P800 CATALOGUE

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P800 Catalogue

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Preface

In the chapters 1 through 7 of this P800 catalogue all available P800 hardware items are listed with as many characteristics as are necessary to configure P800 systems. Items mentioned in these seven chapters are divided in two categories or "classes": class A and class B.

Items belonging to class A are regular items which also occur in price-lists and leadtimelists. A regular production of these items takes place, so as to guarantee short leadtimes and competitive pricing. Where necessary and feasible a commercial stock is maintained.

Items belonging to class B are not produced regularly, either because the amount needed per year has become relatively low, or because they are in existence for so long already that certain components have become difficult to acquire. Orders on class B items received before January 1st, May 1st or September 1st will result in a production batch which will be delivered with a minimum leadtime of six months from the relevant date.

In some cases the classification A or B is extended by 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; the asterix announces its End of Commercial Life.

Also the class X occurs. Items in this class are new items, which have not yet been officially announced, but which will become available shortly after the present catalogue has become valid. Announcement will be done via a Product Marketing Information letter.

Summarizing: class A : regular catalogue items, available with lead-times between 1 and 3 months;
class A*: as class A, but to be moved to class B or B* per January 1st next;
class B : items only produced three times a year depending on orderintake;
class B*: as class B, but to be removed from the catalogue per January 1st next;
class X : items not yet available but to be announced within one year.

All items mentioned in the chapters 1 through 7 are also listed in their numerical order in the Index, which has been added to this catalogue.
For most items, wherever applicable, it is indicated in which system they can be used. Under the heading "Appl.syst. 5" 1 stands for P851; under the heading "Appl.syst. P87...." 0 stands for P870, 1 stands for P871 and PML71, 4 stands for P874 and PML74, and 6 stands for P876 and PML76.
Orders on P800-items or -products, which are not mentioned in this catalogue, will not be accepted unless a special agreement with the customer exists.

P800 Catalogue

The general form of P800 hardware typenumbers is "P8xx-yyy/zz". The group "P8xx" indicates the type of product, e.g. the typenumber for all Winchester disc drives starts with "P829".
The group "-yyy" always occurs and is a further definition of the item. The group "/zz" is not always used. When it occurs it defines variations of the same hardware item and is necessary to define the item unambiguously.
P800 equipment is delivered standardly for 220V-50Hz mains connection, unless specified otherwise.

P800 software is divided in four classes. Class 1 contains standard software products, listed in chapter 8 of this catalogue. For these products TDS accepts obligations with respect to delivery, maintenance and support. Class 1 is divided in two subclasses: class 1a, containing current products for which active 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 TDS 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. TDS accepts no responsibilities with respect to maintenance and support.

Class 4 contains user programs. On request TDS provides a list of these programs. TDS does not distribute these programs and does not accept any obligations.

In chapter 9 a list of available test software is given.

In chapter 8 and 9 hardware items are mentioned which can no longer be delivered. Whether a certain item is available or not and under which conditions it can be acquired is to be checked in chapters 1 through 8.

Although this catalogue has been prepared with the 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 highly appreciated.

Chapter 1. P800 Basic Systems

CPU characteristics

In the P800-series several CPU's are known. A CPU forms ususally 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 (51 stands for P851, 70 for P870, 71 for P871 and PML71, 74 for P874 and PML74, and 76 for P876 and PML76).

	51	70	71	74	76
P800 standard instruction set	x	x	x	x	x
move instructions, extended addressing instructions			x	x	x
bit-handling instructions		x	x	x	x
string-handling instructions			x	x	x
interface for floating point processor (FPP)				x	x
8 kbytes of cache memory					x
logical addressing for up to 32k 16-bit words	x	x	x	x	x
physical addressing for up to 512k 16-bit words				x	
physical addressing for up to 8M 16-bit words					x
number of interrupt lines	16	12	12	28	28
number of serial encoded interrupts	-	61	61	60	60
integrated I/O processor with 15 subchannels *)				x	
memory management unit allowing addressing beyond 32k, dynamic relocation and memory protection			x	x	x
direct access (rd/wr) for up to 255 external registers					x
direct access (rd/wr) for up to 243 external registers		x	x		
direct access (rd/wr) for up to 224 external registers				x	
integrated V24 serial interface		x		x	
general purpose initial program loader	x		x	x	x
power failure/automatic restart	x	x	x	x	x
real time clock, line frequency	x	x	x	x	x
DMA-facility	x	x	x	x	x
serial interface for control panel			x	x	x
16 hardware registers, 14 of which are programmable	x	x	x	x	x
general purpose bus, simplified (GPBS)	x				
general purpose bus, unified (UPL)		x	x	x	x
microdiagnostic facility	x		x	x	x
double Eurocard format (160 x 233,4 mm)	x	x	x	x	x
number of cards	1	1	1	3	5

*) break level 0 is used for FPP

Basic Systems

In the P800-series of computers "Basic Systems" have been defined.
A basic system consists of

- a mounting box (rack) with a certain number of slots in which memory cards and control units can be inserted;
- an integrated power supply unit;
- a control panel and/or control panel interface;
- a CPU-card or CPU-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 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.
The basic systems PML71, PML74 and PML76 are delivered in a freestanding cabinet. The other basic systems are delivered with mounting gear for standard 19" cabinets.
The characteristics of the P800 basic systems are given in three tables. In table 1 the typenumbers to be used for ordering and a short description can be found. If apart from the typenumbers any models are mentioned only these models can be ordered. Table 2 indicates which racks, resp. cabinets 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.
Wherever in the following descriptions peripheral equipment is mentioned the reader is referred to chapter 5 for full characteristics.

Table 1. **Typenumbers and available systems**

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
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 model: P870-x56 incl. filter and battery	A
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 ventilation unit is mandatory if the system is mounted in a cabinet, otherwise it is strongly recommended.	A

Type number	Description	Class
P871-500	PML71 Basic System with 8 free general purpose slots incl. free standing cabinet, CP1BF-cpu, basic power supply with battery pack, I/O-processor, 1M/8" floppy disc drive + CU.	A
P871-502	PML71 Basic System with 7 free general purpose slots incl. free standing cabinet, CP1BF-cpu, basic power supply with battery pack, I/O-processor, 1M/8" floppy disc drive + CU, 5.25" winchester disc drive + CU.	A
P871-503	PML71 Basic System with 6 free general purpose slots incl. free standing cabinet, CP1BF-cpu, basic power supply with battery pack, I/O-processor, 1M/8" floppy disc drive + CU, 5.25" winchester disc drive + CU, 20M/8" streamer cartridge drive + CU.	A
P871-504	PML71 Basic System with 8 free general purpose slots incl. free standing cabinet, CP1BF-cpu, basic power supply with battery pack, 5.25" winchester disc drive + CU, 20M/8" streamer cartridge drive + CU.	A
models:	P871-50x/10 incl. 26Mb unformatted winchester disc drive P871-50x/20 incl. 53Mb unformatted winchester disc drive	
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 PSUM1, battery back-up, filter board PSU9B, ventilation unit, control panel interface for either hand held control panel or extended digital control panel, facility for connection of winchester disc drives.	A

Type number	Description	Class
P874-500	PML74 Basic System with 7 free general purpose slots incl. free standing cabinet, P857E-cpu, basic power supply with battery pack, integrated I/O-processor, 1M/8" floppy disc drive + CU.	A
P874-502	PML74 Basic System with 6 free general purpose slots incl. free standing cabinet, P857E-cpu, basic power supply with battery pack, integrated I/O-processor, 1M/8" floppy disc drive + CU, 5.25" winchester disc drive + CU.	A
P874-503	PML74 Basic System with 5 free general purpose slots incl. free standing cabinet, P857E-cpu, basic power supply with battery pack, integrated I/O-processor, 1M/8" floppy disc drive + CU, 5.25" winchester disc drive + CU, 20M/8" streamer cartridge drive + CU.	A
P874-504	PML74 Basic System with 6 free general purpose slots incl. free standing cabinet, P857E-cpu, basic power supply with battery pack, integrated I/O-processor, 5.25" winchester disc drive + CU, 20M/8" streamer cartridge drive + CU.	A
models:	P874-50x/10 incl. 26Mb unformatted winchester disc drive P874-50x/20 incl. 53Mb unformatted winchester disc drive	
P874-602	PML74 Basic System with 18 free general purpose slots incl. free standing cabinet, P857E-cpu, basic power supply with battery pack, integrated I/O-processor, 1M/8" floppy disc drive + CU, 8" winchester disc drive + CU.	A
P874-603	PML74 Basic System with 17 free general purpose slots incl. free standing cabinet, P857E-cpu, basic power supply with battery pack, integrated I/O-processor, 1M/8" floppy disc drive + CU, 8" winchester disc drive + CU, 20M/8" streamer cartridge drive + CU.	A
P874-604	PML74 Basic System with 18 free general purpose slots incl. free standing cabinet, P857E-cpu, basic power supply with battery pack, integrated I/O-processor, 8" winchester disc drive + CU, 20M/8" streamer cartridge drive + CU.	A
models:	P874-60x/10 incl. 70Mb unformatted winchester disc drive P874-60x/20 incl. 188Mb unformatted winchester disc drive	

Type number	Description	Class
P876-400	P876 Basic System with 18 free general purpose slots incl. power supplies PSUB1E and PSUM, battery back-up filter board PSU9B, 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. models: P876-400/01 220V/50Hz P876-400/11 110V/50Hz	A
P876-602	PML76 Basic System with 15 free general purpose slots incl. free standing cabinet, CP2B-cpu, basic power supply with battery pack, I/O-processor, 1M/8" floppy disc drive + CU, 8" winchester disc drive + CU.	A
P876-603	PML76 Basic System with 14 free general purpose slots incl. free standing cabinet, CP2B-cpu, basic power supply with battery pack, I/O-processor, 1M/8" floppy disc drive + CU, 8" winchester disc drive + CU, 20M/8" streamer cartridge drive + CU.	A
P876-604	PML76 Basic System with 16 free general purpose slots incl. free standing cabinet, CP2B-cpu, basic power supply with battery pack, 8" winchester disc drive + CU, 20M/8" streamer cartridge drive + CU.	A

models: P876-60x/10 incl. 70Mb unformatted winchester disc drive
P876-60x/20 incl. 188Mb unformatted winchester disc drive

Table 2. **Basic system components**

		P851	P870	P871	P874	P876	PML71	PML74	PML76
racks/cabinets	Eurorack	-100							
	6U6U rack		-256						
	6U12 rack		-356						
	RA12F rack			-300	-300				
	RAL22F rack				-400	-400			
	small cabinet			A12F rack				-300	-300
	RAL22F rack				-400	-400			
	small cabinet						-50x	-50x	
	big cabinet							-60x	-60x
CPU's	CPSZ-card	x							
	C7E1,C7E2,MIOP (P857E)				x			x	
	SBCA-card		x						
	CP1BF-card			x			x		
	CP2B-cardset					x			x

Table 3. **Basic system mounting codes and power characteristics**

Type number	Free slots	Mounting code	power available (in Amp) logic +5V	-5V	+12V	-12V	+24V	-memory- +5V	+12V	Notes (app.1)	Class
P851-100	12	rack 6U	12.2		2.0	1.2		1.2	.9	1,32	B
P870-256	5	rack 6U	11.6		1.45	.45		.9	.8	2,10,11	A
P870-356	11	rack 6U	25.6		2.95	.95		.9	.8	2,10,11	A
P871-300	11	rack 6U	27.4		.98	.48	3.5	4.0		3,35, 38,39	A
P871-500	8	cabinet	26.1		.98	.48		4.0			A
P871-502	7	cabinet	22.4		.9	.43		4.0			A
P871-503	6	cabinet	15.8		.9	.43		4.0			A
P871-504	8	cabinet	22.0		.9	.43		4.0			A
P874-300	9	rack 6U	21.2		.9	.47	3.5	4.0		3,35 38,39	A
P874-400	20	rack 10U	31.2	1.0	1.25	.95	3.5	4.0	1.5	3,31,35 38,39	A
P874-500	7	cabinet	23.1		.94	.46		4.0			A
P874-502	6	cabinet	19.4		.86	.41		4.0			A
P874-503	5	cabinet	12.8		.86	.41		4.0			A
P874-504	6	cabinet	15.8		.86	.41		4.0			A
P874-602	18	cabinet	24.1		3.44	.96		4.0		40	A
P874-603	17	cabinet	17.5		3.44	.96		4.0		40	A
P874-604	18	cabinet	20.6		3.44	.96		4.0		40	A
P876-400	18	rack 12U	15.0	1.0	1.25	.95	3.5	4.0	1.5	3,31 35,38	A
P876-602	15	cabinet	11.7		3.5	1.0		4.0		40	A
P876-603	14	cabinet	5.1		3.5	1.0		4.0		40	A
P876-604	16	cabinet	11.4		3.5	1.0		4.0		40	A

Remark: The number of U(nits) denotes the height of the rack. 1U is 1.75" (44.45 mm). Standard 19" cabinets exist with a height of 33U. Of all equipment to be mounted in cabinets, mentioned in this catalogue, the height in units is given. Loose panels with heights of 1U, 3U, 5U or 7U are available to close the front of the cabinet.

Chapter 2. Memories

All P800 memories are MOS-memories on double Euro-cards. They require one general purpose slot in the basic system. Memories of the same type (same cycle and access times) can be combined in one basic system within the addressing range of that system and the address possibilities of the memory modules. Memories can be ordered by the type numbers mentioned in the table below, followed by the description "memory module ..k".

Type number	capacity	max.acc. time(us)	Power consumption (in A)	+5VL	+12VL	+5VM	+12VM	Appl.syst. 5 P87....	Class
P851-004	4k16	GPBS .54	op	.4	.4	.3		1 0	B*
			nop	.4	.4	.05			
P851-005	8k16	GPBS .48	op	.4	.4	.3		1 0	B
			nop	.4	.4	.07			
P851-016	16k16	GPBS .56	op	.53	.5	.51		1 0	B*
		UPL .65	nop		.5	.09			
P851-017	32k16	GPBS .56	op	.53	.5	.55		1 0	B*
		UPL .65	nop		.5	.13			
P844-016	8k16	UPL .64		1.4	.035			1 0 1 4 6	A 1)
P843-608	128k21	UPL .35	op	1.5	1.14			1 4 6	A
			nop	1.5	.62				
P843-612	512k21	UPL .34	op	1.3	1.25			1 4 6	A
			nop	1.3	.65				
P851-012	32k16			package dependent				1 0 1 4 6	A 2)
P843-012	-			1.45+ nx0.065	.45+ (n-2)x0.01			1 0 1 4 6	A 3) 4)

1) RAM CMOS memory with battery included on the card
2) card for EPROM chips type 2732 or 2732A; delivered without chips
3) programming tool for P851-010/012; for software support see SRTM
4) n = number of EPROM-chips on the card

Battery back-up times

Rack	Battery	Memory	Minimum Back-up times
Eurorack	P851-046	32k16	1.5 hours
6U6U/6U6G	option in rack (max 1)	32k16	2.0 hours
6U12	option in rack (max 2)	32k16	2.0 hours per battery
RA12F	standard in rack	128k21	4 hours
		512k21	4 hours
RAL22F	standard in rack	128k21	8 hours
		512k21	8 hours
small cab.	standard in cabinet	128k21	4 hours
		512k21	4 hours
big cab.	standard in cabinet	128k21	8 hours
		512k21	8 hours

Chapter 3. Basic system options and accessories

Type number	Description	Appl.syst. 5 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 300 k 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 450 k words/sec. 8 subchannels standard. Mounting code: 1 slot. Power consumption: +5V/3.2A	1 4 6	A
	Floating point processor		
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 6	A
	Clock		
P843-160	Programmable real time clock (RTCZ) Crystal controlled. Period ranging 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 0 1 4 6	A
	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

Type number	Description	Appl.syst. 5 P87....	Class
	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 Power cons: +5VL/0.3A; +12VL/0.2A; -12VL/0.02A See note 36 (appendix 1).	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.	1 4 6	A
P843-502	Logic rack front cover for P874-400 and P876 Mounting code: 6U.	4 6	A
P843-503	Basic system front cover with key hole To be used when no control panel is desired. Mounting code: 4U.	1 4 6	A
P843-504	Logic rack front cover for P871/4-300 Mounting code: 6U.	1 4	A
P843-510	Basic system front cover incl. digital extended control panel (FRCP) Inclusive cable between control panel and CPU. Mounting code: 4U. Power cons: +5VL/0.9A; +12VL/0.17A; -12VL/0.025A See note 36 (appendix 1).	1 4 6	A
P871-510	Digital extended control panel for PML Table top version incl. cable to front panel. Power cons: +5VL/0.9A; +12VL/0.17A; -12VL/0.025A	1 4 6	A
P843-550	Cable between basic system front cover and hand held control panel. 10 m.	1 4 6	A
P843-551	Cable between basic system front cover and hand held control panel. 3 m.	1 4 6	A
P843-552	Cable between CPU and hand held control panel. 3 m.	1 4 6	A

Type number	Description	Appl.syst. 5 P87....	Class
	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 P871/4/6 bus to the general purpose bus of the P857/9. Incl. break lines cable 3 m. Mounting code: 1 slot. Power consumption: +5VL/1.5A. See note 28 (app. 1).	1 4 6	A
	Battery pack		
P851-046	Battery pack for power supply back-up during power failure. 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 0 1 4	A
P843-200	Ventilation unit Included as standard in P874/6-400. Recommended to be mounted with P871/4-300 to ensure forced cooling of the rack. Mounting code: rack 4U.	1 4	A
P843-400	Basic power supply module (PSUB1E) to extend power for logic in P874/6-400 and P874/6-600 configurations. Power available: +5VL/30A	4 6	A
P843-402	Memory power supply module (PSUM1) to extend power for memory in P874/6-400 configurations. Power available: +5VM/3.0A; +12VM/1.5A	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 Socket for 6k or 12k 16-bit words ofe PROM, type 2716 or 2732 4k 16-bit words of RAM standard on board 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 cons: +5VL/2.4A; +5VM/0.6A; +12VL/0.05A; -12VM/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; -12VL/0.45A See notes 2,10,11 (appendix 1)	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; -12VL/0.95A See notes 2,10,11 (appendix 1) model: P870-x56/41 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 0.5m Mounting code: 1 slot. Power consumption: +5VL/1.7A; +12VL/0.04A; -12VL/0.04A	A

Chapter 5. Peripheral equipment and controllers

Type number	Description	Appl.syst. 5 P87....	Class
	Punched tape equipment		
P840-141	Control unit PTR/PTP (TRPZ) For punched tape reader P801-001 and tape punch P803-001 (both no longer available). Mounting code: 1 slot. Power consumption: +5VL/1.2A. See note 14 (appendix 1).	1 0 1 4 6	B*
	Card equipment and Line printer equipment		
P809-002	Matrix line printer 200 lpm 132 columns, 64 character set, Data Products interface, Philips type X1415. Free standing. To be connected via control unit P840-103.		B
P840-103	Control unit CR/LP (CRLPZ) For cardreader P806-102 (no longer available) and matrix lineprinters P809-002 and P809-004 (the latter no longer available). Data Products interface compatible. Mounting code: 1 slot. Power consumption: +5V/1A. See note 14 (app.1)	1 0 1 4 6	A
Recommendation:	The Printronix High resolution matrix printers, type 300 and type 600, have been tested with the P800 systems. They can be connected via the control unit P840-103. Connection cables can be supplied on request.		
	V24 interface equipment		
Recommendation:	Whereas character printers are no longer available from Philips the character printer KSR43 from Teletype has been tested with P800 systems. this printer can be connected via any control unit or CPU with V24 asynchronous interface.		
P816-810	Video display terminal 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 100-240V,50/60Hz. Table top. See note 22 (appendix 1).		A

Type number	Description	Appl.syst. 5 P87....	Class
P816-820	Video display terminal With all functions of the P816-810, but incl. blockmode transmission, split screen facility, read/write straps and editing functions. Table top. See note 22 (appendix 1).		A
P818-810	Video display terminal Identical to P816-810, but 15 inch screen		A
P818-820	Video display terminal Identical to P818-820, but 15 inch screen		A
P818-851	Alphanumeric keyboard TTY oriented, including control keys and cable, for P816-810 and P818-810		A
P818-852	Alphanumeric keyboard including numeric pad, function keys, indicator lights and cable, for P816-820 and P818-820		A
P818-900	Plug-in current-loop interface 20, 40, 60 mA, with/without current source. Mounting code: 1 slot in P816/8. To be connected to ASCU4Z P845-145 or SCUZ P845-140.		A
P816-920	Swivel stand for P816. Table top.		A
P818-920	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 cons: +5VL/.5A; +12VL/.025A; -12VL/.045A	1 0 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, 300, 600, 1200, 2400, 4800 and 9600 bits/sec. Mounting code: 1 slot. Power cons: +5V/1.75A; +12V/.05A; -12V/.03A See note 14 (appendix 1).	1 0 1 4 6	A

Type number	Description	Appl.syst. 5 P87....	Class
	Disc Equipment		
P824-100	Cartridge for P824-012/014 (no longer available)		B*
P824-140	Control unit for up to 2 disc drives P824-012/014 (CDDZ) To be connected via I/O-processor. See note 14 (app. 1). Mounting code: 1 slot. Power consumption: +5VL/2.45A	1 0 1 4 6	B*
P825-008	Moving head cartridge disc drive Capacity 80Mb, sector length by software control, average access time 30 ms, latency 8.33 ms, 3600 rpm, data transfer rate 9.67 MHz, including 7.5 m cable, free standing silent cabinet with power supply. CDC model 9762. To be connected via control unit P825-141. models: P825-008/04 1st drive P825-008/14 additional drive		B
P825-200	Cartridge for P825-008 (CDC type 9877)		B
P825-141	Control unit for up to 4 disc drives P825-008 (DFPC) Including DMA-facility and data chaining of variable record length format. Mounting code: 2 slots. Power cons: +5VL/8.4A; -5VL/0.7A See notes 14,37 (appendix 1).	0 1 4 6	A
P829-001	Equipment shelf with one 8" Winchester disc drive Average access time 42 ms, 3600 rpm, data transfer rate 0.8 Mbps. Mounting code: 6U. Power supply selfcontained. To be connected via control unit P829-140. See note 35 (app.1) models:		
	/00 1st shelf for P871/4-300, capacity 35 Mb unformatted, type Priam Diskos 3450/11	1 4	B*
	/10 1st shelf for P874/6-400, capacity 35 Mb unformatted, type Priam Diskos 3450/11	4 6	B*
	/20 2nd shelf, capacity 35 Mb unformatted, type Priam Diskos 3450	1 4 6	B*
	/30 1st shelf for P871/4-300, capacity 70 Mb unformatted, type Priam Diskos 7050	1 4	A
	/40 1st shelf for P874/6-400, capacity 70 Mb unformatted, type Priam Diskos 7050	4 6	A
	/50 2nd shelf, capacity 70 Mb unformatted, type Priam Diskos 7050	1 4 6	A

Type number	Description	Appl.syst. 5 P87....	Class
P829-002	8" Winchester disc drive See P829-001. Power supply self-contained. Incl. cable. To be mounted in equipment shelf P829-001 and connected via CU P829-140. models:	1 4 6	B*
	/00 cap. 35Mb unformatted, Priam Diskos 3450/11	1 4 6	B*
	/30 cap. 70Mb unformatted, Priam Diskos 7050	1 4 6	A
P829-003	Equipment shelf with one 8" Winchester disc drive Capacity 188 Mb unformatted, average access time 20 ms, 3600 rpm, data transfer rate 1.2 Mbps, type Priam 806. Mounting code: 6U. Power supply self-contained. To be connected via control unit P829-140. See note 35. models:		
	/00 1st shelf for P871/4-300	1 4	A
	/10 1st shelf for P874/6-400	4 6	A
	/20 2nd shelf	1 4 6	A
P829-004	8" Winchester disc drive Priam 806 See P829-003. Power supply self-contained. Incl. cable. To be mounted in equipment shelf P829-003 and connected via CU P829-140.	1 4 6	A
P829-025	Equipment shelf with one 5.25" Winchester disc drive Average access time 55 ms, 3600 rpm, data transfer rate 0.5 Mbps. Mounting code: 6U. Power supply self-contained. To be connected via control unit P829-142. models:	1 4 6	A
	/00 1st shelf for P871/4-300, 26Mb unformatted	1 4	A
	/10 1st shelf for P874/6-400, 26Mb unformatted	4 6	A
	/30 1st shelf for P871/4-300, 53Mb unformatted	1 4	A
	/40 1st shelf for P874/6-400, 53Mb unformatted	4 6	A
P829-035	5.25" Winchester disc drive See P829-025. Power supply self-contained. Incl. cable. To be mounted in equipment shelf 829-025 and connected via CU P829-142. models: /00 26Mb unformatted, Rodime RO202E /30 53Mb unformatted, Rodime RO204E	1 4 6	A

Type number	Description	Appl.syst. 5 P87....	Class
P829-140	Control unit for up to four 8" Winchester disc drives (WDH) 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
P829-142	Control unit for up to two 5.25" Winchester disc drives (WDE) Including DMA-facility and variable record length format, SASI interface, I/O-cable. Mounting code: 1 slot. Power cons: +5VL/3.5A	1 4 6	A
P871-142	5.25" Winchester disc drive + CU To upgrade P871/4-500 to P871/4-502 models: P871-142/00 26Mb unformatted P871-142/30 53Mb unformatted	1 4 1 4	A A
	Floppy disc equipment		
P830-015	Floppy disc drive Capacity 256kb, IBM 3740 format, with doorlock CDC type 9404. To be mounted in equipment shelf P830-010 and connected via control unit P830-150. See note 18 (appendix 1).		A
P830-035	Floppy disc drive Capacity 1Mb, IBM 34-2 format, with doorlock CDC type 9406. To be mounted in equipment shelf P830-010 or P829-001/003/025. To be connected via control unit P830-150. See note 18 (app.1). models: /01 220V/50Hz for equipm.shelf P830-010 /02 110V/60Hz for equipm.shelf P830-010 /11 220V/50Hz for equipm.shelf P829-001/003/025		B*
P871-035	Floppy disc drive 2nd 1Mb floppy drive for PML71/74 in the small cabinet		B*
Remark:	In due time an 8" successor to the P830-035 and P871-035 will be announced.		
P830-100	10 diskettes for P830-015, IBM pre-formatted		A
P830-200	10 diskettes for P830-035, IBM pre-formatted		A

Type number	Description	Appl.syst. 5 P87....	Class
P830-150	Control unit for up to 4 floppy disc drives P830-015 or up to 2 floppy disc drives P830-035 (F1MZ) Mounting code: 1 slot. Power consumption: +5VL/1.8A. I/O-processor required. models:/01 incl. cable for 2 floppy disc drives /05 incl. cable for 4 floppy disc drives	1 0 1 4 6	A
P830-010	Equipment shelf for up to 2 floppy disc drives P830-015/035 Mounting code: rack 6U. Incl. 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 has to be ordered.	1 0 1 4 6	A
	Magnetic tape equipment		
P829-010	Streamer cartridge drive Capacity 20Mb, 90 ips, 8000 bpi, start/stop time 300 ms, data transfer rate 90 Kbps, type Archive Sidewinder, model 9020S. To be mounted in equipment shelf P829-001/003/025. To be connected via control unit P829-160.	1 4 6	A
P829-100	Streamer cartridge for P829-010, type Archive Sidewinder .25"		A
P829-160	Control unit for one streamer cartridge drive P829-010 (WJA1) Including DMA-facility, data chaining of variable record length format and IPL-function. Native interface, error recovery by 16 retries. Mounting code: 1 slot. Power cons: +5VL/4.1A	1 4 6	A
P831-007	Magnetic tape unit 9 tracks, operation speed of 100 ips with simu- lated speed selectable between 12.5 and 75 ips giving a transfer rate between 20 and 120 Kbps, density 1600 bpi, tape reels 7, 8.5 and 10.5", recording method ANSI, Phase Encoded, IBM compa- tible. Cipher type M890. Free standing cabinet. Including control unit with GPB-interface. To be connected to Euro-system via P843-117.		B*

Type number	Description	Appl.syst. 5 P87....	Class
P831-008	Magnetic tape unit 9 tracks, operation speed of 100 ips with simulated speed selectable between 12.5 and 75 ips giving a transfer rate between 20 and 120 Kbps, density 1600 bpi, tape reels 7, 8.5 and 10.5", recording method ANSI, Phase Encoded, IBM compatible. Cipher type M890. Mountable in 19" cabinet (max. 1 unit in the basic cabinet and 3 in one additional extension cabinet).		A
P831-060	Control unit for max. four magnetic tape units P831-008 (MTCU) to be mounted in equipment shelf P843-001 and connected to P871/4/6 with bus translator P843-117. Power consumption: +5VL/2.7A	1 4 6	B*
P871-160	Streamer cartridge drive + CU To upgrade P871/4-502 to P871/4-503	1 4	A
P876-160	Streamer cartridge drive + CU To upgrade P874/6-602 to P874/6-603	4 6	X
	Miscellaneous		
P843-111	SCSI-card Host adaptor card for interconnecting the P871/4/6 bus to an SCSI bus (Small Computer System Interface) which is capable of controlling up to 8 low to medium performance intelligent peripherals such as rigid discs, flexible discs, magnetic tapes, printers and second host adapter card. Optional arbitration and reselection phases selected by U-links. Mounting code: 1 slot. Power cons.: +5VL/1.6A	1 4 6	X

Chapter 6. Data communication controllers

Type number	Description	Appl.syst. 5 P87....	Class
P845-160	Control unit for 1 asynchronous or 1 synchronous 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 0 1 4 6	A
P845-170	Control unit for 1 synchronous line (SLCUZ) full duplex or half duplex connection, transmission speed up to 4.8 Kpbs in full duplex mode and 9.6 Kbps in half duplex mode. Special character recognition. CRC/VRC/LRC generation and check. Remot 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/0.1A See notes 14,19,28 (appendix 1)	1 0 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: +5VL/2.8A; +12VL/0.15A; -12VL/0.15A	1 0 1 4 6	A
P845-110	Control unit for high level data link procedure (HLVCU) 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 modem loops (2,3,4) and automatic address detection. Mounting code: 1 slot. Power consumption: +5VL/1.9A; +12VL/0.06A; -12VL/0.06A See notes 14,19 (appendix 1)	1 0 1 4 6	A

Chapter 7 Miscellaneous hardware

Type number	Description	Appl.syst. 5 P87....	Class
	Extenders and adaptors		
P843-115	General purpose bus cable with connectors models: P843-115/01 3m P843-115/03 5m		A
P843-031	Extension break lines cable To connect equipment shelves P843-001 to each other		A
	Equipment shelves		
P843-001	Equipment shelf Space for 6 I/O-cards Belier format, including power supply +5V/18A; +18V/1A; -18V/1A, telescopic slides, bus cable 3 m, bus connector. When used with a Euro-system a bus translator P843-107/117 is necessary. Mounting code: rack 3U. See note 1 (app.1).	1 0 1 4 6	A
P830-010	Equipment shelf for floppy disc drives. See page 5-6	1 0 1 4 6	A
P829-001	Equipment shelf with one 8" 35/70Mb Winchester disc drive. See page 5-3	1 4 6	A
P829-003	Equipment shelf with one 8" 188Mb Winchester disc drive. See page 5-4	1 4 6	A
P829-025	Equipment shelf with one 5.25" 26/53Mb Winchester disc drive. See page 5-4	1 4 6	A
	Cards and connectors		
P843-024	Set of 10 Euro-card connectors (female), 2x36 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

Type number	Description	Appl.syst. 5 P87....	Class
	Data communication auxiliary equipment		
P849-029	Modem panel for 16 synchronous/asynchronous external connections; meant for Cannon type connectors. Mounting code: rack 2U.	1 0 1 4 6	A
	Cables for DC-applications		
P843-048	Cable 7.5m for connection of V24 terminal to serial CU (ASCU4Z)	1 0 1 4 6	A
P843-050	Cable 7.5m for serial CU (ASCU4Z) open ended (current loop)	1 0 1 4 6	A
P849-514	Cable 7.5m between line CU (SALCUZ/HLVCU/SLCUZ) and V24 modem	1 0 1 4 6	A
P849-356	Cable 7.5m between line CU (SALCUZ/HLVCU/SLCUZ) and V24 terminal	1 0 1 4 6	A
P849-357	Cable 7.5m between line CU (SCUZ) and V24 terminal	1 0 1 4 6	A
P849-358	Cable 7.5m between line CU (SCUZ) and CL terminal	1 0 1 4 6	A
P849-359	Cable 1.5m between modem panel and V24 CU (ASCU4Z)	1 0 1 4 6	A
P849-360	Cable 1.5m between modem panel and V24 CU (SALCUZ/HLVCU/SLCUZ)	1 0 1 4 6	A
P849-361	Cable 7.5m between AMA4Z and V24 terminal	1 4 6	A
P849-362	Cable 1.5m between AMA4Z and modem panel	1 4 6	A
	Cables for displays		
P843-042	Cable 7.5m for connection to V24 CU (SCUZ)	1 0 1 4 6	A
P843-043	Cable 5m for connection to modem panel (CL)		A
P843-044	Cable 7.5m for connection to CL CU (SCUZ)	1 0 1 4 6	A
P843-045	Cable 5m for connection to modem panel (V24)		A
P843-047	Cable 7.5m for connection to V24 CU (ASCU4Z)	1 0 1 4 6	A
P843-051	Cable 7.5m for connection to V24 CPU (P874)	4 6	A

Type number	Description	Appl.syst. Class 5 P87....
	Cabinets	
P849-076	Basic 19" cabinet, 36 units with side panels and rear door, 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, 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 accesories	
P849-042	Power distribution panel 14A. 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 or Cipher M890 magnetic tape unit (P831-008) are mounted in cabinet.	A

Chapter 8 Software

Software can be ordered from Philips Telecommunication and Data Systems and will be issued as distribution systems only. A distribution system is a collection of software items and constitutes the software systems as are issued by Philips Telecommunication and 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 8r11m	disc/magn.tape/streamer/floppy1M	1A	1,2,3,7
C	8701 353 8r11m	magn.tape/streamer/floppy1M	1A	2,3,5
SRTM	8701 309 8r11m	disc/magn.tape	1B	2,4,5
FORTRAN	8701 357 8r11m	disc/magn.tape	1B	2,3,5
RTL/2	8701 352 8r11m	cassette tape/magn.tape	1B	2,3,5
AMS	8701 360 8r11m	cassette tape/magn.tape	1B	2,3,5

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. 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.
3. LM-type, OB-type and UF-type files to be used with MAS.
4. Includes the ROM generation software PV271-161, PV271-162 and PV271-163.
5. The 12nc contains information about release (r), level (11) and medium (m) on which the software can be made available. The medium is indicated by:
   2 - CDC CMD 16M
   4 - magnetic tape
   6 - disc 2.5M/5M
   7 - disc 40M/80M
   8 - floppy disc 1M
   9 - streamer

Type number	Description
	Small Real Time Monitor (SRTM)
	(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. SRTM is generated via the Macro Processor. It is possible to generate a Small Read Only Real Time Monitor for ROM versions.
2. The SRTM is upwards compatible with the Basic Real Time Monitor.
3. The SRTM is intended for dedicated computer applications requiring a small and fast operating system.
4. The SRTM is memory resident. For IPL and data storage cassette or floppy disc can be used. SRTM 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
	Multi Application System (MAS)
	(memory required 128k16)
PV280-100	Basic package including - Multi Application Monitor (MAM) serving peripherals as specified in appendix 2 - Batch control processor - Foreground control language - Update package - Screen editor - Program development 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. It includes HDLC procedure - BSC Line Procedure package for synchronous line control units
Notes:	1. Minimum configuration: - 128k 16-bit words of memory - 1 removable hard disc or 1 Winchester drive and 1 floppy drive or 1 Winchester drive and 1 streamer drive (see note 35, appendix 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. Releases 8.1x and 9.x are meant for P854/59/71/74/76, release 8.5x for P857/58

Type number	Description
	C Compiler
PV282-050	C compiler running under MAS Generated code running under MAS and SRTM. Generation of re-entrant program code. Runtime library with: - Direct system calls - C-standard I/O functions - String handling - Mathematical functions - Floating point support Customer must accept a licence contract before delivery.
	Real Time Language (RTL/2)
PV281-091	RTL/2 package for MAS including - RTL/2 compiler - Linkage verifier - Control routines - Base programs - Stream I/O formatting - Stream I/O support - Supervisory control procedures - Mathematical library Compiled programs will run under MAS and SRTM Customer must accept a license contract before delivery.
	Extended FORTRAN
PV281-081	Extended FORTRAN compiler for MAS
PV281-082	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 re-entrant/non-re-entrant programs and wired/simulated floating point arithmetic. Compiled programs will run under MAS and SRTM.

Type number	Description
	Activity Management System (AMS)
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-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 applications 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

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-number:
x=2 punched tape
x=3 cassette tape
x=4 floppy disc
x=5 streamer tape

Each testprogram is to be ordered individually. It will be delivered with documentation
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	Mem. req.	Notes p 9.3
		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 P854/74 CPU instr.	16k16	3
PVx50-143	SBCA	Testprogram for P870 to test all I/O CU's and timers on the card	4k16	10
PVx50-163	CP1/2B	Testprogram for P871/6	16k16	9
		Memories		
PVx50-126	BRAM	Testprogram for semiconductor memories <= 32k16	4k16	5
PVx50-136	BBRAM	Testprogram for semiconductor memories > 32k16	32k16	3
		Serial interface		
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 P830-006/15 via P830-145	8k16	5
PVx50-134	BZ1250	Testprogram for P827-001 via P827-140	16k16	8
PVx50-141	BZ1216	Testprogram for P824-014 via P824-140	16k16	5,8,9
PVx50-142	BZCDD1	Testprogram for P824-012 via P824-140	16k16	5,8,9
PVx50-148	BF1MZ	Testprogram which tests the F1MZ CU on the disc CDC 9404/9406	24k16	5,9
PVx50-152	BWDAB1	Testprogram for P825-011/12 via P825-141	32k16	3,5,9

Type number	Program name	Description	Mem. req.	Notes p 9.3
PVx50-166	BWDH1	Testprogram for P829-002 via P829-140 (WDC, WDH)	32k16	5,9
PVx50-162	BWDD1	Testprogram for P829-006 via P829-141	32k16	5,9
PVx50-167	BWDE1	Testprogram for P829-006 via P829-141	32k16	5,9
PVx90-004	WDABU	Program for detection of bad spots for P825-011/12	32k16	9
PVx90-006	WDDU	Program for detection of bad spots for P829-006	32k16	9
PVx90-007	WDHU	Program for detection of bad spots for P829-002	32k16	9
PVx90-009	WDEU	Program for detection of bad spots for P829-006 (Seagate) and P829-035 (Rodime)	32k16	9
PVx50-100	BPTR1	Testprogram for P801-001 via P801-140 or P840-141 (with ref.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	BWJA1	Testprogram for P829-010 via P829-160	32k16	5,9
		Datacommunication		
PVx50-115	BHDLC	Testprogram for P845-100	8k16	6,7,9
PVx50-116	BZSAC1	Testprogram for SALCUZ 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	BSLCUZ	Testprogram for P845-170	8k16	7,9
PVx50-168	BAMA4Z	Testprogram for P845-180 (AMA4Z)	32k16	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 (P871) and CP2B (P876)	32k16	9
PVx50-165	PAF2B	Testprogram for a page fault trap and handling of RTC and PW interrupt with CP1BF (P871) and CP2B (P876)	32k16	9

Notes
1 Only P851
2 Only P853
3 Only P854/74 consisting of 2 CPU cards and 1 MIOP card
4 Only P854/74
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 hand held control panel are required
11 Only P854/74 consisting of 2 CPU cards and 1 MIOP card, and P876

Part B **Testprograms for Belier systems**

Type number	Program name	Description	Mem. req.	Notes p 9.5
		Processors		
PVx50-120	CPA4K	Program tests instr. set of P852 CPU	4k16	1
PVx50-121	CPA8K	Program tests instr. set of P852 CPU	8k16	1
PVx50-127	CPB8K	Program tests instr. set of P856/7 CPU	8k16	3,6,7
PVx50-145	CP57RE	Program tests instr. set of P858/9 CPU	16k16	3,4,5
		Memories		
PVx50-122	BMEMO	Testprogram for memories <= 32k16, incl. PWF/AR	4k16	7
PVx50-129	BBMEMO	Testprogram for memories > 32k16, incl. PWF/AR (1.2 or 0.7 us)	>32k16	3,4,7
PVx50-126	BRAM	Testprogram for MOS-memories <= 32k16	4k16	3,4,6
PVx50-136	BBRAM	Testprogram for MOS-memories >32k16	>32k16	6
		Serial interface		
PVx50-101	BSER1	Testprogram for P842-001 via P845-040 or P840-002	4k16	6-9
PVx50-138	BBSER1	Testprogram for V24 device via controller on CPU board	8k16	3,6,7
PVx50-132	BP817	Testprogram for P817-001/2 via P840-002 or P845-040	4k16	8
PVx50-131	BBDISP	Testprogram for Hazeltine 1200A via serial CU on P856/7 CPU	8k16	3,8
PVx50-107	BDISP1	Testprogram for Hazeltine 1200A via P840-002 or P845-040	4k16	8

Type number	Program name	Description	Mem. req.	Notes p 9.5
		Disc		
PVx50-133	BFHD1	Testpr. for DDC 8200/8400 via P826-040	4k16	8,9,10
PVx50-149	BF1MB	Testprogram for CDC 9494/9406 via F1MB (tests also SOP-function)	24k16	9
PVx50-130	BFLOP1	Testpr. for P830-006/015 via P830-045	8k16	8
PVx50-108	BCDC2	Testpr. for P825-007/008 via P825-040	32k16	8
PVx50-105	BCDD1	Testprogram for P824-012 via P824-040	8k16	8
PVx50-140	BX1216	Testprogram for P824-014 via P824-040	8k16	8
PVx50-151	BIGD2C	Testpr. for CMD disc drives via BIGD2	32k16	3,8,9
PVx50-155	BIGD2S	Testpr. for SMD disc drives via BIGD2	32k16	3,8,9
		Peripherals		
PVx50-100	BPTR1	Testprogram for P801-001 via P840-001/2 or P801-040 (with reference 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 test-tool supplied)	4k16	8
		Datacommunication		
PVx50-112	BMA8A+C	Testprogram for P845-060 and P845-070	16k16 AMA8A: AMA8C:	9,11 12 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

Type number	Program name	Description	Mem. req.	Notes p 9.5
		Options		
PVx50-123	BBMMU1	Testprogram for memory management unit	32k16	2
PVx50-124	BBFPP1	Testprogram for P857-020	8k18	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 testprogram 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 5Ah for 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 can be combined with P870.
11	The TSBC card P870-750 is mandatory to use the hand held control panel with P870.
14	Control units are deliverd without cables/connectors for connection to the devices (except for floppy control units).
18	With 4 floppy drives the cable 5111 199 71020 is to be ordered.
19	For some applications an I/O-processosr P843-120 or P851-020 is needed.
22	Several national keyboard lay-outs and character sets are available.
26	Maximum power dissipation per cabinet: without fans 800W, with 2 fans 1200W, 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 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 PSUM1 are optional.

32 Consumption including full control panel.

33 Comsumption including extended control panel.

34 Consumption including extended digital control panel.

35 Maximally two equipment shelves P829-001 or two equipment shelves P829-003 may be connected to one system. Apart from the first Winchester disc drive the first shelf may contain:
- a second Winchester drive
- a streamer tape drive
- a floppy disc drive
- a streamer tape drive and a floppy disc drive

Contrary to the Winchester disc drives, the streamer and the floppy drives get their power from the basic system.

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.

38 Only one equipment shelf P829-025 may be connected to one system. Apart from the first Winchester disc drive the shelf might contain:
- a second Winchester disc drive
- a second Winchester disc drive and a floppy disc drive
- a floppy disc drive
- a streamer disc drive
- a streamer disc drive and a floppy disc drive

Contrary to the Winchester disc drives the streamer and floppy drives get their power from the basic system.

39 Additional Winchester drive, streamer drive and floppy drive are field-installable. MAS can be delivered on 1M floppy discs or on streamer tape. MAS can be brought to the Winchester disc from either the floppy discs or the streamer tape. Thereafter subsequent IPL will be from Winchester disc.

40 A second PSUB1E is optional.

Appendix 2 P800 Software support for P800 hardware

hardware items		software systems	
type-nr	discription	SRTM	MAS
	central processing units		
P870	CPU + 4kw RAM, 12k4 REPROM	*	-
P851	CPU + max. 32kw RAM	*	-
P853	CPU + max. 32kw RAM	*	-
P856	CPU + max. 32kw RAM	*	-
P857	CPU + max. 128kw RAM	32k	*
P858	CPU + max. 128kw RAM	32k	*
P859	CPU + max. 512kw RAM	32k	*
P854	CPU + max. 512kw RAM	32k	*
P871	CPU + max. 512kw RAM	32k	*
P874	CPU + max. 512kw RAM	32k	*
P876	CPU + max. 512kw RAM	32k	*
PML71	CPU + max. 512kw RAM	32k	*
PML74	CPU + max. 512kw RAM	32k	*
PML76	CPU + max. 512kw RAM	32k	*
	system options		
	floating point processor	-	*
	read only memory support	runt	-
	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
P829-003	8" winchester disc drive	-	rel 8.12
P829-005	5.25" winchester disc drive	-	rel 8.12
P829-025	5.25" winchester disc drive	-	rel 8.12
	low performance disc equipment		
P830-006	floppy disc drive 0.25 Mb	*	D
P830-015	floppy disc drive 0.25 Mb	*	D
P830-025	floppy disc drive 1 Mb	-	D:rel 8
P830-035	floppy disc drive 1 Mb	-	D:rel 8
P827-001	mini fixed disc 6 Mb	-	-

type-nr	discription	SRTM	MAS	TMS
	magnetic tape equipment			
P829-010	streamer cartridge drive	-	D:rel 8.10	NA
P831-004	tape drive 800 bpi	-	*	NA
P831-006	tape drive 1600 bpi	-	*	NA
P831-007	tape drive 1600 bpi	-	*	NA
P831-008	tape drive 1600 bpi	-	*	NA
P833-002	cassette tape drive	*	*	NA
	unit record equipment			
P801-001	punched tape reader	*	*	NA
P803-001	tape punch	*	*	NA
P806-102	card reader	*	*	NA
P809-002	line printer 200 lpm	*	*	NA
P809-003	line printer 300 lpm	*	*	NA
P809-004	line printer 400 lpm	*	*	NA
P809-006	line printer 600 lpm	*	*	NA
	V24 interface equipment			
P842-00x	character printer	*	*	-
P817-00x	video display terminal	*	*	*
P816-0xx	video display terminal	*	*	*
P818-0xx	video display terminal	*	*	*
P845-140	SCUZ	*	*	-
P845-145	ASCU4Z	-	rel 8	*
P845-040	SECU	*	*	-
	data communication equipment			
P845-160	SALCUZ	*	rel.8.12')	*
P845-170	SLCUZ	-	rel 8	T
P845-100	HLCUZ	-	T	*
P845-110	HLVCU	-	rel 8	T
P847-060	SLCU2S	-	-	*
P847-070	SLCU4	-	-	*
P847-100	HLCU1	-	T	*
P847-110	HLVCUB	-	rel 8	T
P846-060	ALCU2	-	-	*
P846-070	ALCU4	-	-	*
P845-060	AMA8A	-	*	*
P845-070	AMA8C	-	-	*
P845-180	AMA4Z	-	rel 8.12	-

') asynchronous only

explanation of symbols used

*	supported
-	not supported
NA	not applicable
rel x	supported from release x
32k	maximum memory size supported
runt	runtime environment supported
D	supported as data carrier only
T	supported only with TMS

note: The Transmission Management System TMS is the Data Communication support package running with MAS.

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P816-920	Swivel stand for P816		A	5-2
P818-810	Video display terminal, 15", V24		A	5-2
P818-820	Video display terminal, 15", block		A	5-2
P818-851	Alphanumeric keyboard for P816/8-810		A	5-2
P818-852	Alphanumeric keyboard for P816/8-820		A	5-2
P818-900	Plug-in current-loop interface		A	5-2
P818-920	Swivel stand for P818		A	5-2
P824-100	Cartridge for P824-012/014		B*	5-3
P824-140	CU for max. 2x P824-012/014 (CDDZ)	1 0 1 4 6	B*	5-3
P825-008/04	Moving head cartr.disc drive (1st)		B	5-3
P825-008/14	Moving head cartr.disc drive (add)		B	5-3
P825-141	CU for max. 4x P825-008	0 1 4 6	A	5-3
P825-200	Cartridge for P825-008		B	5-3
P829-001/00	Eq.sh. 8"/35M wi. P871/4-300 (1st)	1 4	B*	5-3
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P829-003/10	Eq.sh. 8"/180M wi P874/6-400 (1st)	4 6	A	5-4
P829-003/20	Eq.sh. 8"/180M winchester (2nd)	1 4 6	A	5-4
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P829-025/40	Eq.sh. 5.25"/53M wi P874/6-400	4 6	A	5-4
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P829-100	Streamer cartridge for P829-010		A	5-6
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P829-142	CU for max. 2x 5.25" wi.drives (WDE)	1 4 6	A	5-5
P829-160	CU for streamer cartr.drive (WJA1)	1 4 6	A	5-6
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P830-150/01	CU for max. 2x P830-015/035	1 0 1 4 6	A	5-6
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P831-007	Magnetic tape unit, stand alone	1 0 1 4 6	B*	5-6
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P840-141	Control unit PTR/PTP (TRPZ)	1 0 1 4 6	B*	5-1
P843-001	Equipment shelf for 6 I/O cards	1 0 1 4 6	A	7-1
P843-012	Programming tool for P851-012	1 0 1 4 6	A	2-1
P843-015	Set of 10 PUC I connectors		A	7-1
P843-016	Set of 5 PUC II connectors		A	7-1
P843-024	Set of 10 Euro-card conn. (female)		A	7-1
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P843-043	Cable 5m modem panel (CL) / display		A	7-2
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P843-503	Basic system front cover	1 4 6	A	3-2
P843-504	Logic rack front cover	1 4	A	3-2
P843-510	Basic system front cover, incl. FRCP	1 4 6	A	3-2
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P845-160	CU for 1 (a)synch.line (SALCUZ)	1 0 1 4 6	A	6-1
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P849-358	Cable 7.5m SCUZ / CL terminal	1 0 1 4 6	A	7-2
P849-359	Cable 1.5m modem panel / ASCU4Z	1 0 1 4 6	A	7-2
P849-360	Cable 1.5m modem panel / V24 CU	1 0 1 4 6	A	7-2
P849-361	Cable 7.5m AMA4Z / V24 terminal	1 4 6	A	7-2
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P851-004	Memory module 4k16	1 0	B*	2-1
P851-005	Memory module 8k16	1 0	B	2-1

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P851-012	Memory card for up to 32k16 EPROM	1 0 1 4 6	A	2-1
P851-016	Memory module 16k16	1 0	B*	2-1
P851-017	Memory module 32k16	1 0	B*	2-1
P851-020	I/O-processor (IOPZ)	1	B	3-1
P851-046	Battery pack	1	B	3-3
P851-048	Central processor front cover	1	B	3-1
P851-049	Central processor cover plate	1	B	3-2
P851-050	Cable support rack and panel	1 0 1 4	A	3-3
P851-100/01	P851 BS, 12 slots, minipanel	1	B	1-2
P851-100/11	P851 BS, 12 slots, full contr.panel	1	B	1-2
P854-020	Floating point processor	4 6	A	3-1
P870-001/01	Single board computer (SBC), gold	0	A	4-1
P870-001/02	Single board computer (SBC), tin	0	A	4-1
P870-256/41	P870 BS, 5 slots, filter + battery	0	A	4-1
P870-356/41	P870 BS, 11 slots, filter + battery	0	A	4-1
P870-570	SBC Testtool (TSBC)	0	A	4-1
P871-035	2nd Floppy dr. 1M for P871/4-500	1 4	A	5-5
P871-142/00	5.25"/26M wi+CU to upgr. P871/4-500	1 4	A	5-5
P871-142/30	5.25"/53M wi+CU to upgr. P871/4-500	1 4	A	5-5
P871-160	Streamer+CU to upgr. P871/4-502	1 4	A	5-7
P871-300	P871 Basic system, 11 slots	1	A	1-2
P871-500	PML71 BS, 8 sl, 1M fl	1	A	1-3
P871-502/10	PML71 BS, 7 sl, 1M fl, 26M wi	1	A	1-3
P871-502/20	PML71 BS, 7 sl, 1M fl, 53M wi	1	A	1-3
P871-503/10	PML71 BS, 6 sl, 1M fl, 26M wi, 20M st	1	A	1-3
P871-503/20	PML71 BS, 6 sl, 1M fl, 53M wi, 20M st	1	A	1-3
P871-504/10	PML71 BS, 8 sl, 26M wi, 20M st	1	A	1-3
P871-504/20	PML71 BS, 8 sl, 53M wi, 20M st	1	A	1-3
P871-510	Digital extended contr. panel for PML	1 4 6	A	3-2
P874-300	P874 BS, 9 slots	4	A	1-3
P874-400	P874 BS, 20 slots	4	A	1-3
P874-500	PML74 BS, 7 sl, 1M fl	4	A	1-4
P874-502/10	PML74 BS, 6 sl, 1M fl, 26M wi	4	A	1-4
P874-502/20	PML74 BS, 6 sl, 1M fl, 53M wi	4	A	1-4
P874-503/10	PML74 BS, 5 sl, 1M fl, 26M wi, 20M st	4	A	1-4
P874-503/20	PML74 BS, 5 sl, 1M fl, 53M wi, 20M st	4	A	1-4
P874-504/10	PML74 BS, 6 sl, 26M wi, 20M st	4	A	1-4
P874-504/20	PML74 BS, 6 sl, 53M wi, 20M st	4	A	1-4
P874-602/10	PML74 BS,18 sl, 1M fl, 26M wi	4	A	1-4
P874-602/20	PML74 BS,18 sl, 1M fl, 53M wi	4	A	1-4

Type number	Description	Appl.syst. 5 P87....	Class	Page
P874-603/10	PML74 BS,17 sl, 1M fl, 26M wi, 20M st	4	A	1-4
P874-603/20	PML74 BS,17 sl, 1M fl, 53M wi, 20M st	4	A	1-4
P874-604/10	PML74 BS,18 sl, 26M wi, 20M st	4	A	1-4
P874-604/20	PML74 BS,18 sl, 53M wi, 20M st	4	A	1-4
P876-160	Streamer+CU to upgr. P874/6-602	4 6	A	5-7
P876-400/01	P876 BS, 18 slots, 220V/50Hz	6	A	1-5
P876-400/11	P876 BS, 18 slots, 110V/50Hz	6	A	1-5
P876-602/10	PML76 BS,15 sl, 1M fl, 70M wi	6	A	1-5
P876-602/20	PML76 BS,15 sl, 1M fl, 188M wi	6	A	1-5
P876-603/10	PML76 BS,14 sl, 1M fl, 70M wi, 20M st	6	A	1-5
P876-603/20	PML76 BS,14 sl, 1M fl, 188M wi, 20M st	6	A	1-5
P876-604/10	PML76 BS,15 sl, 70M wi, 20M st	6	A	1-5
P876-604/20	PML76 BS,15 sl, 188M wi, 20M st	6	A	1-5