0.95				3.5	3.0	1.5		3,31,35	A

Remark: The number of U(nits) denotes the height of the rack. 1U is 1.75" (44.45 mm).

Chapter 2 : Memories

In the P800-series two groups of memories exist:
MOS-memories on double Euro-cards for the P851, P854, P871, P874 and P876
MOS-memories on Belier cards for the P857 and P859
All memories require one general purpose slot in the basic system.
Memories of the same type (same card format, same cycle and access times) can be combined in one basic system within the addressing possibilities of that system.

MOS-memories on double Euro-cards

Type number	Capacity	max.acc. time(us)	Power consumption (in Amp)	+5VL	+12VL	+5VM	+12VM	Appl.system P85.	P87.	Class	Remarks
P851-004	4k16	GPBS .54	op	.4		.4	.3	1		B	
			nop	.4		.4	.05				
P851-005	8k16	GPBS .48	op	.4		.4	.3	1		B	
			nop	.4		.4	.07				
P851-016	16k16	GPBS .56	op	.53		.5	.51	1 4		B	
		UPL .65	nop			.5	.09				
P851-017	32k16	GPBS .56	op	.53		.5	.55	1 4		B	
		UPL .65	nop			.5	.13				
P844-016	8k16	UPL .64		1.4	.035			1 4		A	RAM CMOS memory with battery included on the card
P843-608	128k21	UPL .35	op	1.5		1.14		4	1 4 6	A	
			nop	1.5		.62					
P851-010	16k16		package dependent					1 4	1 4 6	B*	card for EPROM chips type 2716 delivered without chips
P851-012	32k16		package dependent					1 4	1 4 6	A	card for EPROM chips type 2732 or 2732A, del. without chips
P843-012	---		1.45+ nx0.065		.45+ (n-2)x0.01			1 4	1 4 6	A	progr. tool for P851-010/012 n=number of EPROM-chips for software support see SRTM2

For power consumption calculations one module must be assumed operating (op), the others non-operating (nop)

MOS-memories on Belier cards

Type Number	Capacity	max.acc. time(us)	Power consumption (in Amp)	5VL	5VM	16VM	Appl.system P85.	P87.	Class	Remarks
P843-528	128k21	.45	operating	2.8	2.0	1.0	7	9	B‡	
			non-oper.	2.8	2.0	.65				
P843-529	128k21	.35	operating	2.8	2.05.	1.0	7	9	B‡	
			non-oper.	2.8	2.05	.65				

For power consumption calculations one module must be assumed operating (op), the others non-operating (nop)

Battery back-up times

Rack	Battery	Memory	Back-up time
Eurorack	P851-046	32k16 MOS memory	1.5 hours
6U6U/6U6G	option in rack (max 1)	32k16 MOS memory	2.0 hours
6U12	option in rack (max 2)	32k16 MOS memory	2.0 hours per battery
M4R	standard in rack	128k21 MOS memory	60 minutes
		256k21 MOS memory	30 minutes
		512k21 MOS memory	10 minutes
RU22	standard in rack	32k16 MOS memory	6.0 hours
		64k16 MOS memory	3.0 hours
		128k21 MOS memory	3 hours
RA12F	standard in rack	128k21 MOS memory	1 hour
RAL22F	standard in rack	128k21 MOS memory	3 hours

Chapter 3 : Basic system options and accessories

Type number	Description	Appl.system P85.	P87.	Class
	I/O-processors			
P851-020	I/O-processor (IOPZ) High speed multiplex data channel. Automatic control of data exchange on cycle stealing basis. Requires 1 memory cycle per data transfer. Maximum throughput 300k words/sec. 8 subchannels standard. Mounting code: 1 slot. Power consumption: +5V/1.1A	1		B
P843-120	Single I/O-processor (IOPZR) High speed multiplex data channel. Automatic control of data exchange on cycle stealing basis. Requires 1 memory cycle per data transfer. Maximum throughput 450k words/sec. 8 subchannels standard. Mounting code: 1 slot. Power consumption: +5V/3.2A	4	1 4 6	A
P843-020	I/O-processor (IOP) High speed multiplex data channel. Automatic control of data exchange on cycle stealing basis. Requires 1 memory cycle per data transfer. Maximum throughput 830k words/sec. 8 subchannels standard. Addressing range 128kw. Mounting code: 1 slot. Power consumption: +5V/2.3A	7	9	B‡

Type number	Description	Appl.system P85.	P87.	Class
	Floating point processors			
P854-020	Floating point processor (FPPE) Performs high speed arithmetic operations on 48-bit operands. Mounting code: 2 slots. Power consumption: +5VL/4.45A.	4	4 6	A
P857-020	Floating point processor (FPP) Performs high speed arithmetic operations on 48-bit operands. Mounting code: 1 slot. Power consumption: +5V/6A.	7 9		B*
	Clocks			
P843-160	Programmable real time clock (RTCZ) Crystal controlled. Period range between 1 ms and 32 sec (selected by software) or standard rate 1 ms - 5 ms - 10 ms - 20 ms (selected by hardware). Mounting code: 1 slot. Power consumption: +5V/0.9A	1 4	1 4 6	A
P843-060	Programmable real time clock (PRTC) Mounting code: 1 slot. Power consumption: +5V/0.9A	7 9		B*
	Initial program loaders			
P843-053	General purpose initial program loader Bootstrap. Excl. ASR and ROM. Mounted in sockets on CPU-card.	1		B
P843-054	General purpose initial program loader Bootstrap. Excl. discs and floppy. Mounted in sockets on CPU-card. When ordered with the system it replaces the standard IPL.	1		B
	Operator control panels and associated items			
P851-049	Central processor cover plate Associated with full control panel P851-032. Mounting code: 4U.	1		B
P851-048	Central processor front cover To be used when no full control panel P851-032 is requested. Mounting code: 6U.	1		B
P843-500	Hand held control panel (HHCP) Power consumption: +5VL/0.3A; +12VL/0.2A; -12VL/0.02A See note 36 (appendix 1)	1 4	1 4 6	A
P843-501	Basic system front cover With place and lock mechanism for hand held control panel. Includes cable between front cover and CPU. Mounting code: 4U.	4	1 4 6	A
P843-502	Logic rack front cover for P854, P874-400 and P876 Mounting code: 6U.	4	1 4 6	A
P843-503	Basic system front cover To be used when no control panel is desired. Mounting code: 4U.	4	1 4 6	A
P843-504	Logic rack front cover for P871-300 and P874-300 Mounting code: 6U.		1 4	A

Type number	Description	Appl.system P85.	P87.	Class
P843-510	Basic system front cover including digital extended control panel (FRCP) Inclusive cable between control panel and CPU. Mounting code: 4U. Power consumption: +5VL/0.9A; +12VL/0.17A; -12VL/0.025A See note 36 (appendix 1)	4	1 4 6	A
P843-550	Cable between basic system front cover and hand held control panel. 10 m	1 4	1 4 6	A
P843-551	Cable between basic system front cover and hand held control panel. 3 m	1 4	1 4 6	A
P843-552	Cable between CPU and hand held control panel. 3 m	4	1 4 6	A
	BUS-translators			
P843-107	Translator card (IOTZ) to adapt the P851 bus to the general purpose bus of the P857/9. Mounting code: 1 slot. Power consumption: +5VL/1.8A	1		B
P843-117	BUS-translator (TUGP) to adapt the P854/71/74/76 bus to the general purpose bus of the P857/9. Mounting code: 1 slot. Power consumption: +5VL/1.5A See note 28 (appendix 1).	4	1 4 6	A
	Battery pack			
P851-046	Battery pack for power supply back-up during power failures. Capacity 2 AH. Charging time 48 hours. Mounting code: dedicated slot in P851-100	1		B
	Miscellaneous			
P851-050	Cable support rack and panel Mounting code: 1U	1 4	1 4	A
P843-200	Ventilation unit Included as standard in P854-400, P874-400 and P876-400. Mountable with P854-300, P871-300 and P874-300 to ensure forced cooling of the rack. Mounting code: rack 3U.	4	1 4	A
P843-400	Basic power supply module (PSUBIE) to extend power for logic in P854/74/76-400 configurations. Power available: +5VL/30A	4	4 6	A
P843-402	Memory power supply module (PSUM) to extend power for memory in P854/74/76-400 configurations. Power available: +5VM/3.0A; +12VM/1.5A	4	4 6	A

Chapter 4. P870 Single Board Computer

Type number	Description	Class
P870-001	Single Board Computer (SBC) CPU based on SP16C microprocessor. General Purpose Bus, unified or simplified. Interrupt handling. Standard P800 instruction set. Bit-handling instructions. Addressing facility for up to 32k 16-bit words. Sockets for 6k or 12k 16-bit words of PROM, type 2716 or 2732. 4k 16-bit words of RAM standard. Possibility to disconnect the on-board memory and to connect 32k 16-bit words of external memory through the bus. Digital Input/Output (32 lines). 3 counter timers. Serial V24 or current loop interface for asynchronous transmission. Real time clock. Power failure/automatic restart. Interface to control panel through extension card. Automatic start-up and possibility of on-board sequencing. Double Euro-card format. Power consumption: +5VL/2.4A; +5VM/0.6A; +12VL/0.05A; -12VL/0.03A. See notes 10, 11 (appendix 1). models: P870-001/01 gold plated sockets P870-001/02 tin plated sockets	A
P870-256	P870 Basic system with SBC-card, rack with 5 free general purpose slots and power supply Mounting code: rack 6U. Power available: +5VL/11.6A; +5VM/0.9A; +12VL/1.45A; +12VM/0.9A; -12VL/0.45A See notes 2, 10, 11 (appendix 1). models: P870-256/11 incl. filter P870-256/41 incl. filter and battery	A
P870-356	P870 Basic system with SBC-card, rack with 11 free general purpose slots and power supply Mounting code: rack 6U. Power available: +5VL/25.6A; +5VM/0.9A; +12VL/2.95A; +12VM/0.9A; -12VL/0.95A See notes 2, 10, 11 (appendix 1). models: P870-356/11 incl. filter P870-356/41 incl. filter and battery	A
P870-570	SBC Testtool (TSBC) Supports the functions of the hand held control panel including the preset address facility. Includes cable 0.5 m Mounting code: 1 slot. Power consumption: +5VL/1.7A; +12VL/0.04A; -12VL/0.04A	A

Chapter 5. Peripheral equipment and peripheral controllers

Type number	Description	Appl.system P85.	Appl.system P87.	Class
	Punched tape equipment			
P840-141	Control unit PTR/PTP (TRPZ) For punched tape reader P801-001 and tape punch P803-001. Mounting code: 1 slot. Power consumption: +5VL,1.2A See note 14 (appendix 1)	1 4	1 4 6	A*

Type number	Description	Appl.system P85.	Appl.system P87.	Class

Card equipment, Line printer equipment

P809-002 Matrix printer 200 lpm — Class: B
132 columns, 64 character set, Data Products interface.
Philips type X1415. Free standing.
To be connected via control unit P840-003 or P840-103.

P809-004 Matrix printer 400 lpm — Class: S&I
132 columns, 64 character set, Data Products interface.
Philips type X1425. Free standing.
To be connected via control unit P840-003 or P840-103.

models: P809-00x/21 incl. 7.5m cable and connector for Belier system — P85: 7 9
P809-00x/31 incl. 7.5m cable and connector for Euro system — P85: 1 4 — P87: 1 4 6

P840-103 Control unit CR/LP (CRLPZ) — P85: 1 4 — P87: 1 4 6 — Class: A
For card reader P806-102 and matrix lineprinter P809-004.
Data Products interface compatible. Mounting code: 1 slot.
Power consumption: +5V/1A. See notes 14,15 (appendix 1)

P840-003 Control unit CR/LP — P85: 7 9 — Class: B*
For card reader P806-102 and matrix lineprinter P809-004.
Data Products interface compatible. Mounting code: 1 slot.
Power consumption: +5V/1.7A. See notes 14,15 (appendix 1)

Recommendation :
The Printronix high resolution matrix printers, type 300 and type 600 have been tested with the P800 system. They can be connected via the control units P840-003 for Belier systems and P840-103 for Euro systems. Connection cables are available on request.

V24 Interface equipment

Recommendation :
Whereas character printers are no longer available from Philips the character printer KSR43 from Teletype (which is used by S&I for several years) can be used with P800 systems. It can be connected via any control unit or CPU with V24 asynchronous interface.

P816-010 Video display terminal — Class: A
Asynchronous, 96 character set, 24 lines of 80 characters, dual intensity, cursor addressing, 12 inch screen, white (P4) characters, blinking, blanking, underlining, hardcopy facility, hardware/software selectable functions, character mode transmission, V24 interface, video outlet port, power supply 100-240 V, 50/60 Hz. Table top. See note 22 (appendix 1)

P816-020 Video display terminal — Class: A
With all functions of the P816-010, but including blockmode transmission, split screen facility, read/write line, read/write straps and editing functions
Table top. See note 22 (appendix 1)

P818-010 Video display terminal — Class: A
Identical to P816-010, but 15 inch screen

P818-020 Video display terminal — Class: A
Identical to P816-020, but 15 inch screen

Type number	Description	Appl.system P85.	Appl.system P87.	Class
P818-051	Alphanumeric keyboard TTY oriented, including control keys and cable, for P816-010 and P818-010			A
P818-052	Alphanumeric keyboard including numeric pad, function keys, indicator lights and cable, for P816-020 and P818-020			A
P818-100	Plug-in current-loop interface 20, 40, 60 mA, with/without current source. Mounting code: 1 slot in P816/8 To be connected to AMA8C P845-070.			A
P816-120	Swivel stand for P816. Table top.			A
P818-120	Swivel stand for P818. Table top.			A
P845-140	Control unit for serial data transfer (SCUZ) Interface according to CCITT recommendations V24 and V28 or current loop (TTY), speed selectable from 110, 150, 300, 600, 1200, 2400, 4800 and 9600 bits/sec. Mounting code: 1 slot. Power consumption: +5VL/0.5A; +12VL/0.025A; -12VL/0.045A See note 14 (appendix 1)	1 4	1 4 6	A
P845-145	Control unit for serial data transfer (ASCU4Z) Interface according to CCITT recommendations V24 and V28, for 4 half-duplex or 2 full-duplex asynchronous local connections, speed selectable from 110, 150, 200, 300,600, 1200, 2400, 4800 and 9600 bits/sec. Mounting code: 1 slot. Power consumption: +5V/1.75A; +12V/0.05A; -12V/0.03A See note 14 (appendix 1)	1 4	1 4 6	A
	Disc equipment			
P824-140	Control unit for up to 2 moving head disc drives P824-014 (CDDZ) To be connected via I/O-processor. See note 14 (appendix 1). Mounting code: 1 slot. Power consumption: +5VL/2.45A	1 4	1 4 6	B
P824-040	Control unit for up to 2 moving head disc drives P824-014 (CDD) To be connected via I/O-processor. See note 14 (appendix 1). Mounting code: 1 slot. Power consumption: +5V/4A	7 9		B*
P825-008	Moving head cartridge disc drive Capacity 80M 8-bit characters, sector length by software control, average access time 30 msec, latency 8.33 msec, 3600 rpm, data transfer rate 9.67MHz,0 including 7.5m cable, free standing quietized cabinet with power supply CDC type 9762 To be connected via control unit P825-040, P825-041 or P825-141. models: P825-008/03 1st drive, incl. 7.5m cable and connector for Belier system P825-008/13 2nd drive, incl. 7.5m cable and connector for Belier system P825-008/04 1st drive, incl. additional control logic, 7.5m cable and connector for Euro system P825-008/14 additional drive, incl. 7.5m cable and connector for Euro See note 37 (appendix 1)	7 9 7 9 4 4	 4 6 4 6	B
P825-200	Cartridge for P825-008 (CDC type 9877)			S&I

Type number	Description	Appl.system P85.	P87.	Class
P825-011	Moving head disc drive 64M One fixed and one removable cartridge, removable capacity 16M bytes non formatted, fixed capacity 48M bytes non formatted, average access time 30 ms, latency 8.3 ms, 3600 rpm, data transfer rate 1.2 Mbps, free standing cabinet with power supply. CDC type 9448-64 To be connected via control unit P825-141. See note 37 (appendix 1).	4	4 6	A
P825-012	Moving head disc drive 96M One fixed and one removable cartridge, removable capacity 16M bytes non formatted, fixed capacity 80M bytes non formatted, average access time 30 ms, latency 8.3 ms, 3600 rpm, data transfer rate 1.2 Mbps, free standing cabinet with power supply. CDC type 9448-96. To be connected via control unit P825-141. See note 37 (appendix 1). models: P825-01x/04 1st drive P825-01x/14 additional drive	4	4 6	A
P825-201	Cartridge for P825-011 and P825-012 (CDC type 91204)			A
P825-040	Control unit for up to 2 moving head cartridge disc drives P825-008 (CUBIGD) Including DMA-facility and data chaining of variable record length format. Mounting code: 1 slot. Power consumpt.: +5V/8A; -5V/0.8A. See note 14 (app.1)	7 9		B*
P825-041	Control unit for up to 2 moving head disc drives P825-008 (BIGD2) Including DMA facility and data chaining of variable record length format. Mounting code: 1 slot. Power cons.: +5VL/4.9A; -5VL/0.8A. See note 14 (app.1)	7 9		B*
P825-141	Control card for up to 4 moving head disc drives P825-008/011/012 (DFP-C) Including DMA facility and data chaining of variable record length format. Mounting code: 2 slots. Power consumption: +5VL/8.4A; -5VL/0.7A See note 14 (appendix 1). Only for P854-400, P874-400 and P876-400 models.	4	4 6	A
P829-001	Equipment shelf with one 8" Winchester rigid fixed disc drive Capacity 35M 8-bit characters unformatted, average accesstime 50ms, 3600rpm, data transferrate 0.8Mbps, type Priam Diskos 3450. Mounting code: 6U. Power supply self-contained. To be connected via control unit P829-140. See note 35 (appendix 1).		1 4 6	A
P829-005	Equipment shelf with one 5.25" Winchester rigid fixed disc drive Capacity 10M 8-bit characters unformatted, incl. XEBEC-card, type Seagate Mounting code: 6U. Power supply self-contained. To be connected via control unit P829-141. See note 35 (appendix 1). The following equipment may also be mounted in the same equipment shelf: - either a second 8" Winchester disc drive P829-002 (in P829-001 only) - or a second 5.25" Winchester disc drive P829-006 (in P829-005 only) - or a streamer drive P829-010 (Power cons. 5VL/3.5A, 24V/1.7A(2.5 peak)) - or a floppy drive P830-035 (Power cons. 5VL/1.25A,24V/1.6A) - or a combination streamer drive P829-010 and floppy drive P830-035 (Power cons. 5VL/4.75A,24V/3.3A(4.1 peak)) Equipment shelf models: P829-00x/01 1st eq. shelf for P871-300 and P874-300 P829-00x/11 1st eq. shelf for P874-400 and P876-400 P829-00x/02 2nd equipment shelf		1 4 6	A

Type number	Description	Appl.system P85.	P87.	Class
P829-002	8" Winchester rigid fixed disc drive Capacity 35M 8-bit characters unformatted, average accesstime 50ms, 3600rpm, data transferrate 0.8Mbps, type Priam Diskos 3450. Power supply self-contained. Incl. cable. To be mounted in equipment shelf P829-001 and connected via CU P829-140.		1 4 6	A
P829-006	5.25" Winchester rigid fixed disc drive Capacity 10M 8-bit characters unformatted, cable, type Seagate Power supply self-contained. To be mounted in equipment shelf P829-005 and connected via CU P829-141.		1 4 6	A
P829-140	Control unit for up to four 8" Winchester disc drives (WDC) Including DMA facility and variable record length format, native interface, error correction and I/O cable. Mounting code: 1 slot. Power consumption: +5VL/4.35A		1 4 6	A
P829-141	Control unit for up to four 5.25" Winchester disc drives (WDD) Including DMA facility and variable record length format, SASI interface, error correction in XEBEC-card and I/O cable. Mounting code: 1 slot. Power consumption: +5VL/3.5A		1 4 6	A
	Floppy disc equipment			
P830-015	Floppy disc drive Capacity 256k 8-bit characters, IBM 3740 format, with doorlock. CDC type 9404. To be mounted in equipment shelf P830-010. To be connected via control unit P830-050 or -150. See note 18 (appendix 1).			A
P830-035	Floppy disc drive Capacity 1M 8-bit characters, IBM 34-2 format, with doorlock. CDC type 9406 To be mounted in equipment shelf P830-010 or P829-001/5. To be connected via control unit P830-050 or P830-150. See note 18 (appendix 1). models: P830-035/01 220V/50Hz mountable in equipment shelf P830-010 P830-035/02 110V/60Hz mountable in equipment shelf P830-010 P830-035/11 220V/50Hz mountable in equipment shelf P829-001/005			A
P830-100	10 diskettes for P830-006/015, IBM pre-formatted			S&I
P830-200	10 diskettes for P830-025/035, IBM pre-formatted			S&I
P830-150	Control unit for up to 4 floppy disc drives P830-006/015 or up to 2 floppy disc drives P830-025/035 (F1MZ) Mounting code: 1 slot. Power consumption: +5VL/1.8A. I/O processor required.	1 4	1 4 6	A
P830-050	Control unit for up to 4 floppy disc drives P830-006/015 or up to 2 floppy disc drives P830-025/035 (F1MB) Mounting code: 1 slot. Power consumption: +5VL/1.7A. I/O processor required. models: P830-x50/01 incl. cable for 2 floppy disc drives P830-x50/05 incl. cable for 4 floppy disc drives	7 9		B*
P830-010	Equipment shelf for up to 2 floppy disc drives P830-006/015/025/035 Mounting code: rack 6U. Including power supply. When 3 or 4 floppy disc drives are connected to one control unit, 2 equipment shelves are needed. In case of extension CU cable 5111 199 71020 (Euro) or 5111 199 71970 (Belier) has to be ordered.	1 4 7 9	1 4 6	A

Type number	Description	Appl.system P85.	Appl.system P87.	Class
	Magnetic tape equipment			
P829-010	Streamer cartridge drive Capacity 20M 8-bit characters, 90 ips, 8000 bpi, start/stop time 300ms, data transferrate 90Kbps, type Archive Sidewinder, model 9020E. To be mounted in equipment shelf P829-001/5. To be connected via CU P829-160.		1 4 6	A
P829-100	Streamer cartridge for P829-010, type Archive Sidewinder .25" cartridge			A
P829-160	Control unit for one streamer cartridge drive P829-010 (WJA) Including DMA facility and datachaining of variable record length format. Native interface, error recovery by 16 retries. Mounting code:1 slot. Power consumption: +5VL/4.1A		1 4 6	A
P831-006	Magnetic tape unit 9 tracks, 37.5 ips, 1600 bpi, 10.5 inch reels, read after write operation, recording method ANSI, Phase encoded, IBM-compatible, including hinges for rack mounting and 3 m cable to formatter. Pertec type 6640/9,37.5ips. MC: rack 14U. Power supply selfcontained. See note 1 (appendix 1). To be connected via tape formatter P831-030 and control unit P831-060. models: P831-006/01 1st tape unit P831-006/11 additional tape unit			B*
P831-030	Formatter for up to 4 magnetic tape units P831-006 Including 1.5 m cable to control unit and telescopic slides. Pertec type F649-60,30.5/1600. Mounting code: rack 2U. Power supply selfcontained. See note 1 (appendix 1)			B*
P831-060	Control unit for up to 4 magnetic tape units P831-004/006 (MTCU) Mounting code: 1 slot. Power consumption: +5V/2.7A Can be used in Euro-systems with BUS-translator P843-107 (P851) or P843-117 (P854/74/76) and extension shelf P843-001. See note 17 (appendix 1)	7 9		B
P833-100	Pack of 10 tape cassettes for P833-002			S&I

Chapter 6 : Data communication and miscellaneous controllers

Type number	Description	Appl.system P85.	Appl.system P87.	Class
P845-160	Control unit for 1 synchronous or 1 asynchronous line (SALCUZ) full duplex or half duplex connection, transmission speed selectable: asynchronous 110, 200, 300, 600, 1200, 2400, 4800, 9600 bps synchronous 1200, 2400, 4800, 9600, 19200 bps Mounting code: 1 slot. Power consumption: +5VL/1.5A; +12VL/0.05A; -12VL/0.09A See notes 14, 19 (appendix 1)	1 4	1 4 6	A
P845-170	Control unit for 1 synchronous line (SLCUZ) full duplex or half duplex connection, transmission speed up to 4.8K bps in full duplex mode and 9.6K bps in half duplex mode. Special character recognition. CRC/VRC/LRC generation and check. Remote control of modem loops (2,3,4). Interface according to V24/V28 recommendations. Mounting code: 1 slot. Power consumption: +5VL/1.9A; +12VL/0.1A; -12VL/0.1 See notes 14,19,28 (appendix 1)	1 4	1 4 6	A
P845-180	Asynchronous medium speed line multiplexor (AMA4Z) for 4 full duplex or half duplex connections 75 to 19200 bps with interface according to CCITT V24/V28 recommendations. Mounting code: 1 slot. Power consumption (prel): +5VL/2.8A, +12VL/0.15A, -12VL/0.15A	1 4	1 4 6	A
P845-110	Control unit for high level data link procedure (HLVCUZ) for 1 half duplex or 1 full duplex connection up to 100,000 bps inplant and 20,000 bps outplant with interface according to CCITT V24/V28 recommendations. Control unit using frame structures according to HDLC/SDLC standards. Including facilities such as control of modem loops (2,3,4) and automatic address field detection. Mounting code: 1 slot. Power consumption: +5VL/1.9A; +12VL/0.06A; -12VL/0.06A See notes 14, 19 (appendix 1)	1 4	1 4 6	A
P847-060	Multiple control unit (SLCU2S) for 2 half duplex or 1 full duplex synchronous line connections up to 200,000 bps inplant and 20,000 bps outplant, with interface according to CCITT V24/V28 recommendations. Special character recognition, CRC-VRC generation and check. Mounting code: 1 slot. Power consumption: +5V/4A; +18V/0.08A; -18V/0.16A See notes 14, 19 (appendix 1)		7 9	B*
P847-110	Control unit for high level data link procedures (HLVCU-B) for 2 half duplex or 2 full duplex connections up to 100,000 bps inplant and 20,000 bps outplant, with interface according to CCITT V24/V28 recommendations. Control unit using frame structures according to HDLC/SDLC standard. Including facilities such as control of modem loops (2,3,4) and automatic address field detection. Mounting code: 1 slot. Power consumption: +5VL/3.0A; +18VL/0.1A; -18VL/0.1A See notes 14, 19 (appendix 1)		7 9	B*
P846-070	Multiple control unit (ALCU4) for 4 half duplex or 2 full duplex asynchronous line connections 300 to 9600 bps with interface according to CCITT V24/V28/V23 recommendations. Mounting code: 1 slot. Power consumption: +5V/4A; +18V/0.12A; -18V/0.18A See note 14 (appendix 1)		7 9	B*

Type number	Description	Appl.system P85.	P87.	Class
P845-060	Asynchronous medium speed line multiplexor (AMA8A) for 8 full duplex or half duplex connections 50 to 9600 bps with interface according to CCITT V24/V28 recommendations. Mounting code: 1 slot: Power consumption: +5V/5A; +18V/0.24A; -18V/0.36A See note 14 (appendix 1)	7	9	B*
P845-070	Asynchronous medium speed line multiplexor (AMA8C) for 8 asynchronous line connections 50 to 9600 bps with current loop interface or TTL interface. Does not provide line current. Mounting code: 1 slot. Power consumption: +5V/4.5A; -18V/0.1A See note 14 (appendix 1)	7	9	B*
	Miscellaneous			
P837-002	Digital input/output control unit (DIOD-2) for 2 16-bit input words and 2 16-bit output words, incl. level adaptation, excl. connectors. TTL compatible. MC: 1 slot. PC: +5V,3.5A for input only/ 5.3A for input and output. Various cards supplying digital I/O, A/D- or D/A-conversion are offered by the MIOS6-system. This system can be interfaced to any computer of the P800 family. More information on this system can be obtained from S&I-Eindhoven	7	9	B*

Chapter 7 : Miscellaneous hardware

Type number	Description	Appl.system P85.	P87.	Class
	Extenders and adapters			
P843-009	Terminator To be used in equipment connected to the end of the GP-bus, e.g. P843-001. Power consumption: +5V/0.9A			A
P843-115	General purpose bus cable with connectors models: P843-115/01 3m P843-115/03 5m			A
P843-030	Break lines cable, 5m to connect IOP P843-020 to equipment shelf P843-001 or cassette shelf P833-152			A
P843-031	Extension break lines cable, 5m to connect equipment shelves P843-001 and/or cassette shelves P833-152 to each other			A
	Equipment shelves			
P843-001	Equipment shelf Space for 6 I/O-cards, including power supply +5V/18A; +18V/1A; -18V/1A, telescopic slides, bus cable 3 m, and bus connector. When connected to the end of the GP-bus a terminator P843-009 must be added. When used with a Euro-system a bus-translator P843-107/117 is necessary. Mounting code: rack 3U. See notes 1, 17, 23 (appendix 1)	1 4 7	9 1 4 6	A
P830-010	Equipment shelf for floppy disc drives. See page 13	1 4 7	9 1 4 6	A

Type number	Description	Appl.system P85.	P87.	Class
	Cards and connectors			
P843-024	Set of 10 Euro-card connectors (female), 2*36 pins (wrapped version)			A
P843-015	Set of 10 PUC I connectors for cables with a diameter of up to 11 mm			A
P843-016	Set of 5 PUC II connectors for cables with a diameter of up to 14 mm			A
	Data communication auxiliary equipment			
P849-029	Modem panel for 16 synchronous/asynchronous external connections; meant for Cannon type connectors. Mounting code: rack 2U.			A
	Cables for DC-applications with Belier-format cards			
P843-038	Cable for connection of a V24 interface to P856/7/8/9 CPU; 7.5 m	7 9		B*
P849-524	Cable between modem panel P849-029 and line control unit SLCU2S, ALCU4 or HLVCUB for 1 half duplex or 1 full duplex connection; 3 m	7 9		B*
P849-624	Cable between modem panel P849-029 and line control unit P845-060 for 4 half duplex or 4 full duplex connections; 3 m	7 9		B*
P849-724	Cable between modem panel P849-029 and line control unit P845-070 for 4 device connections; 3 m	7 9		B*
P849-734	Cable between line control unit P845-070 and 4 external units (open ended); 7.5 m	7 9		B*
P849-346	Cable between modem pan. P849-029 and modem according to CCITT recommendations V24;5m	7 9		B*
P849-336	Cable between modem panel P849-029 and 1 V24 terminal (locally connected); 5 m	7 9		B*
	Cables for DC-applications with Euro-format cards			
P843-048	Cable 7.5m for connection of V24 terminal to serial Euro CU (ASCU4Z)	1 4	1 4 6	A
P843-050	Cable 7.5m for serial Euro CU (ASCU4Z) open ended (current loop)	1 4	1 4 6	A
P849-514	Cable 7.5m between line CU (SALCUZ/HLVCUZ/SLCUZ) and V24 modem	1 4	1 4 6	A
P849-356	Cable 7.5m between line CU (SALCUZ/HLVCUZ/SLCUZ) and V24 terminal	1 4	1 4 6	A
P849-357	Cable 7.5m between line CU (SCUZ) and V24 terminal	1 4	1 4 6	A
P849-358	Cable 7.5m between line CU (SCUZ) and CL terminal	1 4	1 4 6	A
P849-359	Cable 1.5m between modem panel and V24 Euro CU (ASCU4Z)	1 4	1 4 6	A
P849-360	Cable 1.5m between modem panel and V24 Euro CU (SALCUZ/HLVCUZ/SLCUZ)	1 4	1 4 6	A
	Cables for displays			
P843-040	Cable 7.5m for connection to P857/9 CPU	7 9		B*
P843-042	Cable 7.5m for connection to V24 Euro CU (SCUZ)	1 4	1 4 6	A
P843-043	Cable 5m for connection to the modem panel (current loop)			A
P843-044	Cable 7.5m for connection to current loop Euro CU (SCUZ)	1 4	1 4 6	A
P843-045	Cable 5m for connection to the modem panel (V24)			A
P843-047	Cable 7.5m for connection to V24 Euro CU (ASCU4Z)	1 4	1 4 6	A
P843-051	Cable 7.5m for connection to V24 Euro CPU (P854/74/76)	4	4 6	A

Type number	Description	Appl.system P85.	P87.	Class
	Cabinets			
P849-076	Basic 19" cabinet, 36 units with side panels and rear door, but non-equipped. See notes 26, 29 (appendix 1)			A
P849-077	Basic 19" cabinet, 36 units with 2 fans, 14A power distribution panel, side panels and rear door usable height 33U, usable depth 27.5 inch. See notes 26, 29 (appendix 1)			A
P849-176	Extension 19" cabinet, 36 units with side panels and rear door, but non-equipped. See notes 26, 29 (appendix 1)			A
P849-177	Extension 19" cabinet, 36 units with 2 fans and rear door, usable height 33U, usable depth 27.5 inch. See notes 26, 29 (app. 1)			A
	Cabinet accessories			
P849-042	Power distribution panel 14A. Mounting code: rack 2U			A
P849-043	Power distribution panel 25A. Mounting code: rack 2U			A
P849-046	Front panel, height 1U			A
P849-047	Front panel, height 3U			A
P849-048	Front panel, height 5U			A
P849-049	Front panel, height 7U			A
P849-070	Ventilation unit 2 fans. Mounting code: rack 1U. See note 26 (appendix 1)			A
P849-071	Ventilation unit 4 fans. Mounting code: rack 1U. See note 26 (appendix 1)			A
P849-078	Pedestal for 19" cabinet. Required when disc drives are mounted in cabinet			A
	Maintenance equipment			
P843-350	Extension card for testing single-Euro-format cards outside the rack	1		B‡
P843-351	Extension card for testing double-Euro-format cards outside the rack	1 4	1 4 6	B‡
P843-352	Extension card for power supply regulator card	1		B‡

Chapter 8 : Software

Software can be ordered at Philips S&I and will be issued as distribution systems only. A distribution system is a collection of a number of software items and constitutes the software systems as are issued by Philips Data Systems. Software items as listed on the next pages can be selected out of these distribution systems. Below a survey of the distribution systems is given.

System	12NC	medium	class	note
MAS	8701 305 8rllm	disc/magn.tape/streamer/1Mfloppy	1A	1,3,7
DOS/DRTS (FOS/FRTS)	8701 307 8rllm	disc/magnetic tape	1B	3,6,7
BRTS	8701 306 8rllm	disc/magnetic tape	1B	2,7
SRTM2	8701 309 8rllm	disc/magnetic tape	1B	5,6,7
FORTRAN	8701 357 8rllm	disc/magnetic tape	1B	4,7
RTL/2	8701 352 8rllm	cassette tape/magnetic tape	1B	4,7
AMS	8701 360 8rllm	cassette tape/magnetic tape	1B	4,7

Notes:

1. A MAS based starter system tailored to handle the specified minimum configuration, together with all required utilities to handle the delivered software.
2. See note 1, but now a DOS based starter system is available on the medium.
3. The magnetic tape contains a copy of a disc pack or cartridge. The tape contents need to be restored on disc before the distribution system can be used.
4. LM-type, OB-type and UF-type files to be used with MAS and/or DOS.
5. SRTM2 has replaced SRTM/SRRTM.
6. Includes the ROM generation software PV271-161, PV271-162 and PV271-163.
7. The 12NC contains information about release (r), level (ll) and medium (m) on which the software can be made available. The medium is indicated by:
   - 3 - cassette tape
   - 4 - magnetic tape 800 bpi
   - 5 - magnetic tape 1600 bpi
   - 6 - disc 5M
   - 7 - disc 80M
   - 8 - floppy disc 1M
   - 9 - streamer

Type number	Description

Basic Real Time System (BRTS)

(memory required 8k16)

PV270-070 Basic package including :
- Basic Real Time Monitor (BRTM) serving peripherals as specified in appendix 2
- Papertape loader
- System generator for Basic Real Time Monitor (BRMGEN)
- INTCP operator command program
- AUTINI 32k memory LM generation
- Remote loading
- MMU package enabling memory usage greater than 32k words

PV266-004 Full FORTRAN Real Time library

PV207-022 Data communication package for BRTM serving DC control units as specified in appendix 2
It includes: - System generator
- HDLC procedure

PV207-040 BSC Line Procedure package for synchronous line control units

PV265-003 ASCII-memory dump on lineprinter P809-002/004, DP-compatible

Notes:
1. Note the availability of control units for the specific systems as specified in appendix 2.
2. Minimum configuration: - 8k 16-bit words of memory
- I/O typewriter
3. For system generation 16k words are mandatory.
4. The Basic Real Time Monitor is designed as a runtime executive system, capable of handling real time events and a variable number of programs in a multitasking environment.
5. The Basic Real Time Monitor includes all functions of the Small Real Time Monitor and is expanded with more monitor requests and I/O facilities. Each program, which runs under the Small Real Time Monitor, can run under the Basic Real Time Monitor.
6. FORTRAN programs have the possibility of using the facilities of the Full FORTRAN real time library, which enables easy writing of real time programs.
7. The IPL option P843-053/054 is highly recommended to run standard software on the P851.
8. The BRTS is classified in class 1B. (Class 1B products are products with a frozen status. This implies that maintenance, releasing and support are restricted to urgent and very urgent problems only)

Small Real Time Monitor (SRTM2)

(memory required 4k16)

PV270-060 Basic package including
- Small Real Time Monitor (SRTM) serving peripherals as specified in appendix 2 and WSIA (Work Station for Industrial Applications) peripherals (see note 5)
- Loader
- Stand alone EPROM Programming tool to be used with the PRGT2-card (P843-012)

Notes:
1. SRTM2 is generated via the Macro Processor. It is possible to generate a Small Read Only Real Time Monitor for ROM versions.
2. The SRTM2 is upwards compatible with the Basic Real Time Monitor.
3. The SRTM2 is intended for dedicated computer applications requiring a small and fast operating system.
4. The SRTM2 is memory resident. For IPL and data storage paper tape, cassette or floppy disc can be used. SRTM2 and user programs are link-edited together.
5. With the Work Station for Industrial Applications some special devices can be used. These devices are: - light pen
- V24 I/O lines
- keyboard (16 keys) and display (16 characters)
- BCD input
- programmable counters/timers
6. Minimum configuration for the monitor: - 4k 16-bit words of memory
- I/O typewriter.

Type number	Description

Disc Operating System (DOS)

(memory required 32k16)

PV270-040 Basic package including
- Disc Operating Monitor (DOM) serving peripherals as specified in appendix 2
- Control command interpreter
- Line Editor
- System generation package
- Disc premark
- Assembler
- Linkage Editor
- Overlay Linkage Editor
- Debugging Package (class 1b)
- Macroprocessor (class 1b)
- Stand Alone General Purpose Loader (IPLDK)

PV265-003 ASCII-memory dump on lineprinter P809-002/004, DP-compatible

PV207-021 Data communication package for DOS serving DC control units as specified in appendix 2. It includes HDLC procedure

PV207-040 BSC Line Procedure package for synchronous line control units

PV207-051 On-line testroutines for SLCU2S, SLCU4, AMA8A/C, ALCU2/4

PV271-162 ROM Image under DOS. Utility routines running under the Disc Operating System to generate the input for the ROM Programmer DATA I/O on papertape (8+8 format)

PV271-163 ROM Image under DOS. Utility routines running under the Disc Operating System to generate the input for the ROM Programmer DATA I/O on cassette

Notes:
1. Minimum configuration for the basic package:
   - 32k 16-bit words of memory
   - I/O typewriter
   - 1 hard-disc unit
2. For FORTRAN see PV281-080 and PV281-082.
3. For RTL/2 see PV281-090.

Floppy Operating System (FOS)

(memory required 32k16)

PV270-042 Basic package including
- Floppy Operating Monitor (FOM) serving peripherals as specified in appendix 2
- Control command interpreter
- Line Editor
- System generation package
- Disc premark
- Assembler
- Linkage Editor
- Overlay Linkage Editor
- Debugging package (class 1b)
- Macroprocessor (class 1b)
- Stand Alone General Purpose Loader (IPLDK)

PV265-003 ASCII-memory dump on lineprinter P809-002/004, DP-compatible

PV207-021 Data communication package for DOS serving DC control units as specified in appendix 2. It includes HDLC procedure

PV207-040 BSC Line Procedure package for synchronous line control units

PV207-051 On-line testroutines for SLCU2S, SLCU4, AMA8A/C, ALCU2/4

Notes:
1. Minimum configuration for the basic package:
   - 32k 16-bit words of memory
   - I/O typewriter
   - 2 floppy disc units
2. One floppy disc unit (1M) can not contain all items listed above.

Type number	Description

Disc Real Time System (DRTS)

(memory required 32k16)

PV270-080 Basic package including
- Disc Real Time Monitor (DRTM) serving peripherals as specified in appendix 2
- System command language
- System generator for Disc Real Time Monitor
- Disc Premark
- Real Time Debugging package (class 1b)
- Macroprocessor (class 1b)
- Stand Alone General Purpose Loader (IPLDK)

PV207-023 Data communication package for DRTM serving DC control units as specified in appendix 2. It includes HDLC procedure

PV207-053 On-line testroutines for SLCU2S, SLCU4, AMA8A/C, ALCU2/4

PV207-040 BSC Line Procedure package for synchronous line control units

PV265-003 ASCII-memory dump on lineprinter P809-002/004, DP-compatible

PV270-085 Extended Disc File Management (EDFM)

Notes:
1. The Disc Real Time Monitor is designed as a runtime executive system, capable of handling real-time events and a variable number of programs in a multitasking environment.
2. Minimum configuration for basic package:
   - 32k 16-bit words of memory
   - 1 hard-disc unit
   - I/O typewriter

   It is recommended to have direct access to files and/or programs prepared under DOS.
3. The Disc Real Time Monitor is compatible with Disc Operating System in such a way, that a program developed under Disc Operating System can run without modification under the Disc Real Time Monitor.
4. FORTRAN programs can use thee facility of the real time FORTRAN routines.

Floppy Real Time System (FRTS)

(memory required 32k16)

PV270-082 Basic package (not for P852) including
- Floppy Real Time Monitor (FRTM) serving peripherals as specified in appendix 2
- System command language
- System generator for Floppy Real Time Monitor
- Real Time Debugging package (class 1b)
- Macroprocessor (class 1b)
- Disc premark
- Stand Alone General Purpose Loader

PV270-023 Data communication package for FRTM serving DC control units as specified in appendix 2. It includes HDLC procedure

PV270-053 On-line testroutines for SLCU2s, SLCU4, AMA8A/C, ALCU2/4

PV207-040 BSC Line Procedure package for synchronous line control units

PV265-003 ASCII-memory dump on lineprinter P809-002/004, DP-compatible

Notes:
1. The Floppy Real Time Monitor is designed as a runtime executive system, capable of handling real-time events and a variable number of programs in a multitasking environment.
2. Minimum configuration for basic package:
   - 32k 16-bit words of memory
   - 2 floppy disc units
   - I/O typewriter

   It is recommended to have direct access to files and/or programs prepared under a FOS.
3. The Real Time Monitor is compatible with Floppy Operating System in such a way, that a program developed under Floppy Operating System can run without modification under the Floppy Real Time Monitor routines.

Type number	Description

Multi Application System (MAS)

(memory required 64k16)

PV280-100 Basic package including
- Multi Application Monitor (MAM) serving peripherals as specified in appendix 2
- Batch control processor
- Foreground control language
- Update package
- Librarian
- System generation package
- Disc premark
- Assembler
- Overlay Linkage Editor
- Macroprocessor (class 1b)
- SORT
- Transaction oriented Disc File Management Access Method (TDFM) and utility (EDF)
- Data communication package for MAM serving DC control units as specified in appendix 2, includes HDLC procedure
- BSC Line Procedure package for synchronous line control units

Notes:
1. Minimum configuration:
   - 64 k 16-bit words of memory
   - 1 removable hard-disc unit or 1 Winchester drive and 1 floppy drive
     or 1 Winchester drive and 1 streamer drive (see note 35, app.1)
   - I/O typewriter
   - 1 lineprinter
2. For FORTRAN see PV281-081 and PV281-082
3. For AMS see PV281-085
4. For RTL/2 see PV281-091
5. Release 8.00 is meant for P854/59/71/74/76, release 8.50 for P857

Real Time Language (RTL/2)

PV281-090 RTL/2 package for DOS including
- RTL/2 compiler
- Linkage verifier
- Control routines
- Base programs
- Stream I/O formatting
- Stream I/O support
- Supervisory control procedures
- Mathematical library

PV281-091 RTL/2 package for MAS
(see PV281-090)

Note: Compiled programs will run under BRTM, DOM, DRTM, FOM, FRTM, MAS and SRTM2.

Extended FORTRAN

PV281-080 Extended FORTRAN compiler for DOS

PV281-081 Extended FORTRAN compiler for MAS

PV281-082 DOS/MAS compatible object libraries inclusive real time routines as well as the Transaction Data File Management package

Note: An object library can be made available tailored to specific requirements concerning reentrant/non-reentrant programs and wired/simulated floating point arithmetic.
Compiled programs will run under BRTM, DOM, DRTM, FOM, FRTM, MAS and SRTM2.

Type number	Description

Activity Management System (AMS3)

PV281-085 AMS package for MAS including
- Preprocessor program
- System generation package
- Backout and recovery program
- Runtime routines object library
- Network access generation tools
- Network initialization programs

The AMS-3 software offers the following features:
- Concurrent conversation from multiple terminals with one application developed to serve one terminal
- Application programming in a logical statement level language
- Use of a network access software to handle the connections between remote application and terminals
- Datatransmission from a data base by means of conversation between remote and local application
- Data file access management with recovery procedure
- On line processing of file allocation and cataloguing
- Handling of character strings and packed decimal variables
- Control of privacy

Note: The use of Extended FORTRAN is mandatory
AMS-3 replaces AMS-2

Chapter 9 : Testprograms

All P800 testprograms require as a minimum:
- IPL (ROM-bootstrap)
- full control panel
- a program loading device

The medium on which the testprogram will be delivered depends on the first digit in the PV-typenumber:
x=2 punched tape
x=3 cassette tape
x=4 floppy disc

In this chapter all available testprograms are listed, even those which apply to equipment which can no longer be delivered.

Part A: Testprograms for Euro-systems

Type number	Program name	Description	Memory required	Notes pag. 26
		Processors		
PVx50-128	CPZ8K	Program tests all P851 CPU instructions	8k16	1
PVx50-144	CP1A	Program tests all P853 CPU instructions	8k16	2
PVx50-145	CP57RE	Program tests all P854/874 CPU instructions	16k16	3
PVx50-143	SBCA	Testprogram for P870 to test all I/O controllers and timers on the card	4k16	10
PVx50-163	CP1/2B	Testprogram for P871/6	16k16	9

Type number	Program name	Description	Memory required	Notes pag. 26
		Memories		
PVx50-126	BRAM	Testprogram for semiconductor memories smaller than or equal to 32k16	4k16	5
PVx50-136	BBRAM	Testprogram for semiconductor memories beyond 32k16	32k16	3
		Serial intererface		
PVx50-139	BZSCU	Testprogram for serial V24 or current loop interfaced ASR33 or PER3100. Display via P845-140	4k16	5
PVx50-153	BASCU4	Testprogram for operability of ASCU4Z	8k16	5,9
		Disc		
PVx50-130	BFLOP1	Testprogram for P830-006/015 via P830-145	8k16	5
PVx50-134	BZ1250	Testprogram for P827-001 (X1250) via P827-140	16k16	8
PVx50-141	BZ1216	Testprogram for P824-014 (X1216) via P824-140	16k16	5,8,9
PVx50-142	BZCDD1	Testprogram for P824-012 (X1215) via P824-140	16k16	5,8,9
PVx50-148	BF1MZ	Testprogram which tests the F1MZ controller on the disc CDC 9404/9406	24k16	5,9
PVx50-152	BWDAB1	Testprogram for P825-011/012 via P825-141	32k16	3,5,9
PVx50-162	BWDD1	Testprogram for P829-006 via P829-141	32k16	5,9
PVx50-166	BWDC1	Testprogram for P829-002 via P829-140	32k16	5,9
PVx90-004	WDABU	Program for detection of bad spots for P829-011/012	32k16	9
PVx90-006	WDDU	Program for detection of bad spots for P829-006	32k16	9
PVx90-007	WDCU	Program for detection of bad spots for P829-002	32k16	9
		Peripherals		
PVx50-100	BPTR1	Testprogram for P801-001 via P801-140 or P840-141 (with reference tape)	4k16	5
PVx50-118	BPTP1	Testprogram for P803-001 or Facit 4060 via P840-141	4k16	5
PVx50-102	BCR1	Testprogram for P806-102 via P840-103	4k16	4,5
PVx50-119	BLP1	Testprogram for P809-002 (X1415) or P809-004 (X1425) via P840-103	4k16	5
PVx50-159	BSTREA	Testprogram for P829-010 via P829-160	tbf	5,9
		Datacommunication		
PVx50-115	BHDLC	Testprogram for P845-100	8k16	6,7,9
PVx50-116	BZSAC1	Testprogram for SALCU2 synchronous or asynchronous connections	8k16	6
PVx50-153	BASCU4	Testprogram for P845-145	8k16	6,7,9
PVx50-160	BHLVCU	Testprogram for HLVCU	24k16	7,9
PVx50-157	BSLCU2	Testprogram for P845-170	8k16	7,9
		Options		
PVx50-146	REMMU1	Testprogram for the memory management unit part of the P854	32k16	3,9
PVx50-147	REPAF	Testprogram for a page fault trap and handling of RTC and PW interrupt	32k16	3
PVx50-156	EFPP1	Testprogram for P854-020	32k16	9,11
PVx50-164	MMU2B	Testprogram for MMU part of CP1BF and CP2B	32k16	9
PVx50-165	PAF2B	Testprogram for page fault trap and handling of RTC and PW interrupt with CP1BF and CP2B	32k16	9

Notes

1 Only P851
2 Only P853
3 Only P854/874, consisting of 2 CPU cards and 1 MIOP card
4 Only P854/874
5 To run a peripheral testprogram the RTC is not mandatory, but highly recommended.
6 To run datacommunication testprograms the RTC is mandatory
7 P849-901 diagnostic box is required
8 Testprogram operates only on multiplex channel. An I/O processor is required
9 To run these testprograms a system console is required and it may be current loop or V24 interfaced
10 To run this testprogram a TSBC and a handheld control panel are required
11 Only P854/874 consisting of 2 CPU cards and 1 MIOP card, and P876

Part B: Testprograms for Belier-systems

Type number	Program name	Description	Memory required	Notes pag. 27
		Processors		
PVx50-120	CPA4K	Program tests instruction set of P852 CPU	4k16	1
PVx50-121	CPA8K	Program tests instruction set of P852 CPU	8k16	1
PVx50-127	CPB8K	Program tests instruction set of P856/7 CPU	8k16	3,6,7
PVx50-145	CP57RE	Program tests instruction set of P858/9 CPU	16k16	3,4,5
		Memories		
PVx50-122	BMEMO	Testprogram for memories smaller than or equal to 32k16, incl. PWF/AR	4k16	7
PVx50-129	BBMEMO	Testprogram for memories beyond 32k16, incl. PWF/AR (1.2 us or 0.7 us)	>32k16	3,4,7
PVx50-126	BRAM	Testprogram for semiconductor memories smaller than or equal to 32k16	4k16	3,4,6
PVx50-136	BBRAM	Testprogram for semiconductor memories beyond 32k16	>32k16	6
		Serial interface		
PVx50-101	BSER1	Testprogram for P842-001 via P845-040 or P840-002	4k16	6,7,8,9
PVx50-138	BBSER1	Testprogram for V24 device via controller on CPU board	8k16	3,6,7
PVx50-132	BP817	Testprogram for P817-001/002 via P840-002 or P845-040	4k16	8
PVx50-131	BBDISP	Testprogram for Hazeltine 1200A via serial controller on P856/7 CPU	8k16	3,8
PVx50-107	BDISP1	Testprogram for Hazeltine 1200A via P840-002 or P845-040	4k16	8
		Disc		
PVx50-133	BFHD1	Testprogram for DDC 8200/8400 via P826-040	4k16	8,9,10
PVx50-149	BF1MB	Testprogram for CDC 9404/9406 via F1MB (tests also SOP-function)	24k16	9
PVx50-130	BFLOP1	Testprogram for P830-006/015 via P830-045	8k16	8
PVx50-108	BCDC2	Testprogram for P825-007/008 via P825-040	32k16	8
PVx50-105	BCDD1	Testprogram for P824-012 (X1215) via P824-040	8k16	8
PVx50-140	BX1216	Testprogram for P824-014 (X1216) via P824-040	8k16	8
PVx50-151	BIGD2C	Testprogram for CMD disc drives via BIGD2	32k16	3,8,9
PVx50-155	BIGD2S	Testprogram for SMD disc drives via BIGD2	32k16	3,8,9

Type number	Program name	Description	Memory required	Notes pag. 29
		Peripherals		
PVx50-100	BPTR1	Testprogram for P801-001 via P840-001/002 or P801-040(with ref.tape)	4k16	8
PVx50-118	BPTP1	Testprogram for P803-001 or Facit 4060 via P840-001/002	4k16	8
PVx50-102	BCR1	Testprogram for P806-102 via P840-003 (with reference card deck)	4k16	8
PVx50-119	BLP1	Testprogram for P809-002/004 via P840-003 or P810-040	4k16	8
PVx50-104	BCASS1	Testprogram for P833-001/002 via P833-152 (with reference cassette)	4k16	8
PVx50-106	BMAGT1	Testprogram for P831-002/004/006 via formatter and P831-040	8k16	8
PVx50-109	BMAGT2	Testprogram for P831-002/004/006 via formatter and P831-060	8k16	8
PVx50-103	BDIOD1	Testprogram for P837-001/002 (DIOD testtool supplied)	4k16	8
		Datacommunication		
PVx50-112	BMA8A+C	Testprogram for P845-060 and P845-070	16k16	9,11 AMA8A: 12 AMA8C: 13
PVx50-111	BALCU	Testprogram for P846-060 and P846-070	16k16	9,11,12
PVx50-110	BSLCU2	Testprogram for P847-060	16k16	9,11,12
PVx50-117	BSLCU4	Testprogram for P847-070	16k16	9,11,12
PVx50-113	BLSM16	Testprogram for P844-060 or P844-070	16k16	9,11,13
PVx50-114	BV28CM	Testprogram for P844-110	16k16	9,11 14
PVx50-115	BHDLC	Testprogram for P847-100	16k16	9,11,12
PVx50-160	BHLVCU	Testprogram for P847-110	24k16	9,11,12
		Options		
PVx50-123	BBMMU1	Testprogram for memory management unit	32k16	2
PVx50-124	BBFPP1	Testprogram for P857-020	8k16	3,4
PVx50-146	REMMU1	Testprogram for the memory management unit part of the P858/9	32k16	3,4,5,9
PVx50-147	REPAF	Testprogram for a page fault trap and the handling of RTC/PW interrupt	32k16	3,4,5
PVx50-125	BPRTC1	Testprogram for P843-060	8k16	
PVx50-137	BATYPE	Testprogram for P841-101 via P852-023	4k16	1

Notes

1 Only P852
2 Only P857
3 Not P852
4 Not P856
5 Not P857
6 Not P858
7 Not P859
8 To run peripheral testprograms the RTC is not mandatory but is highly recommended
9 To run these testprograms a system console is required and it may be current loop or V24 interfaced
10 This testprogram runs only on multiplex channel. An I/O-processor is required
11 To run datacommunication testprograms the RTC is mandatory
12 P849-901 diagnostic box is required
13 2x P849-930 testtool is required
14 2x P849-925 testtool is required

Appendices

Appendix 1. List of notes

Note	Description
1	Mounting gear for 19" cabinets is supplied.
2	+5VM and +12VM denote special voltage for memory when a battery back up facility is used. When it is not used the +5VL and +5VM, resp. +12VL and +12VM are interconnected.
3	The configuration includes as standard a battery pack and its associated logic. Capacity 2 Ah for P854-300, 5Ah for P854-400, P859-400, P874-400 and P876-400, 2.5Ah for P871-300 and P874-300, charging time 48 h.
4	Another battery pack can optionally be added depending on the memory size. When mounted in a cabinet the ventilation unit P843-200 is mandatory, in other cases its use is recommended.
5	The +18V and -18V are unregulated.
8	Minimum size for P857 software PV280-100 is 48k words.
10	Every slave control unit and memory suitable for P851/3/4 can be combined with P870.
11	The TSBC card P870-570 is mandatory to use the hand held control panel with P870.
12	Optional battery back-up feature P843-005 can be added for some applications to maintain the the MOS memories.
14	Control units are delivered without cables/connectors for connection to the devices (except for floppy control units).
15	Control unit is designed to interface the Documation M200, M300 and M600 models.
17	A break lines cable P843-030 or P843-031 must be ordered if the control unit is connected to an IOP.
18	With 4 floppy drives the cable 5111 199 71020 (Euro-systems) or 5111 199 71970 (Belier-systems) is to be ordered.
19	For some applications an I/O processor P843-020, P843-120 or P851-020 is needed.
22	Several national keyboard lay-outs and character sets are available.
23	When connected to the end of the GP-bus a terminator P843-009 must be added.
26	Maximum power dissipation per cabinet: without fans 800W, with 2 fans 1200W and with 4 fans 1500W
28	Interrupt connection is done by back panel wiring. To make use of the serial coded interrupt feature of the bus, order chip nr 8709 013 00114 which can be optionally inserted on the card.
29	Necessary front panels are added to the system. Cabinet lay-out, power distribution and ventilation will be specified by the factory at configuration time, unless specific requirements are stated at the time of ordering. Added front panels, power distribution panels and ventilation units are separately charged.
30	Memory voltages are supplied by the logic voltages
31	A second PSUB1E and PSUM is optional
32	Consumption including full control panel
33	Consumption including extended control panel
34	Consumption including extended digital control panel
35	Maximally two equipment shelves P829-001 or two equipment shelves P829-005 may be connected to one system. Irrespective of the number of equipment shelves P829-001/005 maximally one streamer cartridge drive P829-010 and maximally one floppy disc drive P830-035 may be mounted in total in these shelves. Contrary to the Winchester disc drives, the streamer and floppy drives get their power from the basic system. Additional Winchester drive, streamer drive and floppy drive are field-installable. A floppy disc drive P830-035 or streamer drive P829-010 is mandatory for systems with Winchester as the only external storage device. The floppy disc or streamer is needed as a carrier of the MAS software and testprograms as well as for initial IPL of the system. Subsequent IPL will be from Winchester disc. Winchester and streamer will only be supported by MAS.
36	When the hand held control panel or the extended digital control panel is used with the P871 Basic system the Preset Address facility requires the TSBC P870-570.
37	This equipment is only supported by P854-400, P874-400 and P876-400 Basic systems.

Appendix 2. P800 Software support for P800 hardware

hardware items		software systems						
type-nr	description	SRTM2	BRTS	FOS	DOS	FRTS	DRTS	MAS
	central processing units							
P870	CPU + 4Kw RAM, 12K4 REPROM	‡	-	EM	-	-	-	-
P851	CPU + max. 32Kw RAM	‡	‡	‡	‡	‡	‡	-
P853	CPU + max. 32Kw RAM	‡	‡	‡	‡	‡	‡	-
P856	CPU + max. 32Kw RAM	‡	‡	‡	‡	‡	‡	-
P857	CPU + max. 128Kw RAM	32K	‡	32K	32K	‡	‡	‡
P858	CPU + max. 128Kw RAM	32K	‡	32K	32K	‡	‡	‡
P859	CPU + max. 512Kw RAM	32K	128K	32K	32K	128K	128K	‡
P854	CPU + max. 512Kw RAM	32K	128K	32K	32K	128K	128K	‡
P871	CPU + max. 512Kw RAM	32K	128K	32K	32K	128K	128K	‡
P874	CPU + max. 512Kw RAM	32K	128K	32K	32K	128K	128K	‡
P876	CPU + max. 512Kw RAM	32K	128K	32K	32K	128K	128K	‡
	system options							
	floating point processor	-	-	-	-	-	-	‡
	read only memory support	runt	-	dev	dev	-	-	-
	power failure/automatic restart	-	-	-	-	-	-	rel 8
	I/O processor	‡	‡	‡	‡	‡	‡	‡
	memory management unit	-	‡	-	-	‡	‡	‡
	non-disc environment	‡	‡	-	-	-	-	-
	high performance disc equipment							
P824-012	disc drive 2x2.7 Mb	-	-	-	‡	-	‡	‡
P824-014	disc drive 2x5.4 Mb	-	-	-	‡	-	‡	‡
P825-007	disc drive 40 Mb	-	-	-	‡	-	‡	‡
P825-008	disc drive 80 Mb	-	-	-	‡	-	‡	‡
P825-011	disc drive 64 Mb	-	-	-	-	-	-	‡
P825-012	disc drive 96 Mb	-	-	-	-	-	-	‡
P829-001	8" winchester disc drive	-	-	-	-	-	-	rel 8.10
P829-001	5.25" winchester disc drive	-	-	-	-	-	-	rel 8.12
	low performance disc equipment							
P830-006	floppy disc drive 0.25 Mb	‡	I,D	D	D	D	D	D
P830-015	floppy disc drive 0.25 Mb	‡	I,D	D	D	D	D	D
P830-025	floppy disc drive 1 Mb	-	I,D	S	D	S	D	D:rel 8
P830-035	floppy disc drive 1 Mb	-	I,D	S	D	S	D	D:rel 8
P827-001	mini fixed disc 6 Mb	-	-	S	D	S	S	-
	magnetic tape equipment							
P831-004	tape drive 800 bpi	-	‡	‡	‡	‡	‡	‡
P831-006	tape drive 1600 bpi	-	‡	‡	‡	‡	‡	‡
P833-002	cassette tape drive	‡	‡	‡	‡	‡	‡	‡
P829-010	streamer cartridge drive	-	-	-	-	-	-	rel 8.12

hardware items		software systems						
type-nr	description	SRTM2	BRTS	FOS	DOS	FRTS	DRTS	MAS
	unit record equipment							
P801-001	punched tape reader	↕	↕	↕	↕	↕	↕	↕
P803-001	tape punch	↕	↕	↕	↕	↕	↕	↕
P806-102	card reader	-	↕	↕	↕	↕	↕	↕
P809-002	line printer 200 lpm	↕	↕	↕	↕	↕	↕	↕
P809-003	line printer 300 lpm	↕	↕	↕	↕	↕	↕	↕
P809-004	line printer 400 lpm	↕	↕	↕	↕	↕	↕	↕
P809-006	line printer 600 lpm	↕	↕	↕	↕	↕	↕	↕
	V24 interface equipment							
P842-00x	character printer	↕	↕	↕	↕	↕	↕	↕
P817-00x	video display terminal	↕	↕	↕	↕	↕	↕	↕
P816-0xx	video display terminal	↕	↕	↕	↕	↕	↕	↕
P818-0xx	video display terminal	↕	↕	↕	↕	↕	↕	↕
P845-140	SCU2	↕	↕	↕	↕	↕	↕	↕
P845-145	ASCU4Z	-	↕	↕	↕	↕	↕	rel 8
P845-040	SCU	↕	↕	↕	↕	↕	↕	↕
	data communication equipment							
P845-160	SALCU-Z	↕	T	↕	↕	↕	↕	-
P845-170	SLCU-Z	-	T	-	-	-	-	rel 8
P845-100	HLCU-Z	-	T	↕	↕	↕	↕	T
P845-110	HLVCU-Z	-	T	-	-	-	-	rel 8
P847-060	SLCU2S	-	T	↕	↕	↕	↕	-
P847-070	SLCU4	-	T	↕	↕	↕	↕	-
P847-100	HLCU1	-	T	↕	↕	↕	↕	T
P847-110	HLVCU-8	-	T	-	-	-	-	rel 8
P846-060	ALCU2	-	T	↕	↕	↕	↕	-
P846-070	ALCU4	-	T	↕	↕	↕	↕	-
P845-060	AMA8A	-	T	↕	↕	↕	↕	↕
P845-070	AMA8C	-	T	↕	↕	↕	↕	-
P845-180	AMA4Z	-	-	-	-	-	-	rel 8

explanation of symbols used

↕	supported	runt	runtime environment supported
-	not supported	dev	development environment supported
NA	not applicable	I	supported as IPL device only
rel x	supported by release x	D	supported as data carrier only
32K,128K	max. memory size supported	S	supported as system device
EM	supported with external memory	T	supported only with TMS

Index

Type number	Description	Appl.system P85.	Appl.system P87.	Class	Page
P809-002	Matrix line printer 200 lpm			B	10
P809-004	Matrix line printer 400 lpm			B*	10
P816-010	Video display terminal, 12" screen, white phosphor			A	10
P816-020	Video display terminal, 12" screen, white phosphor, block mode			A	10
P818-010	Video display terminal, 15" screen, white phosphor			A	10
P818-020	Video display terminal, 15" screen, white phosphor, block mode			A	10
P818-051	Alphanumeric keyboard for P816-010 and P818-010			A	11
P818-052	Alphanumeric keyboard for P816-020 and P818-020			A	11
P818-100	Plug-in current-loop interface for P816 and P818			A	11
P816-120	Mounting stand P816			A	11
P818-120	Mounting stand P818			A	11
P824-040	Control unit for up to 2 moving head disc drives P824-014 (CDD)	7 9		B*	11
P824-100	Cartridge for P824-012/014			B	11
P824-140	Control unit for up to 2 moving head disc drives P824-012/014 (CDDZ)	1 4	1 4 6	B	11
P825-008/03	Moving head cartridge disc drive 80M			B	11
P825-008/04	Moving head cartridge disc drive 80M			B	11
P825-008/13	Moving head cartridge disc drive 80M			B	11
P825-008/14	Moving head cartridge disc drive 80M			B	11
P825-011/04	Moving head disc drive 64M	4	4 6	A	12
P825-011/14	Moving head disc drive 64M	4	4 6	A	12
P825-012/04	Moving head disc drive 96M	4	4 6	A	12
P825-012/14	Moving head disc drive 96M	4	4 6	A	12
P825-040	Control unit for moving head cartridge disc drives P825-008 (CUBIGD)	7 9		B*	12
P825-041	Control unit for moving head disc drives P825-008 (BIGD2)	7 9		B*	12
P825-141	Control unit for moving head disc drives P825-011/012 (DFP-C)	4	4 6	A	12
P825-200	Cartridge for P825-008			A*	11
P825-201	Cartridge for P825-011/012			A	12
P829-001	Equipment shelf with one 8" Winchester fixed disc drive		1 4 6	A	12
P829-002	8" Winchester fixed disc drive		1 4 6	A	13
P829-005/01	Equipment shelf with one 5.25" Winchester fixed disc drive		1 4 6	A	12
P829-005/02	Equipment shelf with one 5.25" Winchester fixed disc drive		1 4 6	A	12
P829-005/11	Equipment shelf with one 5.25" Winchester fixed disc drive		1 4 6	A	12
P829-006	5.25" Winchester fixed disc drive		1 4 6	A	13
P829-010	Streamer cartridge drive		1 4 6	A	14
P829-100	Streamer cartridge			A	14
P829-140	Control unit for up to two 8" Winchester fixed disc drives (WDC)		1 4 6	A	13
P829-141	Control unit for up to two 5.25" Winchester fixed disc drives (WDD)		1 4 6	A	13
P829-160	Control unit for streamer cartridge drive P829-010 (WJA)		1 4 6	A	14
P830-010	Equipment shelf for up to 2 floppy disc drives P830-015/035	1 4 7 9	1 4 6	A	13
P830-015	Floppy disc drive, 0.25 Mbyte + doorlock			A	13
P830-035/01	Floppy disc drive, 1 Mbyte + doorlock			A	13
P830-035/02	Floppy disc drive, 1 Mbyte + doorlock			A	13
P830-035/11	Floppy disc drive, 1 Mbyte + doorlock			A	13
P830-050/01	Control unit for floppy disc drives P830-015/035 (F1MB)	7 9		B*	13
P830-050/05	Control unit for floppy disc drives P830-015/035 (F1MB)	7 9		B*	13
P830-100	10 diskettes for P830-015			A	13
P830-150	Control unit for floppy disc drives P830-015/035 (F1MZ)	1 4	1 4 6	A	13
P830-200	10 diskettes for P830-035			A	13
P831-006/01	Magnetic tape unit, 1600 bpi			B*	14
P831-006/11	Magnetic tape unit, 1600 bpi			B*	14
P831-030	Formatter for up to 4 magnetic tape units P831-006			B*	14
P831-060	Control unit for magnetic tape units P831-002/004/006 (MTCU)	7 9		B	14
P833-100	Tape cassette for P833-002			B*	14

Type number	Description	Appl.system P85.	P87.	Class	Page
P837-002	Digital input/output control unit (DIOD-2)		7 9	B*	16
P840-003	Control unit CR/LP (MCU2)		7 9	B*	10
P840-103	Control unit CR/LP (CRLPZ)	1 4	1 4 6	A	10
P840-141	Control unit PTR/PTP (TRPZ)	1 4	1 4 6	A*	9
P843-001	Equipment shelf	1 4	7 9 1 4 6	A	16
P843-009	Terminator			A	16
P843-012	Programming tool for P851-010/012	1 4	1 4 6	A	5
P843-015	Set of 10 PUC I connectors			A	17
P843-016	Set of 5 PUC II connectors			A	17
P843-024	Set of 10 Euro-card connectors (female), 2*36 pins (wrapped version)			A	17
P843-030	Break line cable, 5 m			A	16
P843-031	Extension break lines cable, 5 m			A	16
P843-038	Cable 7.5m for connection of a V24 interface to P857/9 CPU		7 9	B*	17
P843-040	Cable 7.5m for connection of a display to P856/7		7 9	B*	17
P843-042	Cable 7.5m for connection of a display to V24 Euro CU (SCUZ)	1 4	1 4 6	A	17
P843-043	Cable 5m for connection of a display to the modem panel (current loop)			A	17
P843-044	Cable 7.5m for connection of a display to current loop Euro CU (SCUZ)	1 4	1 4 6	A	17
P843-045	Cable 5m for connection of a display to the modem panel (V24)			A	17
P843-047	Cable 7.5m for connection of a display to V24 Euro CU (ASCU4Z)	1 4	1 4 6	A	17
P843-048	Cable 7.5m for connection of V24 terminal to serial Euro CU (ASCU4Z)	1 4	1 4 6	A	17
P843-050	Cable 7.5m for serial Euro CU (ASCU4Z) open ended (current loop)	1 4	1 4 6	A	17
P843-051	Cable 7.5m for connection of a display to V24 Euro CU (P854/74/76)	4	4 6	A	17
P843-053	General purpose initial program loader	1		B	7
P843-054	General purpose initial program loader	1		B	7
P843-060	Programmable real time clock (PRTC)		7 9	B*	7
P843-107	Translator card (IOTZ)	1		B	8
P843-115	General purpose bus cable with connectors, 3 m			A	16
P843-117	Bus translator (TUGP)	4	1 4 6	A	8
P843-120	Single I/O-procesoor (IOPZR)	4	1 4 6	A	6
P843-160	Programmable real time clock (RTCZ)	1 4	1 4 6	A	7
P843-200	Ventilation unit	4	1 4	A	8
P843-350	Extension card for testing single-Euro-format cards outside the rack	1		B*	18
P843-351	Extension card for testing double-Euro-format cards outside the rack	1 4	1 4 6	B*	18
P843-352	Extension card for power supply regulator card	1		B*	18
P843-400	Basic power supply module (PSUB1E)	4	4 6	A	8
P843-402	Memory power supply module (PSUM)	4	4 6	A	8
P843-500	Hand held control panel (HHCP)	1 4	1 4 6	A	7
P843-501	Basic system front cover 4U	4	1 4 6	A	7
P843-502	Logic rack front cover 6U	4	1 4 6	A	7
P843-503	Basic system front cover 4U	4	1 4 6	A	7
P843-504	Logic rack front cover 6U	4	1 4 6	A	7
P843-510	Digital extended control panel (FRCP)	4	1 4 6	A	8
P843-528	Memory module 128k21, 450 nsec		7 9	B*	6
P843-529	Memory module 128k21, 350 nsec		7 9	B*	6
P843-550	Cable 7m between basic system front cover and hand held control panel	1 4	1 4 6	A	8
P843-551	Cable 3m between basic system front cover and hand held control panel	1 4	1 4 6	A	8
P843-552	Cable 3m between CPU and hand held control panel	4	1 4 6	A	8
P843-608	Memory module 128k21, 350 nsec	4	1 4 6	A	5
P844-016	Memory module 8k16	1 4		A	5
P845-060	Asynchronous medium speed line multiplexor (AMA8A)		7 9	B*	16
P845-070	Asynchronous medium speed line multiplexor (AMA8C)		7 9	B*	16
P845-110	Control unit for high level data link procedure (HLVCUZ)	1 4	1 4 6	A	15
P845-140	Control unit for serial data transfer (SCUZ)	1 4	1 4 6	A	11
P845-145	Control unit for serial data transfer (ASCU4Z)	1 4	1 4 6	A	11
P845-160	Control unit for 1 synchronous or 1 asynchronous line (SALCUZ)	1 4	1 4 6	A	15
P845-170	Control unit for 1 synchronous line (SLCUZ)	1 4	1 4 6	A	15

Type number	Description	Appl.system P85.	Appl.system P87.	Class	Page
P845-180	Asynchronous medium speed line multiplexor (AMA4Z)	1 4	1 4 6	A	15
P846-070	Multiple control unit (ALCU4)	7 9		B*	15
P847-060	Multiple control unit (SLCU2S)	7 9		B*	15
P847-110	Control unit for high level data link procedure (HLVCUB)	7 9		B*	15
P849-029	Modem panel			A	17
P849-042	Power distribution panel 14A			A	18
P849-043	Power distribution panel 25A			A	18
P849-046	Front panel, height 1U			A	18
P849-047	Front panel, height 3U			A	18
P849-048	Front panel, height 5U			A	18
P849-049	Front panel, height 7U			A	18
P849-070	Ventilation unit 2 fans			A	18
P849-071	Ventilation unit 4 fans			A	18
P849-076	Basic 19" cabinet, 36 units, non-equipped			A	18
P849-077	Basic 19" cabinet, 36 units			A	18
P849-078	Pedestal for 19" cabinet			A	18
P849-176	Extension 19" cabinet, 36 units, non-equipped			A	18
P849-177	Extension 19" cabinet, 36 units			A	18
P849-336	Cable 5m between modem panel P849-029 and 1 V24 terminal	7 9		B*	17
P849-346	Cable 5m between modem panel P849-029 and V24 modem	7 9		B*	17
P849-356	Cable 7.5m between line CU (SALCUZ/HLVCUZ/SLCUZ) and V24 terminal	4	1 4 6	A	17
P849-357	Cable 7.5m between line CU (SCUZ) and V24 terminal	1 4	1 4 6	A	17
P849-358	Cable 7.5m between line CU (SCUZ) and CL terminal	1 4	1 4 6	A	17
P849-359	Cable 1.5m between modem panel and V24 Euro CU (ASCU4Z)	1 4	1 4 6	A	17
P849-360	Cable 1.5m between modem panel and V24 Euro CU (SALCUZ/HLVCUZ/SLCUZ)	1 4	1 4 6	A	17
P849-514	Cable 7.5m between line CU (SALCUZ/HLCUZ) and V24 modem	1 4	1 4 6	A	17
P849-524	Cable 3m between modem panel P849-029 and line control units	7 9		B*	17
P849-624	Cable 3m between modem panel P849-029 and line control unit P845-060	7 9		B*	17
P849-724	Cable 3m between modem panel P849-029 and line control unit P845-070	7 9		B*	17
P849-734	Cable 7.5m between line control unit P845-070 and 4 external units	7 9		B*	17
P851-004	Memory module 4k16	1		B	5
P851-005	Memory module 8k16	1		B	5
P851-010	Memory card for up to 16k16 EPROM chips	1 4	1 4 6	B*	5
P851-012	Memory card for up to 32k16 EPROM chips	1 4	1 4 6	A	5
P851-016	Memory module 16k16	1 4		B	5
P851-017	Memory module 32k16	1 4		B	5
P851-020	I/O-processor (IOPZ)	1		B	6
P851-046	Battery pack	1		B	8
P851-048	Central processor front cover	1		B	7
P851-049	Central processor cover plate	1		B	7
P851-050	Cable support rack and panel	1 4	1 4	A	8
P851-100/01	P851 Basic system, 12 slots+minipanel	1		B	3
P851-100/11	P851 Basic system, 12 slots+full panel	1		B	3
P851-200/11	P851 Basic system, 5 slots+minipanel+filter	1		B*	3
P851-200/12	P851 Basic system, 5 slots+HHP+filter	1		B*	3
P851-200/41	P851 Basic system, 5 slots+minipanel+filter+battery	1		B*	3
P851-200/42	P851 Basic system, 5 slots+HHP+filter+battery	1		B*	3
P854-020	Floating point processor (FPPE)	4	4 6	A	7
P854-300/41	P854 Basic system, filter+battery	4		B*	3
P854-300/51	P854 Basic system, filter+2 batteries	4		B*	3
P854-400	P854 Basic system,	4		B*	3
P857-020	Floating point processor (FPP)	7 9		B*	7
P857-400	P857 Basic system, 8 slots	7		B*	4
P857-500	P857 Basic system, 15 slots	7		B*	4
P859-400	P859 Basic system	9		B*	4

Type number	Description	Appl.system P85.	P87.	Class	Page
P870-001/01	P870 Single board computer (SBC)			A	9
P870-001/02	P870 Single board computer (SBC)			A	9
P870-256/11	P870 Basic system, 5 slots+filter			A	4
P870-256/41	P870 Basic system, 5 slots+filter+battery			A	4
P870-356/11	P870 Basic system, 11 slots+filter			A	4
P870-356/41	P870 Basic system, 11 slots+filter+battery			A	4
P870-570	SBC Testtool (TSBC)	1		A	9
P871-300	P871 Basic system	1		A	4
P874-300	P874 Basic system		4	A	4
P874-400	P874 Basic system		4	A	4
P876-400	P876 Basic system		6	A	4

Scientific & Industrial Equipment Division
Industrial Automation Data Processing Modules (IDP)
P800 Price List — January 1985

Prices in Hfl. valid from 85-01-01 on. Article code : 733

Typenumber	Description	B.J.P.	Basic
P809-004	Matrix line printer 400 lpm	17.500,00	34.100,00
P816-010	Video display terminal, 12" screen, white phosphor	2.270,00	4.420,00
P816-020	Video display terminal, 12" screen, white phosphor, block mode	2.340,00	4.560,00
P818-010	Video display terminal, 15" screen, white phosphor	2.340,00	4.560,00
P818-020	Video display terminal, 15" screen, white phosphor, block mode	2.410,00	4.690,00
P818-051	Alphanumeric keyboard for P816-010 and P818-010	413,00	805,00
P818-052	Alphanumeric keyboard for P816-020 and P818-020	478,00	932,00
P818-100	Plug-in current-loop interface for P816 and P818	401,00	781,00
P816-120	Mounting stand P816	177,00	345,00
P818-120	Mounting stand P818	177,00	345,00
P824-040	Control unit for up to 2 moving head disc drives P824-014 (CDD)	6.060,00	11.800,00
P824-100	Cartridge for P824-012/014	416,00	810,00
P824-140	Control unit for up to 2 moving head disc drives P824-012/014 (CDDZ)	5.790,00	11.200,00
P825-008/03	Moving head cartridge disc drive 80M	30.700,00	59.800,00
P825-008/04	Moving head cartridge disc drive 80M	30.700,00	59.800,00
P825-008/13	Moving head cartridge disc drive 80M	30.700,00	59.800,00
P825-008/14	Moving head cartridge disc drive 80M	30.700,00	59.800,00
P825-011/04	Moving head disc drive 64M	32.000,00	62.400,00
P825-011/14	Moving head disc drive 64M	32.000,00	62.400,00
P825-012/04	Moving head disc drive 96M	33.300,00	64.900,00
P825-012/14	Moving head disc drive 96M	33.300,00	64.900,00
P825-040	Control unit for moving head cartridge disc drives P825-008 (CUBIGD)	16.500,00	32.100,00
P825-041	Control unit for moving head disc drives P825-008 (BIGD2)	17.300,00	33.700,00
P825-141	Control unit for moving head disc drives P825-011/012 (DFP-C)	9.200,00	17.900,00
P825-200	Cartridge for P825-008	2.180,00	4.250,00
P825-201	Cartridge for P825-011/012	920,00	1.790,00
P829-001	Equipment shelf with one 8" Winchester fixed disc drive	14.000,00	27.300,00
P829-002	8" Winchester fixed disc drive	11.400,00	22.200,00
P829-005/01	Equipment shelf with one 5.25" Winchester fixed disc drive	7.890,00	15.300,00
P829-005/02	Equipment shelf with one 5.25" Winchester fixed disc drive	7.890,00	15.300,00
P829-005/11	Equipment shelf with one 5.25" Winchester fixed disc drive	7.890,00	15.300,00
P829-006	5.25" Winchester fixed disc drive	3.730,00	7.270,00
P829-010	Streamer cartridge drive	4.380,00	8.540,00
P829-100	Streamer cartridge	330,00	643,00
P829-140	Control unit for up to two 8" Winchester fixed disc drives (WDC)	4.380,00	8.540,00
P829-141	Control unit for up to two 5.25" Winchester fixed disc drives (WDD)	3.510,00	6.840,00
P829-160	Control unit for streamer cartridge drive P829-010 (WJA)	3.510,00	6.840,00
P830-010	Equipment shelf for up to 2 floppy disc drives P830-015/035	2.110,00	4.110,00
P830-015	Floppy disc drive, 0.25 Mbyte + doorlock	2.330,00	4.540,00
P830-035/01	Floppy disc drive, 1 Mbyte + doorlock	3.070,00	5.980,00
P830-035/02	Floppy disc drive, 1 Mbyte + doorlock	3.070,00	5.980,00
P830-035/11	Floppy disc drive, 1 Mbyte + doorlock	3.070,00	5.980,00
P830-050/01	Control unit for floppy disc drives P830-015/035 (F1MB)	2.640,00	5.140,00
P830-050/05	Control unit for floppy disc drives P830-015/035 (F1MB)	2.640,00	5.140,00
P830-100	10 diskettes for P830-015	177,00	345,00
P830-150	Control unit for floppy disc drives P830-015/035 (F1MZ)	1.850,00	3.600,00
P830-200	10 diskettes for P830-035	219,00	427,00
P831-006/01	Magnetic tape unit, 1600 bpi	19.600,00	38.200,00
P831-006/11	Magnetic tape unit, 1600 bpi	19.600,00	38.200,00
P831-030	Formatter for up to 4 magnetic tape units P831-006	13.200,00	25.700,00
P831-060	Control unit for magnetic tape units P831-002/004/006 (MTCU)	1.510,00	2.940,00
P833-100	Tape cassette for P833-002	22,00	43,00
P837-002	Digital input/output control unit (DIOD-2)	1.390,00	2.710,00
P840-003	Control unit CR/LP (MCU2)	1.480,00	2.880,00
P840-103	Control unit CR/LP (CRLPZ)	685,00	1.330,00

Prices in HFl. valid from 85-01-01 on. Article code : 733

Typenumber	Description	B.J.P.	Basic
P843-001	Equipment shelf	5.000,00	9.750,00
P843-009	Terminator	181,00	352,00
P843-012	Programming tool for P851-010/012	1.320,00	2.570,00
P843-015	Set of 10 PUC I connectors	*,**	*,**
P843-016	Set of 5 PUC II connectors	*,**	*,**
P843-024	Set of 10 Euro-card connectors (female), 2*36 pins (wrapped version)	351,00	684,00
P843-030	Break line cable, 5 m	162,00	315,00
P843-031	Extension break lines cable, 5 m	162,00	315,00
P843-038	Cable 7.5m for connection of a V24 interface to P857/9 CPU	269,00	524,00
P843-040	Cable 7.5m for connection of a display to P856/7	168,00	327,00
P843-042	Cable 7.5m for connection of a display to V24 Euro CU (SCUZ)	168,00	327,00
P843-043	Cable 5m for connection of a display to the modem panel (current loop)	168,00	327,00
P843-044	Cable 7.5m for connection of a display to current loop Euro CU (SCUZ)	168,00	327,00
P843-045	Cable 5m for connection of a display to the modem panel (V24)	307,00	598,00
P843-047	Cable 7.5m for connection of a display to V24 Euro CU (ASCU4Z)	242,00	471,00
P843-048	Cable 7.5m for connection of V24 terminal to serial Euro CU (ASCU4Z)	374,00	729,00
P843-050	Cable 7.5m for serial Euro CU (ASCU4Z) open ended (current loop)	177,00	345,00
P843-051	Cable 7.5m for connection of a display to V24 Euro CU (P854/74/76)	374,00	729,00
P843-053	General purpose initial program loader	15,.2	29,00
P843-054	General purpose initial program loader	19,.2	37,00
P843-060	Programmable real time clock (PRTC)	979,00	1.900,00
P843-107	Translator card (IOTZ)	935,00	1.820,00
P843-115	General purpose bus cable with connectors, 3 m	544,00	1.060,00
P843-117	Bus translator (TUGP)	870,00	1.690,00
P843-120	Single I/O-procesoor (IOPZR)	1.300,00	2.530,00
P843-160	Programmable real time clock (RTCZ)	548,00	1.060,00
P843-200	Ventilation unit	746,00	1.450,00
P843-350	Extension card for testing single-Euro-format cards outside the rack	326,00	635,00
P843-351	Extension card for testing double-Euro-format cards outside the rack	387,00	754,00
P843-352	Extension card for power supply regulator card	242,00	471,00
P843-400	Basic power supply module (PSUB1E)	2.770,00	5.400,00
P843-402	Memory power supply module (PSUM)	1.160,00	2.260,00
P843-500	Hand held control panel (HHCP)	886,00	1.720,00
P843-501	Basic system front cover 4U	412,00	803,00
P843-502	Logic rack front cover 6U	237,00	462,00
P843-503	Basic system front cover 4U	206,00	401,00
P843-504	Logic rack front cover 6U	*,**	*,**
P843-510	Digital extended control panel (FRCP)	1.650,00	3.210,00
P843-528	Memory module 128k21, 450 nsec	10.500,00	20.475,00
P843-529	Memory module 128k21, 350 nsec	15.700,00	30.600,00
P843-550	Cable 7m between basic system front cover and hand held control panel	177,00	345,00
P843-551	Cable 3m between basic system front cover and hand held control panel	177,00	345,00
P843-552	Cable 3m between CPU and hand held control panel	177,00	345,00
P843-608	Memory module 128k21, 350 nsec	5.260,00	10.200,00
P844-016	Memory module 8k16	2.110,00	4.110,00
P845-060	Asynchronous medium speed line multiplexor (AMA8A)	3.860,00	7.520,00
P845-070	Asynchronous medium speed line multiplexor (AMA8C)	2.370,00	4.620,00
P845-110	Control unit for high level data link procedure (HLVCUZ)	1.750,00	3.410,00
P845-140	Control unit for serial data transfer (SCUZ)	492,00	959,00
P845-145	Control unit for serial data transfer (ASCU4Z)	1.980,00	3.860,00
P845-160	Control unit for 1 synchronous or 1 asynchronous line (SALCUZ)	1.350,00	2.630,00
P845-170	Control unit for 1 synchronous line (SLCUZ)	2.120,00	4.130,00
P845-180	Asynchronous medium speed line multiplexor (AMA4Z)	*,**	*,**
P846-070	Multiple control unit (ALCU4)	2.030,00	3.950,00
P847-060	Multiple control unit (SLCU2S)	3.120,00	6.080,00

Prices in HFl. valid from 85-01-01 on. Article code : 733

Typenumber	Description	B.J.P.	Basic
P849-029	Modem panel	162,00	315,00
P849-042	Power distribution panel 14A	592,00	1.150,00
P849-043	Power distribution panel 25A	1.210,00	2.350,00
P849-046	Front panel, height 1U	55,00	107,00
P849-047	Front panel, height 3U	55,00	107,00
P849-048	Front panel, height 5U	78,00	152,00
P849-049	Front panel, height 7U	78,00	152,00
P849-070	Ventilation unit 2 fans	452,00	881,00
P849-071	Ventilation unit 4 fans	632,00	1.230,00
P849-076	Basic 19" cabinet, 36 units, non-equipped	3.950,00	7.700,00
P849-077	Basic 19" cabinet, 36 units	5.260,00	10.200,00
P849-078	Pedestal for 19" cabinet	190,00	370,00
P849-176	Extension 19" cabinet, 36 units, non-equipped	3.100,00	6.040,00
P849-177	Extension 19" cabinet, 36 units	4.260,00	8.300,00
P849-336	Cable 5m between modem panel P849-029 and 1 V24 terminal	426,00	830,00
P849-346	Cable 5m between modem panel P849-029 and V24 modem	382,00	744,00
P849-356	Cable 7.5m between line CU (SALCUZ/HLVCUZ/SLCUZ) and V24 terminal	504,00	982,00
P849-357	Cable 7.5m between line CU (SCUZ) and V24 terminal	460,00	897,00
P849-358	Cable 7.5m between line CU (SCUZ) and CL terminal	370,00	721,00
P849-359	Cable 1.5m between modem panel and V24 Euro CU (ASCU4Z)	527,00	1.020,00
P849-360	Cable 1.5m between modem panel and V24 Euro CU (SALCUZ/HLVCUZ/SLCUZ)	552,00	1.070,00
P849-514	Cable 7.5m between line CU (SALCUZ/HLCUZ) and V24 modem	355,00	692,00
P849-524	Cable 3m between modem panel P849-029 and line control units	330,00	643,00
P849-624	Cable 3m between modem panel P849-029 and line control unit P845-060	1.070,00	2.080,00
P849-724	Cable 3m between modem panel P849-029 and line control unit P845-070	395,00	770,00
P849-734	Cable 7.5m between line control unit P845-070 and 4 external units	307,00	598,00
P851-004	Memory module 4k16	754,00	1.470,00
P851-005	Memory module 8k16	1.010,00	1.960,00
P851-010	Memory card for up to 16k16 EPROM chips	536,00	1.040,00
P851-012	Memory card for up to 32k16 EPROM chips	907,00	1.760,00
P851-016	Memory module 16k16	1.250,00	2.430,00
P851-017	Memory module 32k16	2.150,00	4.190,00
P851-020	I/O-processor (IOPZ)	567,00	1.100,00
P851-046	Battery pack	464,00	904,00
P851-048	Central processor front cover	105,00	204,00
P851-049	Central processor cover plate	59,00	115,00
P851-050	Cable support rack and panel	120,00	234,00
P851-100/01	P851 Basic system, 12 slots+minipanel	7.080,00	13.800,00
P851-100/11	P851 Basic system, 12 slots+full panel	7.080,00	13.800,00
P851-200/11	P851 Basic system, 5 slots+minipanel+filter	5.720,00	3.800,00
P851-200/12	P851 Basic system, 5 slots+HHP+filter	5.720,00	3.800,00
P851-200/41	P851 Basic system, 5 slots+minipanel+filter+battery	5.720,00	3.800,00
P851-200/42	P851 Basic system, 5 slots+HHP+filter+battery	5.720,00	3.800,00
P854-020	Floating point processor (FPPE)	3.000,00	5.850,00
P854-300/41	P854 Basic system, filter+battery	11.000,00	21.400,00
P854-300/51	P854 Basic system, filter+2 batteries	11.000,00	21.400,00
P854-400	P854 Basic system,	15.400,00	30.000,00
P857-020	Floating point processor (FPP)	3.400,00	6.630,00
P857-400	P857 Basic system, 8 slots	20.400,00	39.700,00
P857-500	P857 Basic system, 15 slots	29.900,00	58.300,00
P859-400	P859 Basic system	25.900,00	50.500,00
P870-001/01	P870 Single board computer (SBC)	2.010,00	3.910,00
P870-001/02	P870 Single board computer (SBC)	2.010,00	3.910,00
P870-256/11	P870 Basic system, 5 slots+filter	6.620,00	12.900,00
P870-256/41	P870 Basic system, 5 slots+filter+battery	6.620,00	12.900,00

Prices in HFl. valid from 85-01-01 on. Article code : 733

Typenumber	Description	B.J.P.	Basic
P870-356/41	P870 Basic system, 11 slots+filter+battery	7.650,00	14.900,00
P870-570	SBC Testtool (TSBC)	1.840,00	3.580,00
P871-300	P871 Basic system	7.890,00	15.300,00
P874-300	P874 Basic system	11.400,00	22.200,00
P874-400	P874 Basic system	15.800,00	30.800,00
P876-400	P876 Basic system	28.900,00	56.300,00