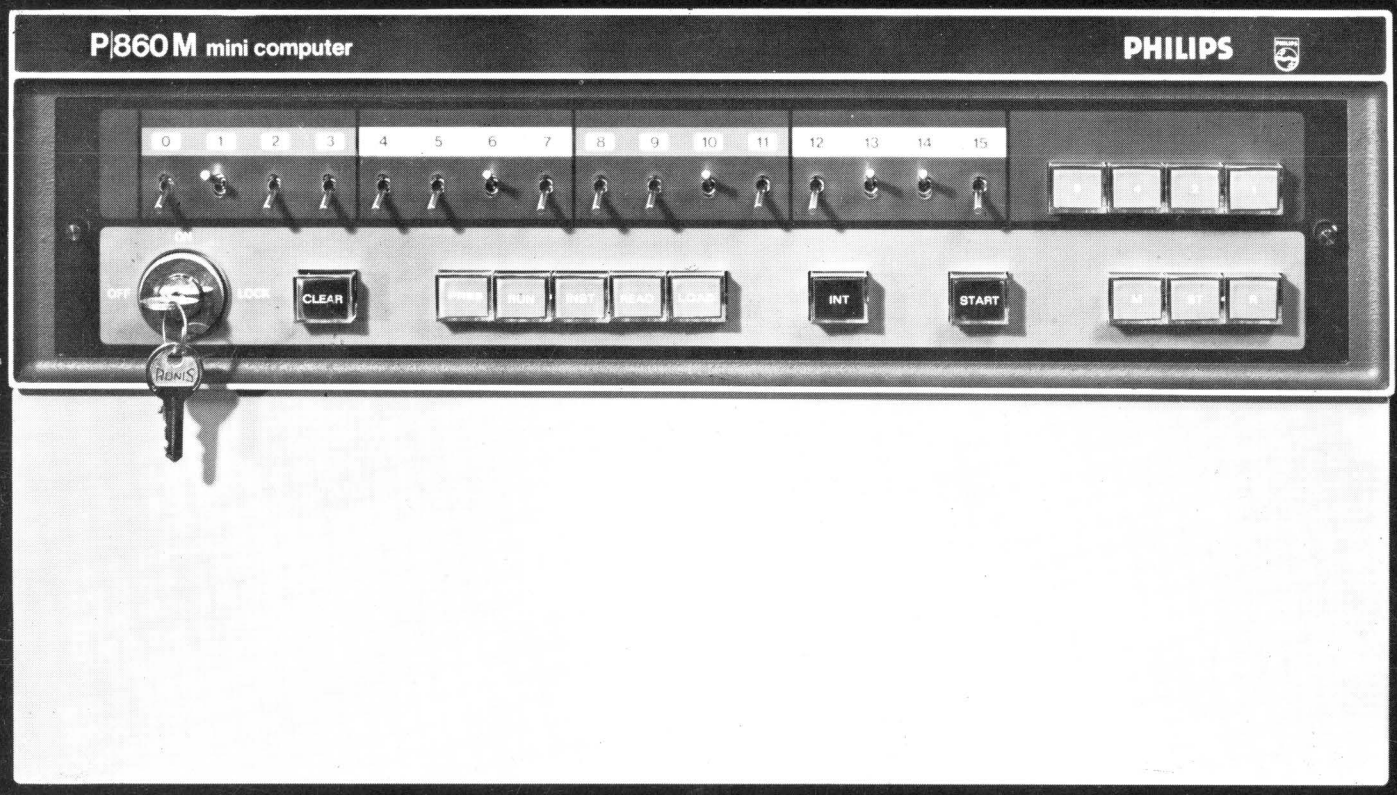
P800
Minicomputers
OEM Equipment
Catalogue



PHILIPS Data Systems

PHILIPS

P800 Minicomputers
OEM Equipment Catalogue

February 1973

OEM CATALOGUE

Purpose

This equipment catalogue lists all central processors, peripherals, controllers, options and interfaces available in the P800 family of mini computers. Sufficient information is provided to enable the prospective customer to define his individual requirements in terms of a specific P800 series configuration. For this purpose, details of prerequisites, mounting requirements and powering are provided.
A complete configurator is included at the end of the catalogue to aid in guiding the potential user in this selection process.

Steps in selecting a configuration

Having analysed the requirements of your application and made a selection of central processor, memory, peripherals, interfaces, etc., the following must be done.

1 Check for all individual prerequisites (eg. the P822-001 Moving Head disc requires a Controller P822-055).

2 Check the mounting space for all peripheral controllers, interfaces and data communication cards. If necessary add additional equipment shelves, shown on page 14.

3 Next comes a check on power requirements. In some cases the user will have selected to provide his own powering. Here the requirements of **all** elements of the system - central processor, peripheral controllers, interfaces and data communication cards will have to be considered.

Where central processors with power are being purchased only the power requirements of peripheral controllers mounted outside the central processor chassis, interfaces and data communication cards need to be considered.

4 In some cases, the customer will require the equipment to be mounted in standard 19″ cabinets. In these cases, unless otherwise specified by the customer, the equipment will be mounted according to predefined standards; for instance, the computer will always be mounted in the centre of the cabinet. These standards are available on request from the local sales organization. Equipment ordered without cabinets will be delivered in separate units with standard length connecting cables and hardware for fixed mounting in the cabinets mentioned, unless specified otherwise in this catalogue.

5 Mains connection should be 220 V-50 Hz unless specified otherwise. Non-standard specifications may require different lead times and/or additional cost.

6 In appendix 2 a list is provided, specifying non standard cable length. If the customer requires one of these cables it has to be specified.

Non-standard requirements

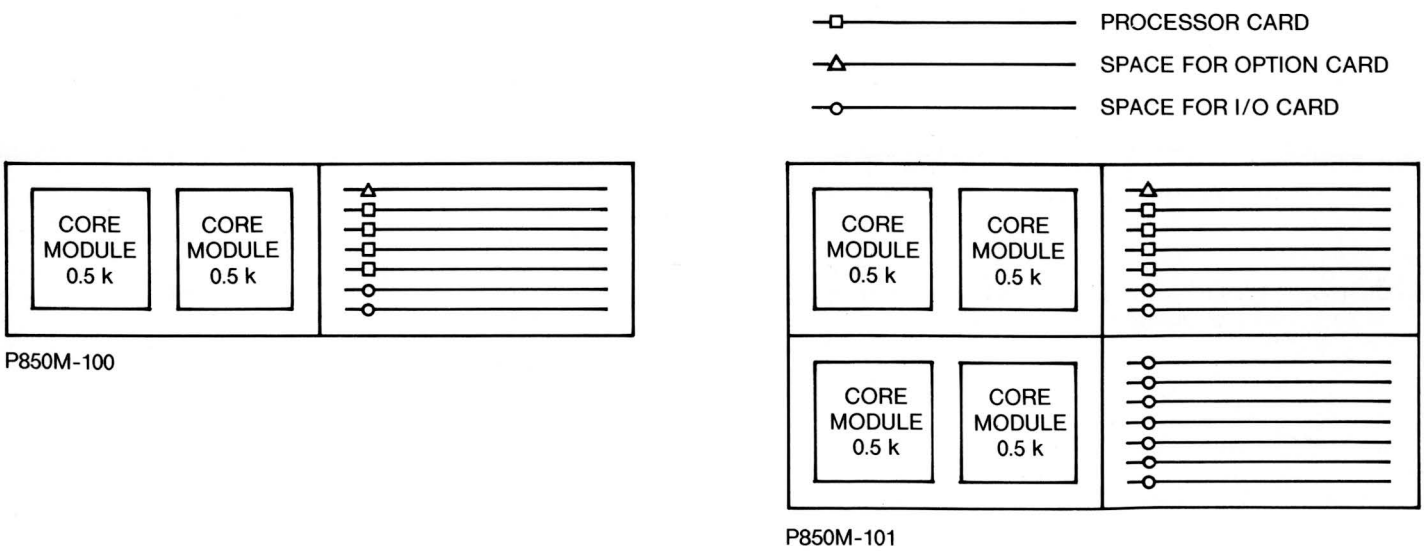
In some instances the needs of a particular customer or application will not be met precisely by the equipment offered in this catalogue. The technical support staff at your nearest Philips sales office will be pleased to discuss with you solutions to meet these requirements.

Type number	*Description*	*Pre-requisites*	*Mounting code*	*Power requirements*	*Note*
	P850M				
P850M	Central processor, includes as standard: - 16 hardware registers, 14 of which are programmable general purpose registers - instruction set with 62 instructions - programmed channel - 2 interrupt lines on 1 level - minipanel				
P850M-100	Central processor with space for 1k 16-bit words of memory, 2 I/O cards and option mounting card, rack version, includes power supply for memory modules, I/O cards and central processor option card	none	rack, 3U	self-contained, +5V, 12.5A −5V, 5A	1
P850M-101	Central processor with space for 2k 16-bit words of memory, 9 I/O cards and option mounting card, rack version, includes power supply for memory modules, I/O cards and central processor option card	none	rack, 6U	self contained +5V, 25A −5V, 10A	1
P850M-104	Central processor with space for 1k 16-bit words of memory, 2 I/O cards and option mounting card, rack version, w/o power supply and ventilation	-	rack, 3U	+5V, 3.9A	-
P850M-105	Central processor with space for 2k 16-bit words of memory, 9 I/O cards and option mounting card, rack version, w/o power supply and ventilation	-	rack, 6U	+5V, 3.9A	-
P850M-024	Power supply incl. ventilation unit for central processor P850M-104	-	B	+5V, 12.5A; −5V, 5A	-
P850M-028	Power supply incl. ventilation unit for central processor P850M-105	-	B	+5V, 25A; −5V, 10A	-
P850M-007	Memory module with 0.5k 16-bit words of read/write core 3.2 microsec. cycle time	P850M-100 /-101 /-104 /-105	B	+5V, 3.5A; −5V, 4.5A	-
P850M-008	Memory module with 1k 16-bit words of read/write core 3.2 microsec. cycle time	P850M-100 /-101 /-104 /-105	B	+5V, 6.8A; −5V, 4.8A	-
P850M-009	Memory module with 2k 16-bit words of read/write core 3.2 microsec. cycle time	P850M-101 /-105	B	+5V, 12.5A −5V, 5.4A	-
P850M-020	Control panel for rack mounted central processor	-	removable, B	+5V, 0.8A	3

HARDWARE

Type number	*Description*	*Pre-requisites*	*Mounting code*	*Power requirements*	*Note*
	Option group consisting of:				
P850M-023	Option mounting card	Processor	B	+5V, 0.5A	-
P850M-025	Real time clock line frequency	P850M-023	-	-	4
P850M-026	Real time clock crystal controlled, 10 msec., optionally 1, 2, 5 msec	P850M-023	-	-	4
P850M-030	Power failure detection with automatic restart	P850M-023	-	-	-
P850M-031	Programmable interrupt lines 3-8	P850M-023	-	-	-
P850M-032	Programmable interrupt lines 9-16	P850M-023	-	-	-

PLAN OF INTERNAL LAYOUT



P850M-100

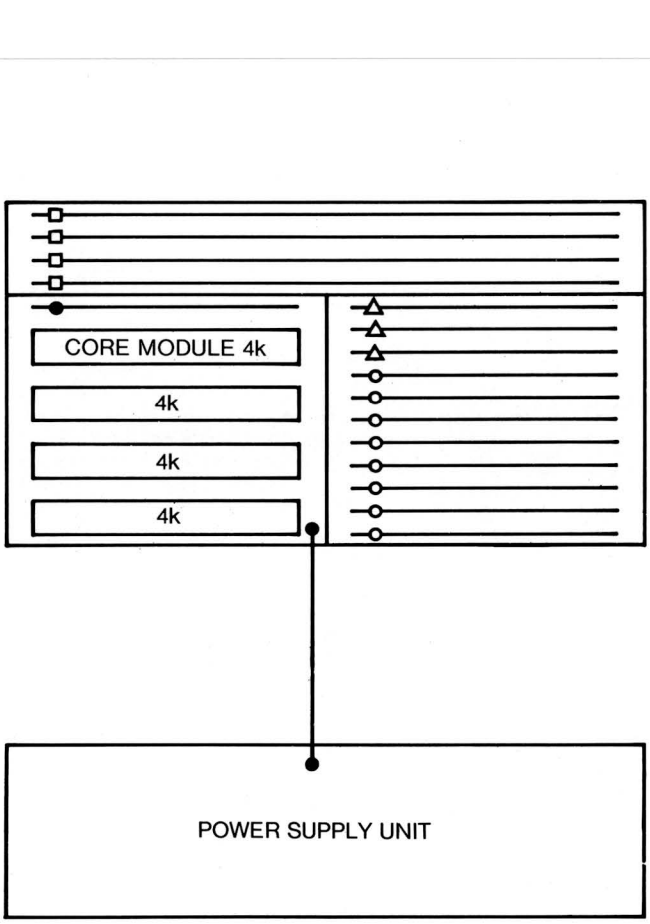
P850M-101

Type number	*Description*	*Pre-requisites*	*Mounting code*	*Power requirements*	*Note*
	P855M				
P855M	Central processor including as standard: - 16 hardware registers, 14 of which are programmable general purpose registers - instruction set with 97 instructions - programmed channel - 23 interrupt lines on 8 levels - direct memory access channel (DMA) connection - choice of 1 option mounting card for group 'A' or 'B' options - mini panel				
P855M-001	Central processor with space for 16k 16-bit words of memory, 8 I/O cards and 3 option mounting cards, includes power supply for memory modules, I/O cards and central processor option cards	none	rack, 9U	self-contained +5V, 28A −5V, 3A +24V, 12A	1
P855M-003	Central processor with space for 32k 16-bit words of memory, 8 I/O cards and 3 option mounting cards, includes power supply for memory modules, I/O cards and central processor option cards	none	rack, 11U	self contained +5V, 28A −5V, 3A +24V, 12A	1
P855M-006	Central processor with space for 16k 16-bit words of memory, 8 I/O cards and 3 option mounting cards; w/o power supply		rack, 6U	+5V, 8.6A	-
P855M-007	Central processor with space for 32k 16-bit words of memory, 8 I/O cards and 3 option mounting cards; w/o power supply		rack,8U	+5V, 8.6A	-
P855M-004	Memory module with 4k 16-bit words of read/write core, 1.2 μ sec. cycle time	Processor	B	+5V, 2.4A −5V, 0.15A +24V, 4.4A	2
P855M-008	Memory module with 8k 16-bit words of read/write core, 1.2 μ sec. cycle time	Processor	B	+5V, 3.3A −5V, 0.25A +24V, 5.2A	
P855M-020	Control panel for rack mounted central processor	Processor	removable, B	+5V, 0.8A	3
P855M-028	Option mounting card, containing high speed hardware multiply, divide and double length add/subtract	Processor	B	+5V, 0.6A	-
P855M-042	Direct memory access channel, with 2 device controller connections	Processor	2 I/O cards, D	+5V, 3A	5

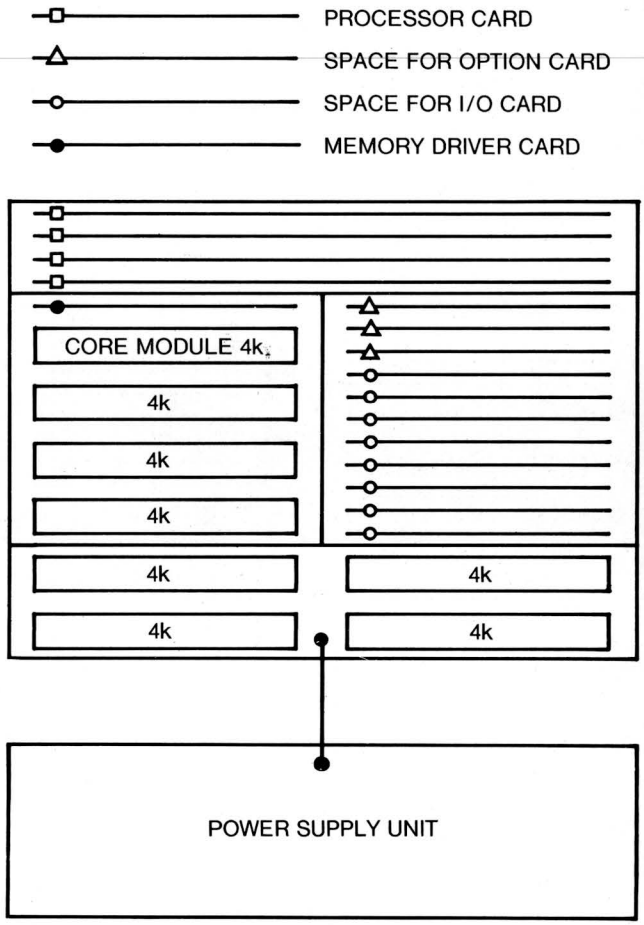
HARDWARE

Type number	*Description*	*Pre-requisites*	*Mounting code*	*Power requirements*	*Note*
	Option group 'A' consisting of:				
P855M-023	Option mounting card 'A'	Processor	B	+5V, 1.4A	-
P855M-025	Real time clock, line frequency	P855M-023	-	-	4
P855M-026	Real time clock, crystal controlled, 10 msec., optionally 1, 2, 5 msec.	P855M-023	-	-	
P855M-027	Memory protection	P855M-023	-	-	-
P855M-030	Power failure detection with automatic restart	P855M-023	-	-	-
P855M-031	Interrupt levels 9-18	P855M-023	-	-	-
P855M-032	Interrupt levels 19-28	P855M-023	-	-	-
P855M-033	Interrupt levels 29-48	P855M-023	-	-	-
	Option group 'B' consisting of:				
P855M-024	Option mounting card 'B'	Processor	B	+5V, 0.7A	-
P855M-040	Memory increment data break	P855M-024	-	-	-
P855M-041	Multiplex channel, with 15 subchannels, one for each device controller	P855M-024	-	-	5

PLAN OF INTERNAL LAYOUT: 855M.



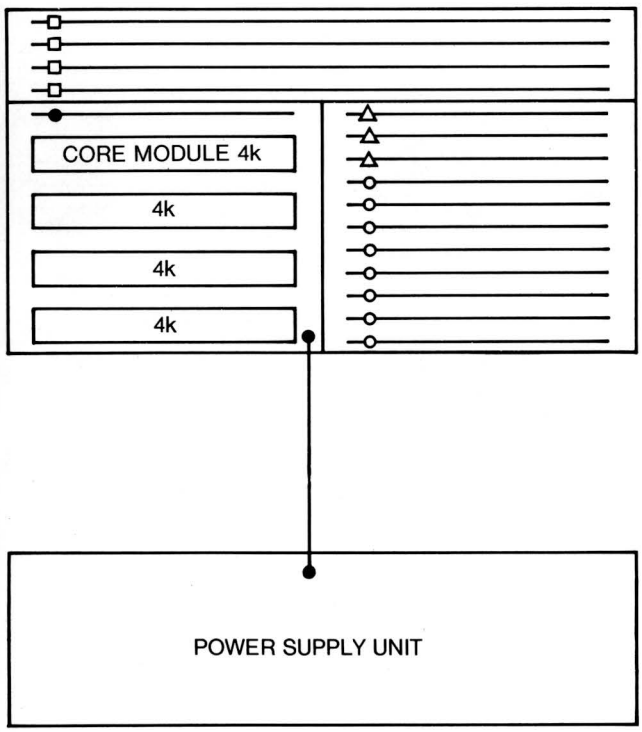
P855M-001



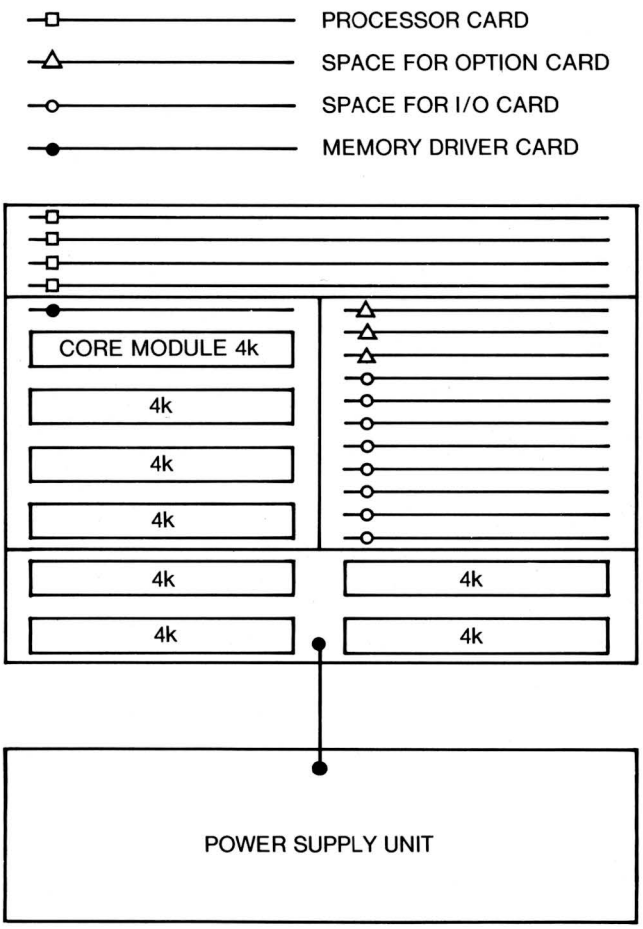
P855M-003

HARDWARE

PLAN OF INTERNAL LAYOUT: P860M.



P860M-001



P860M-003

Type number	*Description*	*Pre-requisites*	*Mounting code*	*Power requirements*	*Note*
	P860M				
P860M	Central processor, includes as standard: - 16 hardware registers, 14 of which are programmable, general purpose registers - instruction set with 97 instructions - programmed channel - 23 interrupt lines on 8 levels - direct memory access connection - choice of 1 option mounting card for group 'A' or 'B' options - mini panel				
P860M-001	Central processor with space for 16k 16-bit words of memory, 8 I/O cards and 3 option mounting cards, includes power supply for memory modules, I/O cards and central processor option cards.	none	rack, 9U	self-contained +5V, 28A −5V, 3A +24V, 12A	1
P860M-003	Central processor with space for 32k 16-bit words of memory, 8 I/O cards and 3 option mounting cards, includes power supply for memory modules, I/O cards and central processor option cards.	none	rack, 11U	self-contained +5V, 28A −5V, 3A +24V, 12A	1
P860M-006	Central processor with space for 16k 16-bit words of memory, 8 I/O cards and 3 option mounting cards; w/o power supply		rack, 6U	+5V, 8.6A	-
P860M-007	Central processor with space for 32k 16-bit words of memory, 8 I/O cards and 3 option mounting cards; w/o power supply		rack, 8U	+5V, 8.6A	-
P860M-005	Memory module with 4k 16-bit words of read/write core, 0.84 μsec. cycle time	Processor	B	+5V, 2.4A −5V, 0.15A +24V, 4.4A	2
P860M-008	Memory module with 8k 16-bit words of read/write core, 0.84 μsec. cycle time	Processor	B	+5V, 3.3A −5V, 0.25A +24V, 5.2A	
P860M-020	Control panel for rack mounted central processor	Processor	removable, B	+5V, 0.8A	3
P860M-028	Option mounting card, containing high-speed hardware multiply, divide and double length add/subtract	Processor	B	+5V, 0.6A	-
P860M-042	Direct memory access channel, with 2 device controller connections	Processor	2 I/O cards, D	+5V, 3A	5

Type number	*Description*	*Pre-requisites*	*Mounting code*	*Power requirements*	*Note*
	Option group 'A' consisting of:				
P860M-023	Option mounting card 'A'	Processor	B	+5V, 1.4A	-
P860M-025	Real time clock, line frequency	P860M-023	-	-	4
P860M-026	Real time clock, crystal controlled, 10 msec., optionally 1, 2, 5 msec.	P860M-023	-	-	4
P860M-027	Memory protection	P860M-023	-	-	-
P860M-030	Power failure detection with automatic restart	P860M-023	-	-	-
P860M-031	Interrupt levels 9-18	P860M-023	-	-	-
P860M-032	Interrupt levels 19-28	P860M-023	-	-	-
P860M-033	Interrupt levels 29-48	P860M-023	-	-	-
	Option group 'B' consisting of:				
P860M-024	Option mounting card 'B'	Processor	B	+5V, 0.7A	-
P860M-040	Memory increment data break	P860M-024	-	-	-
P860M-041	Multiplex channel with 15 subchannels, one for each device controller	P860M-024	-	-	5

Type number	*Description*	*Pre-requisites*	*Mounting code*	*Power requirements*	*Note*
	PAPER TAPE EQUIPMENT; P850M, P855M, P860M				
P801-001	Punched tape reader, 333 ch.p.s., including 3.0 m cable (Digitronics type 2540 EP)	P801-950	rack, 3U	-	6
P802-001	Punched tape reader 600 ch.p.s., including 3.0 m cable (Digitronics type 2540 EP)	P801-950	rack, 3U	-	6
P801-950	Control unit for punched tape reader, 333 ch.p.s., and 600 ch.p.s.	Processor	1 I/O card, A	+5V, 0.52A -5V, 0.2A	-
P803-001	Tape punch 75 ch.p.s., including 3.0 m cable (Facit type 4070)	P803-950	rack, 6U		
P804-001	Tape punch 150 ch.p.s., including 3.0 m cable (Facit type 4060)	P803-950	rack, 7U	-	-
P805-150	Punched tape reader/punch combination resp. 333 ch.p.s./75 ch.p.s. incl. control units and 3.0 m cable	Processor	rack, 9U 2 I/O cards A	+5V, 0.92A -5V, 0.2A	
P803-950	Control unit for tape punch 75 ch.p.s. and 150 ch.p.s.	Processor	1 I/O card A	+5 V, 0,4 A	
	CARD EQUIPMENT; P850M, P855M, P860M				
P806-001	Card reader 250 c.p.m., including 7.5 m cable (Philips type P115)	P806-950	E	-	6
P806-950	Control unit for card reader 250 c.p.m.	Processor	1 I/O card, A	+5V, 0.52A	-
	LINE PRINTER EQUIPMENT; P850M, P855M, P860M				
P810-001	Line printer 356 l.p.m., 80 col., 64 character drum, including 7.5 m cable (Data Products type 2310)	P810-950	E	-	-
P811-001	Line printer 245 l.p.m., 132 col, 64 character drum, including 7.5 m cable (Data Products type 2420)	P810-950	E	-	-
P812-001	Line printer 670 l.p.m., 132 col., 64 character drum, including 7.5 m cable (Data Products type 2440)	P810-950	E	-	-
P810-950	Control unit for line printer (245, 356 and 670 l.p.m.)	Processor	1 I/O card, A	+5V, 0.4A	-

Type number	*Description*	*Pre-requisites*	*Mounting code*	*Power requirements*	*Note*
	PLOTTER EQUIPMENT; P855M, P860M				
P813-001	Plotter, 11 inch plotting width, 0.1 mm step size, 300 steps per sec., including 7.5 m cable (Calcomp type 565)	P813-950	E	-	-
P813-002	Plotter, 28.55 inch plotting width, 0.1 mm step size, 300 steps per sec., including 7.5 m cable (Calcomp type 563)	P813-950	E	-	-
P813-950	Control unit for plotter, 11 inch or 28.55 inch plotting width	Processor	1 I/O card, A	+5V, 0.35A -5V,0.20A	7
	TYPEWRITER EQUIPMENT; P850M, P855M, P860M				
P841-001	I/O typewriter, 10 ch.p.s. - light duty, with punched tape, including 7.5 m cable (Teletype ASR 33)	P841-950	E	-	-
P841-002	I/O typewriter, 10 ch.p.s. - heavy duty, with punched tape including 7.5 m cable (Teletype ASR-35)	P841-950	E	-	-
P841-003	I/O typewriter, 10 ch.p.s. - light duty, including 7.5 m cable (Teletype KSR-33)	P841-950	E	-	-
P841-004	I/O typewriter, 10 ch.p.s. - heavy duty, including 7.5 m cable (Teletype KSR-35)	P841-950	E	-	-
P841-950	Control unit for I/O typewriter	Processor	1 I/O card, A	+5V, 0.6A	-
	DISPLAY EQUIPMENT; P850M, P855M, P860M				
P818-950	Teletype compatible display control unit with variable speeds and C.C.I.T.T. interface	Processor	1 I/O card, A	+5V, 1A	-
	DISC EQUIPMENT; P855M, P860M				
P821-006	Disc unit, 560 k characters, 8 bits, fixed head including power supply and 3.5 m cable (Sagem type MS 300-128)	P821-055	rack, 11U	-	-
P821-055	Control unit for 4 fixed head disc units	P849-015 /-031	rack, 3U C	self contained	-
P822-001	Disc unit, 2.7 million characters, 8 bits, moving head. Includes power supply, 3.5 m cable, and telescopic slides (Philips type X1210). Excludes cartridge	P822-055	rack, 9U	-	6

Type number	*Description*	*Pre-requisites*	*Mounting code*	*Power requirements*	*Note*
P822-055	Control unit for 2 moving head disc units 2.7M characters, 8 bits P822-001	P849-015 /-031	rack, 3U C	self contained	-
P822-100	Disc cartridge for P822-001 moving head disc (Philips type XMX1416)	-	-	-	-
	MAGNETIC TAPE EQUIPMENT; P855M, P860M				
P831-002	Tape transport unit, 9 track, 25 i.p.s. i.p.s., 800 b.p.i., 10.5 inch reels read after write operation, recording method: N.R.Z.I., IBM compatible format (incl. hinges for rack mounting and 3.0 m cable) (Pertec type 6840/9 25 i.p.s.)	P831-010	rack, 14U	-	16
P831-004	Tape transport unit, 9 track, 45 i.p.s., 800 b.p.i., 10.5 inch reels read after write operation, recording method: N.R.Z.I. IBM compatible format. (incl. hinges for rack mounting and 3.0 m cable) (Pertec type 6840/9 45 i.p.s.)	P831-010	rack, 14U	-	16
P831-055	Control unit for up to 4 magnetic tape transports	P849-015	rack, 3U C	self contained	17
P831-010	Formatter for up to 4 magnetic tape transports P831-002 (Pertec type F849-20/13.9) incl. telesc. slides for rack mounting, 1.5 m cable to c.u. and 3.0 m cable to mag. tape unit	P831-055	rack, 2U	self contained	16
P831-020	Formatter for up to 4 magnetic tape transports P831-004 (Pertec type F849-36/25.02) incl. telesc. slides for rack mounting, 1.5 m cable to c.u. and 3.0 m cable to mag. tape unit	P831-055	rack, 2U	self contained	16
	CASSETTE TAPE EQUIPMENT; P850M, P855M, P860M				
P833-001	Cassette tape drive unit, 7.5 i.p.s., 800 b.p.i., including 1 m cable (Philips type ELA)	P833-050 P833-010	-	+5V, 1.8A +24V, 1.5A	6,8
P833-050	Control unit for 4 cassette tape drive units. (incl. power supply +5V for four drive units)	P833-015	rack, 3U C	self contained	8
P833-010	Equipment shelf with space for two cassette tape drive units. (incl. power supply +24V for two drive units)	P849-015	rack, 3U		
P833-100	Tape cassette for P833-001	-		-	-

Type number	*Description*	*Pre-requisites*	*Mounting code*	*Power requirements*	*Note*
	MODULAR POWER SUPPLY:				
P849-020	Rectifier, capable of driving either 2★ P849-022 or 2★ P849-122 or 2★ P849-322 or 1★ P849-022 and 1★ P849-122 or 1★ P849-022 and 1★ P849-322 or 1★ P849-122 and 1★ P849-322	P849-010 /-019	-	-	-
P849-021	Rectifier, capable of driving either 2★ P849-222 or 2★ P849-322 or 1★ P849-222 and 1★ P849-322	P849-010 /-019			
P849-022	Stabilizer card, incl. 0.5 m cable supplies +6V, 4A; −6V, 3.5A; −12V, 0.2A (applicable in Data Communication equipm.)	P849-020	-	-	18
P849-122	Stabilizer card, incl. 0.5 m cable supplies +5V, 7.6A; −12V, 0.2A (applicable in Data Communication equipm.)	P849-020	-	-	18
P849-222	Stabilizer card, incl. 0.5 m cable +24V, 1.5A; +5V, 4A; −5V, 0.5A (applicable in DIOS equipm.)	P849-021	-	-	18
P849-322	Stabilizer card, incl. 0.5 m cable supplies +5V, 7.6A; −5V, 0.5A (general purpose)	P849-020 /-021	-	-	18
P849-032	Marginal check and indicator lamp option for stabilizer P849-022	P849-022	-	-	-
P849-132	Marginal check and indicator lamp option for stabilizer P849-122	P849-122	-	-	-
P849-232	Marginal check and indicator lamp option for stabilizer P849-222	P849-222	-	-	-
P849-332	Marginal check and indicator lamp option for stabilizer P849-322	P849-322	-	-	-
P849-033	Overvoltage protection option for stabilizer P849-022	P849-022	-	-	-
P849-133	Overvoltage protection option for stabilizer P849-222	P849-222	-	-	-
	EQUIPMENT SHELVES:				
P849-010	Equipment shelf with space for 4 I/O cards, one rectifier, one stabilizer, including I/O bus connectors, wiring, fan and 1 prewired slot for I/O bus extender.	P849-015 /-031	rack, 3U	-	-

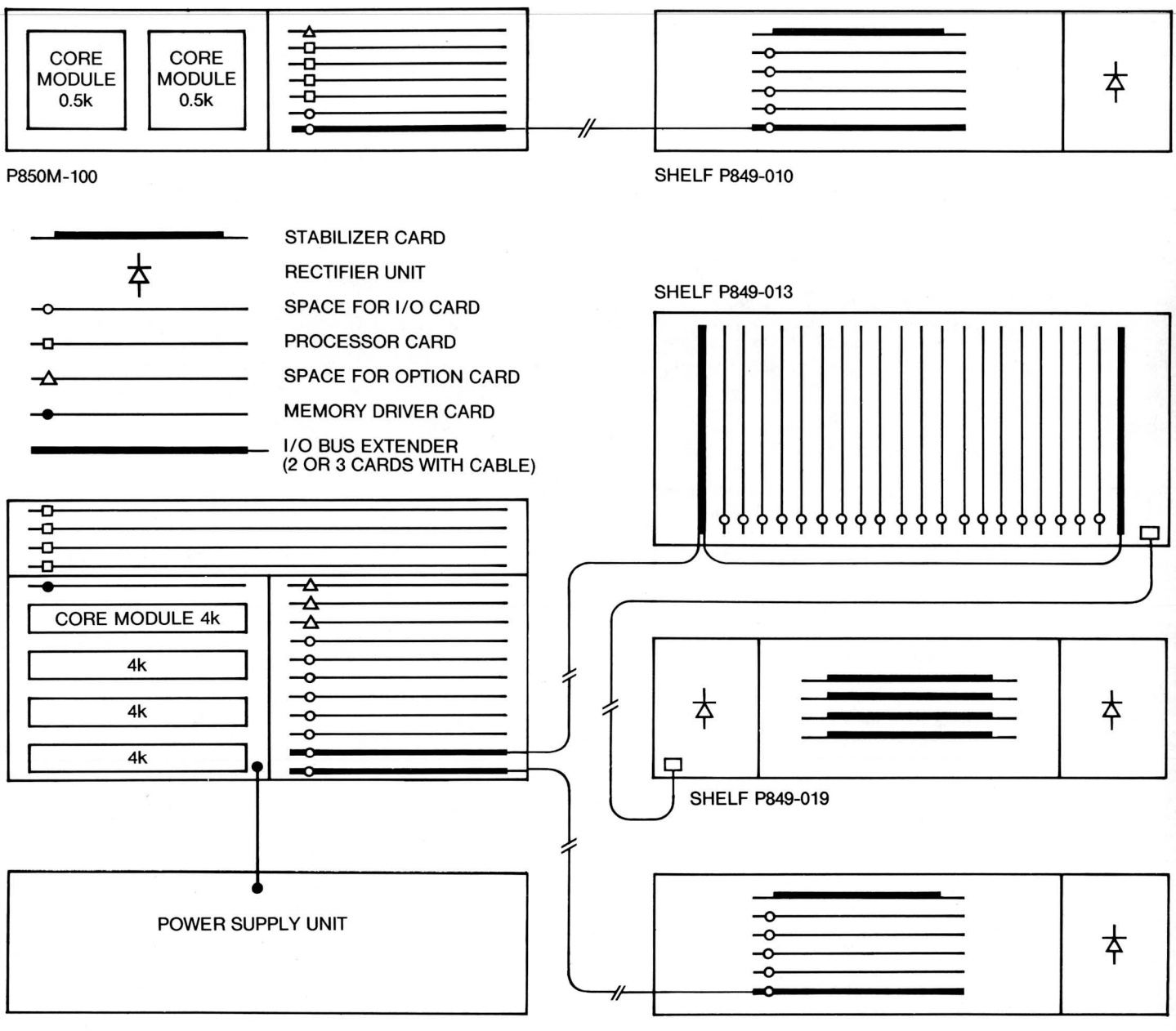
Type number	*Description*	*Pre-requisites*	*Mounting code*	*Power requirements*	*Note*
P849-011	Equipment shelf with space for 22 I/O cards with I/O bus connectors, without wiring.	-	rack, 5U	-	-
P849-013	Equipment shelf with space for 20 I/O cards, including I/O bus connectors, wiring and 2 prewired slot for I/O bus extender.	P849-019 P849-115	rack, 5U	-	-
P849-018	Equipment shelf with space for 10 I/O cards, including I/O bus connectors, wiring and 1 prewired slot for I/O bus extender.	P849-019 P849-015 /-031	rack, 5U	-	-
P849-019	Equipment shelf with space for 2 rectifiers and up to 4 stabilizers, including connectors, wiring and fan.	-	rack, 3U	-	-
	CABINETS AND ACCESSORIES:				
P849-016	Basic 19 inch Cabinet, incl. side panels and rear door usable weigth 36 u, usable depth 27.5 inch	-	-	-	-
P849-116	Extension 19 inch Cabinet 36 Units, incl. rear door, usable heigth 36 U, usable depth 27.5 inch	-	-	-	-
P849-017	Basic 19 inch Cabinet 36 Units, incl. 2 fans; 10 Amp power distribution panel; side panels and rear door, usable heigth 36 U, usable depth 27.5 inch	-	-	-	-
P849-117	Extension 19 inch Cabinet 36 Units, incl. 2 fans and rear door, usable heigth 36 U, usable depth 27.5 inch.	-	-	-	-
P849-040	Ventilation unit 2 fans	-	-	-	-
P849-041	Ventilation unit 4 fans	-	-	-	-
P849-042	Power distribution panel 10 Amp	-	-	-	-
P849-043	Power distribution panel 25 Amp	-	-	-	-
P849-044	Telescopic slides general purpose (for C.P.U.'s, multicard control units; equipment shelves.)	-	-	-	-
P849-045	Telescopic slides for fixed head disc unit	-	-	-	-
P849-046	Front panel, height 1 Unit	-	-	-	-
P849-047	Front panel, height 3 Units	-	-	-	-
P849-048	Front panel, height 5 Units	-	-	-	-
P849-049	Front panel, height 7 Units	-	-	-	-

HARDWARE

Type number	*Description*	*Pre-requisites*	*Mounting code*	*Power requirements*	*Note*
	CARDS AND CONNECTORS; P850M, P855M, P860M				
P849-002	General purpose wiring card with I/O bus connectors and 2 I/O connectors. Blank cards with hole patterns for 14, 16, 24 and 36 pin I.C.'s and discrete components. Capacity: 24 (14, 16 pin) dual in line packages and 5 (24, 36 pin) L.S.I. packages.	-	-	-	-
P849-005	Male card connector. A spare connector for mounting on a customer's I/O card.	-	-	-	-
P849-006	Female card connector. A spare connector for mounting on a customer's I/O card.	-	-	-	-
P849-012	General purpose card with I/O bus control logic, I/O bus connectors and 1 I/O connector.	Processor	1 I/O card, A	+5V,0.1A	-
	EXTENDERS AND ADAPTORS				
P849-015	I/O bus extender, including 5 m. cabling, the necessary transmitting-receiving amplifiers and connectors for extending programmed and multiplex channel beyond the standard cabinet.	Processor	2 I/O cards (of which 1 in the processor)	in processor: +5V, 1.6A in equipment shelf: +5V, 2.2A	4
P849-115	I/O bus extender, including 5 m. cable, the necessary transmitting-receiving amplifiers, terminator and connectors, for extending the programmed and multiplex channel to the equipment shelf for 20 I/O cards.	Processor	3 I/O cards (of which 1 in the processor)	in processor: +5V, 1.6A in equipment shelf: +5V, 2.9A	
P849-031	I/O bus extender, including 5 m. cabling, the necessary transmitting-receiving amplifiers and connectors for extending DMA channel beyond the standard cabinet.	Processor	2 I/O cards (of which 1 in the processor)	in processor: +5V, 1.6A in equipment shelf: +5V, 2.2A	4
	MAINTENANCE EQUIPMENT				
P849-003	Extension card for testing P855M and P860M central processor cards.	-	-	-	-
P849-004	Extension card for testing P850M central processor cards and P850M, P855M, P860M control unit cards and option cards	-	-	-	-
P849-050	Portable panel with cabinet, cables and connectors for P850M, P855M, and P860M for periodic maintenance and programming.	Processor	-	+5V, 0.8A	-

The following diagrams show the interconnection possibilities and layout of the various equipment shelves and modular power supply available.

PLAN OF INTERNAL LAYOUT



Type number	*Description*	*Pre-requisites*	*Mounting code*	*Power requirements*	*Note*
	ANALOG AND DIGITAL INPUT-OUTPUT SYSTEM; P850M, P855M, P860M (this equipment is T.T.L. compatible)				
	Control cards				
P839-050	Digital input output control unit for 2 gated 16-bit input words and 2 buffered 16-bit output words for programmed channel connection (DIOC)	Processor	1 I/O card, A	+5V, 0.8A	-
P839-150	Digital input control unit for 4 gated 16-bit input words for programmed channel connection (DIC)	Processor	1 I/O card, A	+5V, 0.5A	-
P839-250	Digital output control unit for 4 buffered 16-bit output words for programmed channel connection (DOC)	Processor	1 I/O card, A	+5V, 1A	-
P838-050	Control unit (PC1202/00 type M4S), for Modular Input Output System; MIOS.	Processor	1 I/O card, A	+5V, 0.8A	-
P838-150	Control unit (PC1203/00 type M4D), for up to 16 digital input and/or output modules of MIOS.	Processor	1 I/O card, A	+5V, 1.2A	-
P838-250	Control unit (PC1204/00 type M4C) with space for one Analog to Digital Convertor, a buffered sample and hold amplifier and/or one Digital to Analog Convertor	Processor	1 I/O card, A	min: +5V, 0.7A max: +5V, 2.4A	9
	Input options for digital input-output system: DIOC, DIC, DOC				
P839-001	Input buffer card for 2 words, 16 bits each	P839-050 /-150	1 I/O card,	+24V, 0.05A +5V, 0.5A	-
P839-002	Input adapter card for 2 words, 16 bits each. Low threshold 1.5V. Input voltage level adaptation. Max. voltage ratings ±48V	P839-050 /-150	1 I/O card, A	+24V, 0.05A; +5V, 0.5A	-
P839-003	Input adapter card for 2 words, 16 bits each. High threshold 5.9V. Input voltage level adaptation. Max. voltage rating ±48V.	P839-050 /-150	1 I/O card, A	+24V, 0.05A; +5V, 0.5A	
P839-004	Input isolator card for 2 words, 16 bits each. Can be used with Input buffer and Input change of state detector options.	P839-050 /-150	1 I/O card, A	+5V, 0.1A	-
P839-005	Input buffer and change of state detector card for 2 words, 16 bits each.	P839-050 /-150	1 I/0 card, A	+24V, 0.05A; +5V, 0.5A	-
P839-006	Input buffer and adapter card for 2 words, 16 bits each. Low threshold 1.5V.	P839-050 /-150	1 I/O card, A	+24V, 0.05A; +5V, 0.5A	-

Type number	*Description*	*Pre-requisites*	*Mounting code*	*Power requirements*	*Note*
P839-007	Input buffer and adapter card for 2 words, 16 bits each. High threshold 5.9V.	P839-050 /-150	1 I/O card, A	+24V, 0.05A; +5V, 0.5A	-
P839-008	Input buffer, change of state detector and adapter card for 2 words, 16 bits each. Low threshold 1.5V.	P839-050 /-150	1 I/o card, A	+24V, 0.05A; +5V, 0.5A	-
P839-009	Input buffer, change of state detector and adapter card for 2 words, 16 bits each. High threshold 5.9V.	P839-050 /-150	1 I/O card, A	+24V, 0.05A; +5V, 0.5A	-
	Output options for digital input-output system: DIOC, DIC, DOC				
P839-010	Output level adaption card for 2 words, 16 bits each. No isolation. Low threshold 1.5V.	P839-050 /-250	1 I/O card, A	+24V, 0.004A +5V, 0.04A output voltage to be provided by the user	-
P839-011	Output isolator and level adjustment card for 2 words, 16 bits each.	P839-050 /-250	1 I/O card, A	+5V, 0.6A output voltage to be provided by the user	-
P839-012	Output level adaption card for 2 words, 16 bits each. No isolation. High threshold 5.9V.	P839-050 /-250	1 I/O card A	+24V, 0.004A +5V, 0.04A output voltage to be provided by the user	-
	DATACOMMUNICATION EQUIPMENT; P850M, P855M, P860M				
P845-050	Multiple line control unit for 8 full duplex lines, 50 to 300 b.p.s., with interface according to CCITT recommendation V 24 (MELCU)	P848-001 P849-030 P849-026 /-027 /-028	1 I/O card, A	+6V, 0.7A +5V, 0.3A -6V, 0.32A -12V, 0.02A	7
P845-150	Multiple line control unit for 8 full duplex lines 50 to 300 b.p.s. with T.T.L. compatible interface	P848-001	1 I/O card, A	+5V, 0.55A -12V, 0.02A	7
P845-102	Modem interface for 8 modems with interface according to C.C.I.T.T. recommendation V 21 (MIU)	P845-050 P849-126 /-127 /-128	1 I/O card, A	+6V, 1.5A +5V, 0.4A -6V, 0.65A	7

HARDWARE

Type number	*Description*	*Pre-requisites*	*Mounting code*	*Power requirements*	*Note*
P846-950	Asynchronous line control unit for a single line, half duplex, 600-2400 b.p.s. with interface according to CCITT recommendation V23 (ASYLCU)	P848-001 P849-029 /-024 /-025	1 I/O card, A	+6V, 0.3A +5V, 0.6A -6V, 0.12A -12V, 0.02A	7
P848-001	Clock pulse card for P845-050 and/or P846-950 for standard speeds (50, 75, 100, 110, 150, 200, 300, 600, 1200, 2400 b.p.s.) (CPC)	-	1 I/O card, A	+5V, 1A	-
P848-002	Option for extending the range of speeds with 134,5 b.p.s. (CPCO)	P848-001	-	-	-
P847-950	Synchronous line control unit for a single line, half duplex, 600-50.000 b.p.s. with interface according to CCITT recommendation V24 (SYLCU)	P849-029 /-023 /-024 /-025	1 I/O card, A	+6V, 0.3A +5V, 0.75A -6V, 0.12A -12V, 0.02A	7
P847-101	Option for detection of special characters and CRC computation for BSC procedure ASCII or EBCDIC. (DERCO).	P847-950	1 I/O card, A	+5V, 0.85A	-
P849-023	Cable between modem panel P849-029 and single line control unit (P846-950, P847-950), incl. connectors. Length 1m.	-	-	-	-
P849-024	Cable between modern panel P849-029 and single line control unit (P846-950, P847-950), incl. connectors. Length 2m.	-	-	-	-
P849-025	Cable between modem panel P849-029 and single line control unit, (P846-950, P847-950), incl. connectors. Length 5m.	-	-	-	-
P849-026	Cable between modem panel P849-030 and multiple line control unit, (P845-050), incl. connectors. Length 1m.	-	-	-	10
P849-027	Cable between modem panel P849-030 and multiple line control unit, (P845-050), incl. connectors. Length 2m.	-	-	-	10
P849-028	Cable between modem panel P849-030 and multiple line control unit, (P845-050), incl. connectors. Length 5m.	-	-	-	10
P849-029	Modem panel for 8 synchronous/asynchronous line control units for external connection. Connector type: Cannon	-	-	-	-
P849-030	Modem panel for one multiple line control unit P845-050 with or without modem interface unit for ,external connection. Connector type: Cannon	-	-	-	-
P849-126	Cable between modem panel P849-030 and both multiple line control unit (P845-050) and modem interface unit, (P845-102), including connectors. Length 1m.	-	-	-	10

Type number	*Description*	*Pre-requisites*	*Mounting code*	*Power requirements*	*Note*
P849-127	Cable between modem panel P849-030 and both multiple line control unit (P845-050), and modem interface unit, (P845-102), including connectors. Length 2m.	-	-	-	10
P849-128	Cable between modem panel P849-030 and both multiple line control unit (P845-050) and modem interface unit (P845-102), including connectors. Length 5m.	-	-	-	10
P849-226	Cable between two synchronous line control units P847-950 and modem panel P849-029 for full duplex connection (occupies one position on the modem panel) including connectors. Length 1m.	-	-	-	-
P849-227	Cable between two synchronous line control units P847-950 and modem panel P849-029 for full duplex connection (occupies one position on the modem panel) including connectors. Length 2m.	-	-	-	-
P849-228	Cable between two synchronous line control units P847-950 and modem panel P849-029 for full duplex connection (occupies one position on the modem panel) including connectors. Length 5m.	-	-	-	-
P849-326	Cable between modem panel (P849-029 or P849-030) and modem according to C.C.I.T.T. recommendation V24. Includes one connector for connection to the modem panel. Length 5m.	-	-	-	-
P849-327	Cable between modem panel (P849-029 or P849-030) and modem according to C.C.I.T.T. recommendation V24. Includes one connector for connection to the modem panel. Length 10m.	-	-	-	-
P849-328	Cable between modem panel (P849-029 or P849-030) and modem according to C.C.I.T.T. recommendation V24. Includes one connector for connection to the modem panel. Lenght 15m.	-	-	-	-

SOFTWARE

Type number	*Description*	*Core requirements K-words*	*prerequisite*	*note*
	P850M SOFTWARE			
PV170-001	P850M software package consisting of:			
	Executive System			
PV163-001	Executive system, consisting of:			
	- I/O drivers for I/O typewriter P841-001, Papertape reader P801-001 or P802-001, Papertape punch P803-001 or P804-001	0.6	-	14
	- interrupt handler	0.1	-	-
	- arithmetic routines	0.2	-	-
	Basic software			
PV160-005	Assembler	2.0	-	14
PV161-003	Loader	0.3	-	14
PV165-001	Update Package	2.0	-	14
	Device handlers (on non interrupt base)			
PV164-001	Driver for Cardreader P806-001	0.3	PV163-001	11
PV164-002	Driver for lineprinter P810-001, P811-001 or P812-001	0.2	PV163-001	11
PV164-003	Driver for cassette tape P833-001	0.7	PV163-001	11
	Utilities			
PV165-002	Binary core dump on papertape punch P803-001 or P804-001 or on punch of I/O typewriter P841-001 or 0841-002	0.2	-	14
PV165-003	ASCII core dump on I/O typewriter P841-001, P841-002, P841-003 or P841-004 or on lineprinter P810-001, P811-001 or P812-001	0.2	-	14

Software survey P855-P860

Software group	*Hardw. multipl.*	*group no.*	*core size k-words*	
stand alone software	no	PV170-100	4	- System software delivered in 4×4 format
	yes	PV170-101	4	- I/O procedures are based on 4×4 format - PTR/PTP recommended for performance increase
Basic Operating System	no	PV170-102	8	- System software delivered in 8+8 format
	no	PV170-103	12	- PTR/PTP prerequisite
	no	PV170-104	>16	- Special 4×4 format oriented system only on request
	yes	PV170-103	8	
	yes	PV170-104	12	
Disc operating System	no	PV170-105	12	- System software delivered in 8+8 format
	no	PV170-106	>16	- PTR/PTP prerequisite
	yes	PV170-106	12	- I/O procedures are based on 8+8 format
Basic Real Time System		PV170-107	⩾8	- System software delivered in 8+8 format - PTR/PTP prerequisite - Special 4×4 format oriented system only on request
Disc Real Time System		PV170-110	⩾8	- System software delivered in 8+8 format - PTR/PTP prerequisite - I/O procedures are based on 8+8 format
Data Communication Systems	-	PV170-702 PV170-705		- PV 170-702 and PV 170-705 are extensions to BOS systems and DOS systems (Data communication monitor and drivers +BSC procedure)
		PV170-707 PV170-710		- PV 170-707 and PV 170-710 are identical with the related systems above: PV 170-707 – PV 170-107 and PV 170-710 – PV 170-110 except for the monitor and are extended with drivers for MELCU, SYLCU and SYLCU with special character detection and CRC computation for BSC procedure

note 1 8+8 format only usable when PTR is present
PTP necessary for object output
PTR = Papertape reader PTP = papertape punch

note 2 Software may be ordered in two ways

a) all software required for a given system can be ordered by specifying the software Group appropriate to your system e.g. for a 20k Operating System without disc, merely select PV107-104
Software drivers for peripherals have to be specified separately but in combination with a software package

b) Indivudual items of software may be ordered from the software section of this catalogue. In this case software drivers for peripherals must also be specified.

SOFTWARE

related software items \ Software groups	stand alone Software		Basic Operating Systems			Disc Operating Systems		Basic Real Time Systems	Disc Real Time Systems	Data Communication Systems			
	PV170-100	PV170-101	PV170-102	PV170-103	PV170-104	PV170-105	PV170-106	PV170-107	PV170-110	PV170-702	PV170-705	PV170-707	PV170-710
PV160-001 Assembler	•	•											
PV160-002 Assembler			•										
PV160-003 Extended Assembler				•	•								
PV160-006 Disc Assembler						•	•						
PV161-003 Loader	•	•											
PV161-004 Linkage Editor	•	•											
PV161-005 Linkage Editor			•	•	•								
PV161-007 Disc Linkage Editor						•	•						
PV162-001 Basic Fortran		•											
PV162-002 Full Fortran					•								
PV162-004 Disc Full Fortran							•						
PV162-005 Basic Fortran				•									
PV162-006 Disc Basic Fortran						•							
PV162-010 Full Fortran Transcoder				•	•	•	•						
PV163-002 Basic Monitor			•	•	•								
PV163-003 Basic Real Time Monitor								•					
PV163-004 Disc Operating Monitor						•	•						
PV163-005 Disc Real Time Monitor									•				
PV164-004 I/O Package ASR. PTR/P	•	•											
PV165-002 Binary Core Dump	•	•	•	•	•	•	•	•	•			•	•
PV165-003 ASC11 Core Dump	•	•	•	•	•	•	•	•	•			•	•
PV165-005 Update Package	•	•											
PV165-006 Update Package			•	•	•								
PV165-007 Premark on MH Disc						•	•		•				•
PV165-008 Core dump to disc						•	•		•				•
PV165-009 Labelling mag. tape and cassette			•	•	•	•	•	•	•			•	•
PV165-010 Text Editor			•	•	•								
PV165-011 Disc Text Editor						•	•						
PV165-012 Debugging Package			•										
PV165-013 Extended Debugging Package				•	•								
PV165-015 Disc Ext. Debugging Package						•	•						
PV166-001 Mathematical Library					•		•						
PV166-002 Math. Library		•		•		•							
PV166-003 Real Time Fortran Library								•	•			•	•
PV167-001 Sysgen Basic Monitor			•	•	•								
PV167-002 Sysgen for Basic R.T Monitor								•					
PV167-003 Sysgen for Disc Oper. Mon.						•	•						
PV167-004 Sysgen for Disc R.T Monitor									•				
PV163-702 Basic DC Monitor										•			
PV163-703 D.C. Real Time Monitor												•	
PV163-704 Disc D.C. Monitor											•		
PV163-705 Disc D.C. Real Time Monitor													•
PV107-003 Line procedure package										•	•	•	•

Type number	*Description*	*Core requirements K-words*	*prerequisite*	*note*
	P855M P860M - STAND-ALONE SOFTWARE			
PV160-001	Assembler	3.5	-	12
PV161-003	Loader	0.3	-	12
PV161-004	Linkage Editor	3.5	-	12
PV165-005	Update Package	2.0	-	12
PV165-002	Binary core dump on papertape punch P803-001 or P804-001 or on punch of I/O typewriter P841-001 or P841-002	0.2	-	12
PV165-003	ASCII core dump on I/O typewriter P841-001, P841-002, P841-003 or P841-004	0.2	-	12
PV162-001	Basic FORTRAN	4.0	PV164-004	-
PV164-004	I/O package on non interrupt base for - I/O typewriter P841-001, P841-002, P841-003 or P841-004 on programmed channel - Papertape reader P801-001 or P802-001 on programmed channel - Papertape punch P803-001 or P804-001 on programmed channel	0.8	-	12
PV166-002	Mathematical library for Basic FORTRAN			

SOFTWARE

Type number	*Description*	*Core requirements K-words*	*prerequisite*	*note*
	OPERATING SYSTEM SOFTWARE FOR P855M, P860M			
	Monitors			

PV163-002	Basic Operating Monitor, including:
	- modules with system generation facility
	- I/O drivers on interrupt base for
	  - I/O typewriter P841-001, P841-002, P841-003 or P841-004 on programmed channel
	  - papertape reader P801-001 or P802-001 on programmed channel
	  - papertape punch P803-001 or P804-001 on programmed channel
	- Initial Program Loader
		1-3
		13
			PV167-001	

PV163-003	Basic real time monitor, including:
	- modules with system generation facility
	- I/O drivers on interrupt base for
	  - I/O typewriter P841-001, P841-002, P841-003 or P841-004 on programmed channel
	  - papertape reader P801-001 or P802-001 on programmed channel
	  - papertape punch P803-001 or P804-001 on programmed channel
	- Initial Program Loader
		3-5	PV167-002	13

PV163-004	Disc operating monitor, including:
	- modules with system generation facility
	- I/O drivers on interrupt base for
	  - I/O typewriters P841-001, P841-002, P841-003 or P841-004 on programmed channel
	  - papertape reader P801-001 or P802-001 on programmed channel
	  - papertape punch P803-001 or P804-001 on programmed channel
	  - moving head disc P822-001 or fixed head disc P821-006 with 206 words sectorsize on Multiplex channel
	- Initial Program Loader
	- Control Command Interpreter
		3-5	PV167-003	13

PV163-005	Disc real time monitor, including:
	- modules with system generation facility
	- I/O drivers on interrupt base for
	  - I/O typewriter P841-001, P841-002, P841-003 or P841-004 on programmed channel
	  - papertape reader P801-001 or P802-001 on programmed channel
	  - papertape punch P803-001 or P804-001 on programmed channel
	  - moving head disc P822-001 or fixed head disc P821-006 with 206 words sectorsize on Multiplex or DMA channel
	- Initial Program Loader
		3-5	PV167-004	13

Type number	*Description*	*Core requirements K-words*	*prerequisite*	*note*
PV163-010	Small Real Time Monitor - No System Generation necessary - includes loader (PV161-003) and I/O drivers for ASR, PTR, PTP			
	DATA COMMUNICATION PACKAGES			
PV163-702	Basic Data Communication Monitor identical to Basic Operating Monitor (PV163-002) including monitor extension for data communication, drivers for MELCU, SYLCU and SYLCU with special character detection and CRC computation for BSC procedure.			
PV163-703	Data Communication Real Time Monitor identical to Basic Real Time Monitor (PV163-003) including, monitor extension for data communication, drivers for MELCU, SYLCU and SYLCU with special character detection and CRC computation for BSC procedure.			
PV163-704	Disc Data communication Monitor identical to Disc operating Monitor (PV163-004) including monitor extension for data communication, drivers for MELCU, SYLCU and SYLCU with special character detection and CRC computation for BSC procedure.			
PV163-705	Disc Data communication Real Time Monitor identical to Disc operating Real Time Monitor including monitor extension for data communication, drivers for MELCU, SYLCU and SYLCU with special character, detection and CRC computation for BSC procedure.			
PV107-003	Line procedure packages for synchronous line control unity SYLCU, based on BSC	1-5		
	Device handlers (on interrupt basis)			
PV164-005	Driver for cassette tape P833-001 on Multiplex channel	0.7		
PV164-006	Driver for card reader P806-001 on Multiplex channel	0.3		
PV164-007	Driver for line printer P810-001, P811-001 or P812-001 on Multiplex channel	0.2		
PV164-008	Driver for Magnetic tape P831-002 or P841-004 on Multiplex channel	0.6		
PV164-009	Driver for up to 8 moving head discs P822-001 on Multiplex channel	0.4		
PV164-010	Driver for up to 8 fixed head discs P821-006 with 206 words sectorsize on Multiplex channel	0.3		

SOFTWARE

Type number	*Description*	*Core requirements K-words*	*prerequisite*	*note*
PV164-011	Driver for Plotter P813-001 or P813-002 on Multiplex channel	0.2		
PV164-012	Driver for moving head disc P822-001 on DMA channel	0.4		
PV164-013	Driver for fixed head disc P821-006 with 206 words sectorsize on DMA channel	0.3		
	SOFTWARE AIDS FOR P855M, P860M - MONITOR ORIENTED SOFTWARE			
	System generators			
PV167-001	System generator for Basic Monitor	4	-	-
PV167-002	System generator for Basic Real Time Monitor	4	-	-
PV167-003	System generator for Disc operating Monitor	4	-	-
PV167-004	System generator for Disc Real Time Monitor	4	-	-
	Utilities			
PV165-002	Binary Core dump on papertape punch P803-001 or P804-001 or on punch of I/O typewriter P841-001 or P841-002	0.2	-	-
PV165-003	ASCII core dump on I/O typewriter P841-001, P841-002, P841-003 or P841-004 on lineprinter P810-001, P811-001 or P812-001	0.2	-	-
PV165-007	PREMARK on 2.7 Mchar. Moving head disc P822-001	0.5	-	-
PV165-009	Labeling for magnetic tape P831-002 or P831-004 and cassette tape P833-001	0.5	-	-
PV165-008	Core dump to Moving head P822-001 or Fixed head disc P821-006 with 206 words sectorsize	0.5	-	-

Type number	*Description*	*Core requirements K-words*	*prerequisite*	*note*
	System software for: Basic Operating Monitor for P855M, P860M			
PV160-002	Assembler	3.0		
PV161-005	Linkage Editor	3.1		
PV165-010	Text Editor	2.5		
PV165-012	Debugging Package	2.0		
PV165-006	Update Package	1.3		
PV162-005	Basic FORTRAN	5.0		
PV166-002	Mathematical library for Basic FORTRAN			
PV160-003	Extended assembler - single buffering	4.5 4.8		
PV165-013	Extended Debugging Package	4.0		
PV160-002	Full FORTRAN	8.0		
PV166-001	Mathematical library for Full FORTRAN			
PV162-010	Full Fortran Transcoder			

SOFTWARE

Type number	*Description*	*Core requirements K-words*	*prerequisite*	*note*
	System software for: Disc operating Monitor			
PV165-011	Disc Text Editor	2.5		
PV165-014	Disc Debugging Package	2.0		
PV161-007	Disc Linkage Editor	3.1		
PV162-006	Disc Basic FORTRAN,	5.0		
PV166-002	Mathematical library for Basic FORTRAN			
PV160-006	Disc Assembler	5.0		
PV165-015	Disc extended Debugging Package	4.0		
PV162-004	Disc Full FORTRAN	8.0		
PV166-001	Mathematical library for Full FORTRAN			
PV162-010	Full Fortran Transcoder			
	OPTION FOR REAL TIME MONITORS:			
PV166-003	Real Time FORTRAN library			

Type number	*Description*	*Core requirements K-words*	*prerequisite*	*note*
	HARDWARE TEST PROGRAMS			
PV170-200	**P850 CPU test packages consisting of**			
PV150-001	P850 CPU instructions test			
PV150-005	P850 first memory module test			
PV150-006	P850 extended memory test			
PV170-202	**P850 control unit test package consisting of**			
PV152-001	P850 test monitor			
PV152-011	P850 Testprogram for punched tape reader			
PV152-013	P850 Testprogram for punched tape punch			
PV152-016	P850/P855/P860 Testprogram for cardreader			
PV152-021	P850/P855/P860 Testprogram for lineprinter			
PV152-031	P850/P855/P860 Testprogram for ASR			
PV152-056	P850/P855/P860 Testprogram for cassette tape drive			
PV170-210	**P855/P860 CPU Test package consisting of**			
PV151-001	P855/P860 CPU test on P850 type instructions			
PV151-002	P855/P860 CPU test on additional instruction set			
PV151-003	P855/P860 test on HW Multiply/Divide instructions			
PV151-004	P855/P860 CPU test on instructionset W/100 HW Multiply/Divide			
PV151-005	P855/P860 Memory test			
PV151-011	P855/P860 Test on CPU options			
PV151-012	P855/P860 Test on standard 23 interrupt lines			
PV151-016	P855/P060 Test on Multiplex channel and Memory increment Data Break			
PV151-017	P855/P860 Direct Memory access channel			

TEST SOFTWARE

Type number	*Description*	*Core requirements K-words*	*prerequisite*	*note*
PV170-212	**P855/P860 control unit test package consisting of**			
PV152-002	P855/P860 Test monitor			
PV152-012	P855/P860 Testprogram for punched tape reader			
PV152-014	P855/P860 Testprogram for punched tape punch			
PV152-016	P850/P855/P860 Testprogram for cardreader			
PV152-021	P850/P855/P860 Testprogram for lineprinter			
PV152-026	P855/P860 Testprogram for plotter			
PV152-031	P850/P855/P860 Testprogram for ASR			
PV152-041	P855/P860 Testprogram for Fixed Head Disc			
PV152-046	P855/P860 Testprogram for Moving Head Disc			
PV152-051	P855/P860 Testprogram for magnetic tape drive			
PV152-056	P850/P855/P860 Testprogram for cassette tape drive			

Notes

1 The total power supplied to the processor, backpanel and options is shown.

2 Power consumption for different magnetic core sizes (P855M, P860M) in amperes.

Core size	+5V	−5V	+24V
4K	2.4	0.15	4.4
8K	3.3	0.25	5.2
12K	4.2	0.35	6.0
16K	5.1	0.45	6.8
20K	6.0	0.55	7.6
24K	6.9	0.65	8.4
28K	7.8	0.75	9.2
32K	8.7	0.85	10.0

3 The control panel interchangeable with the standard minipanel is intended for programming and/or debugging.

4 Only one can be selected.

5 The total number of controllers connected to the Direct Memory Access channel (DMA) **and** the Multiplex channel (MPX) is 15.
That means if two device controllers are operating on the DMA channel only 13 MPX sub-channel addresses are free for device controllers instead of 15.
Multi device controllers like **cassette tape, magnetic tap, DIOS, DIC, and DOC** always occupy a MPX-address even if they are connected to programmed channel.

6 These peripherals may also be purchased directly from the supplying Philips division at a lower price, as follows:
P801-001, P802-001 and P822-001 via Industry Group Peripheral Equipment
P833-001 via Main Industry Group E.L.A.
P806-001, the Philips P115 card reader, from the P350 series of office computers, supplied by Office Machine Division is not normally sold without its control unit.

7 Data communication cards and option cards of the digital I/O system as well as the plotter control unit card, require additional power when mounted **in** the processor cabinet (see power requirements). This is provided by the Modular Power supply unit. The unit is connected to the processor backpanel via a separate plug.

8 The cassette tape control unit is designed to supply sufficient power for 2 cassette tape drives. If 4 drives are used with 1 controller additional power has to be supplied by the modular power supply.

9. Component size on the card makes it necessary to reserve the space of 2 I/O slots.

10 If P845-050 (MELCU) and P845-102 (MIU) are used, only P849-126/-127/-128 is necessary for connection.

11 The Executive system is basically papertape oriented and includes therefor the necessary device handlers. Extension to other peripheral devices is possible by adding merely the required device handlers.

12 The Basic stand-alone software is papertape oriented (typewriter, papertape reader, papertape punch). The necessary drivers are included.

13 All the monitors are papertape oriented and include therefore the necessary device handlers. Extension to other peripheral devices is possible by adding merely the required device handlers. The disc based monitors will use the 2.7m characters moving head/fixed head disc as system library. Core requirements are given as low and high limits. The actual value depends on the required function.

14 P850 software is basically oriented to I/O typewriter, papertape reader and papertape punch.

15 For each MELCU line additional 15 words of core required.
For each SYLCU line additional 12 words of core required.

16 Mag. tape units are daisy chained. Cable between Formatter and first tape unit is 3.0 m. Cable between mag. tape units 3.0 m. A terminator is required when 1 up to 4 Mag. tape units are connected to a formatter. This terminator is included in the Formatter.

17 To the control unit one Formatter may be connected. If different tape speeds to one central processor are required, one control unit plus formatter is needed for each speed.

18 If two stabilizers are connected to one rectifier following rules should be applied.

Max output in Amp.

	+6 V	−6 V	−12 V	+5 V	−5 V	+24 V
Connected to 1 × P849-020						
2 × P849-022	8 A	7 A	0.4 A			
or 2 × P849-122			0.4 A	13 A		
or 2 × P849-322				13 A	0.5 A	
or 1 × P849-022 + 1 × P849-122	4 A	3.5 A	0.4 A	6.5 A		
or 1 × P849-022 + 1 × P849-322	4 A	3.5 A	0.2 A	6.5 A	0.5 A	
or 1 × P849-122 + 1 × P849-322			0.2 A	13 A	0.5 A	
Connected to 1 × P849-021						
2 × P849-222				8 A	0.5 A	2 A
or 2 × P849-322				13 A	0.5 A	
or 1 × P849-222 + 1 × P849-322				10.5 A	0.5 A	1 A

Codes

A. Mounts in the processor or a separate cabinet; uses 1 I/O slot. If an I/O card is mounted outside the processor cabinet, an equipment shelf with modular power and I/O bus extender, is necessary (see power requirements).

B. Mounts in the processor cabinet, dedicated location.

C. Self contained controller; equipment shelf with power supply and controller cards, rack mounting, 3U high. I/O bus extender to be selected if not specified.

D. Mounts in processor cabinet; 2 I/O slots are prewired for either the DMA channel or the programmed channel.

E. Free standing (line printer, card reader, teletype) or table top version (plotter).

Remark

1 Unit (U) equals 1¾ inch (= 44.45 mm).

Appendix 1

The hardware interrupt lines will be connected according to a standard layout. A user may specify his own layout, preferably at the time of ordering, although field changes are possible.
These changes from the standard layout will require slight software modifications.

Standard Interrupt Connections for P850M:

Standard:	1 level	2 lines:	0 Power Failure
			1 Stack Overflow/Link to Monitor
Optional:	P850M-031	6 lines:	2 Real Time Clock
			3 Cassette/Cardreader
			4 Punched Tape Reader
			5 High speed Punched Tape Punch
			6 A.S.R.
			7 Cardpunch
	P850M-032	8 lines:	8 unassigned
			9 unassigned
			10 unassigned
			11 unassigned
			12 unassigned
			13 Lineprinter
			14 plotter
			15 unassigned

Descending Priority 0 to 15

Standard Interrupt Connections for P855M, P860M

Standard:	8 levels	0 Power Failure
		1 Link to Monitor/Stack Overflow/Illegal code
		2 Real Time Clock
		3 Memory Increment Data Break (Optional)
		4 unassigned
		5 Common line all devices
		6 Memory Protection
		7 Control Panel

to level 5 common line: 16 lines:

15 unassigned
14 Card Reader
13 Punched Tape Reader 1
12 Punched Tape Reader 2
11 Cassette Tape Unit
10 Punched Tape Punch 1
9 Punched Tape Punch 2
8 ASR 1
7 ASR 2
6 Magnetic Tape Unit
5 Fixed Head Disc
4 Moving Head Disc 1
3 Moving Head Disc 2
2 Line Printer
1 Plotter
0 unassigned

Descending Priority 15 to 0

Optional P855M-031/levels 8 to 17 unassigned
P860M-031

Optional P855M-032/levels 18 to 27 unassigned
P860M-032

Optional P855M-033/levels 28 to 47 unassigned
P860M-033

This table shows the interrupt facilities, the type of I/O channel the number of device addresses used, the device adresses and standard bits of the maskable interrupt lines

Type Number	Short Controller Description	DMA Channel	MPX Channel	Programmed Channel	Interrupt Lines	Number of Device Addresses	Standard device Address (hexa)	Standard bits of the maskable interrupt lines
P801-950	-punched tape reader	no	no	yes	1	1	20	13
P803-950	-tape punch	no	no	yes	1	1	30	10
P806-950	-card reader	no	yes	yes	1	1	05	14
P810-950	-line printer	no	yes	yes	1	1	OD	2
P813-950	-plotter	no	yes	yes	1	1	OE	1
P841-950	-typewriter	no	no	yes	1	1	10	8
P818-950	-display	no	yes	yes	1	1	-	-
P821-055	-fixed head disc	yes	yes	no	1	4	1,11,21,31	5
P822-055	-moving head disc	yes	yes	no	1	2	2,12	4
P831-055	-magnetic tape	no	yes	no	1	4	4,14,24,34	6
P833-050	-cassette tape	no	yes	yes	1	4	6,16,26,36	11
P839-050	-DIOC	no	no	yes	1	4	A,1A,2A,3A	-
P839-150	-DIC	no	no	yes	1	4	-	-
P839-250	-DOC	no	no	yes	1	4	-	-
P838-050	-M4S	no	no	yes	1	3	1C,1D,1E	-
P838-150	-M4D	no	no	yes	1	1	3E	-
P838-250	-M4C	no	yes	yes	2	2	08,09	-
P845-050	Melcu	no	no	yes	1	1*	-	-
P846-950	Asylcu	no	no	yes	1	1	-	-
P847-950	Sylcu	no	yes	yes	1	1	-	-

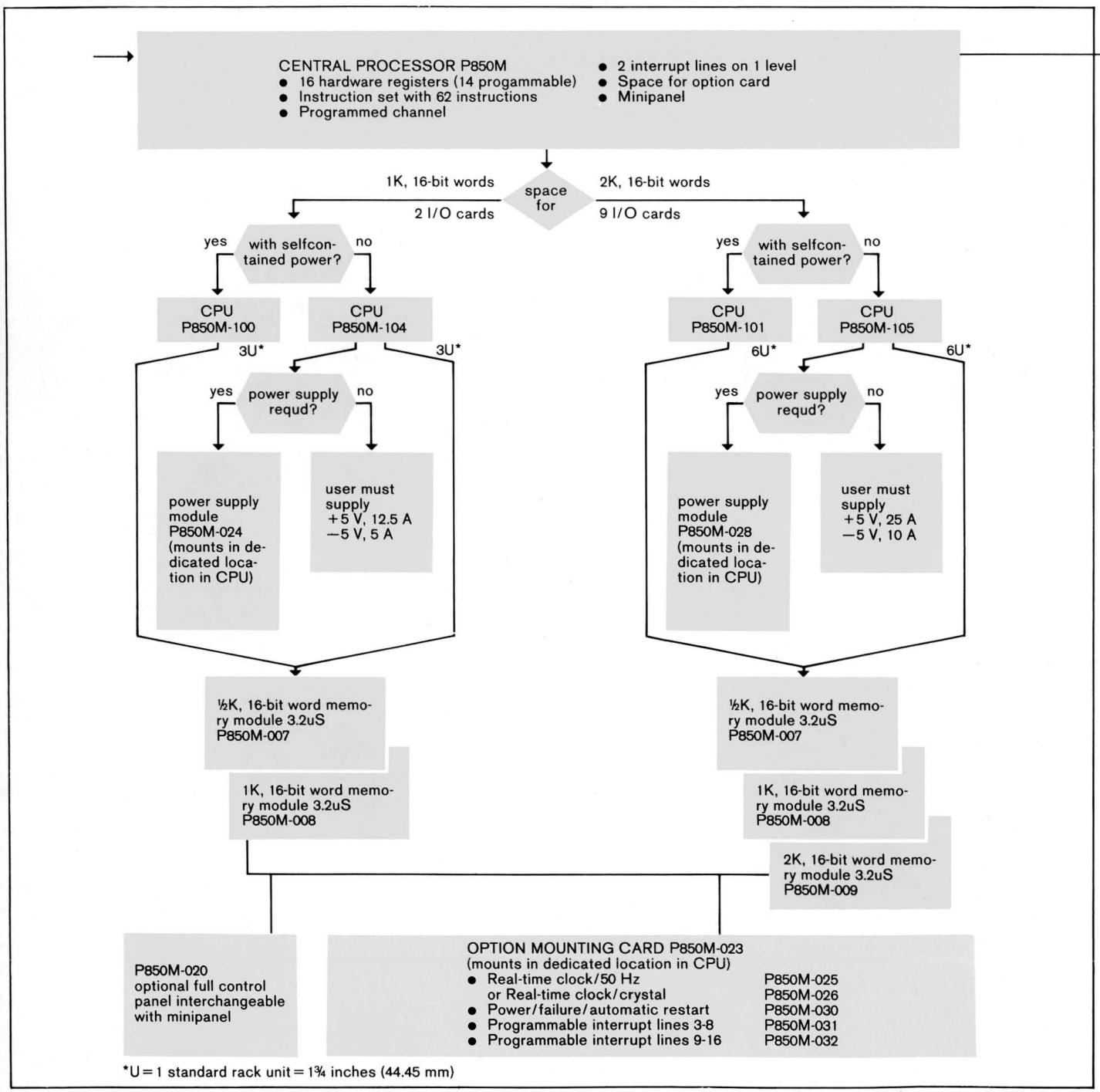
** max. 16 devices (- = non standard.)*

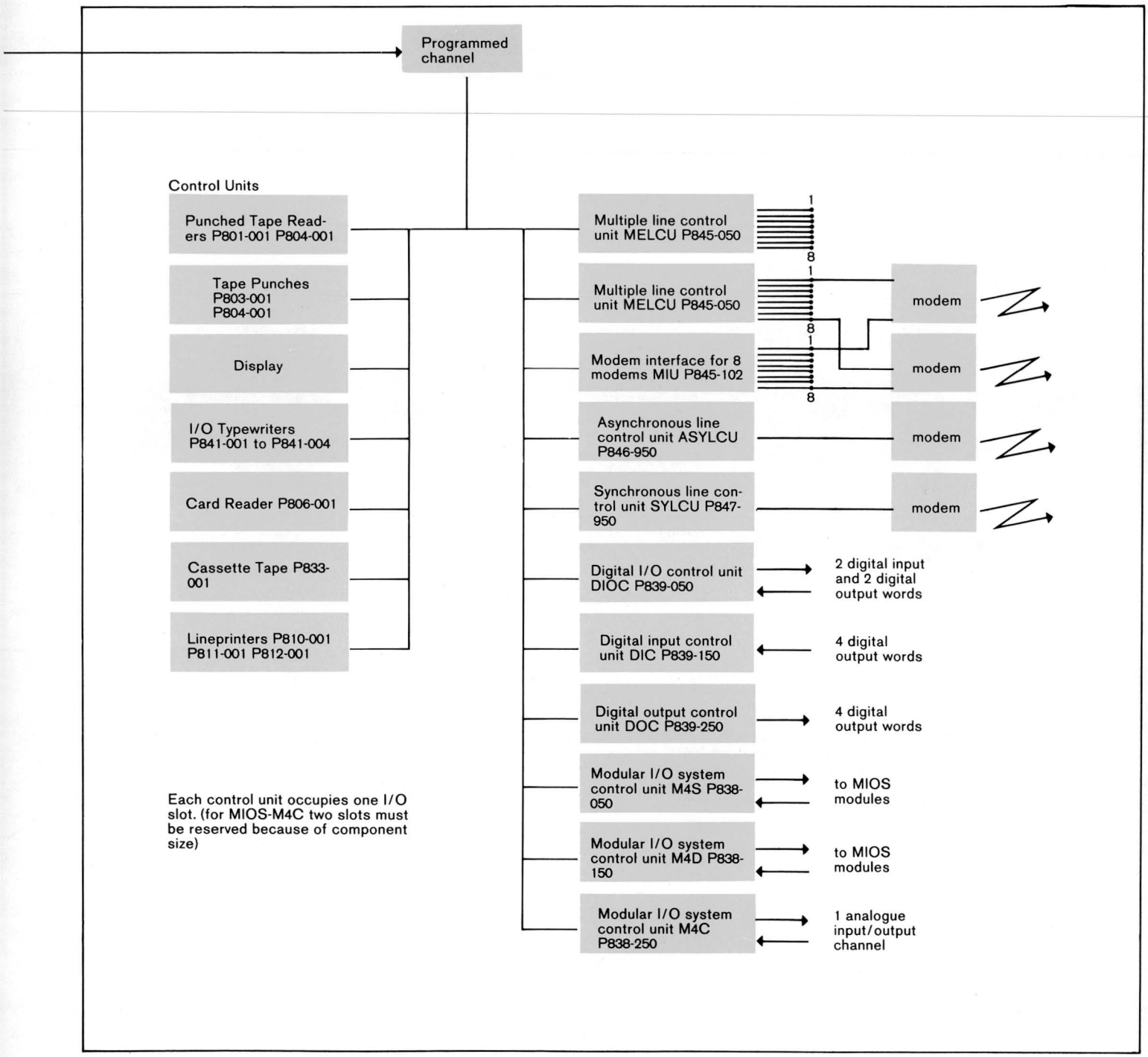
Appendix 2

Non Standard Cable Lengths.
(If the customer requires a non standard cable it should be specified e.g. Paper tape reader with 7.5 m cable instead of 3.5 M)

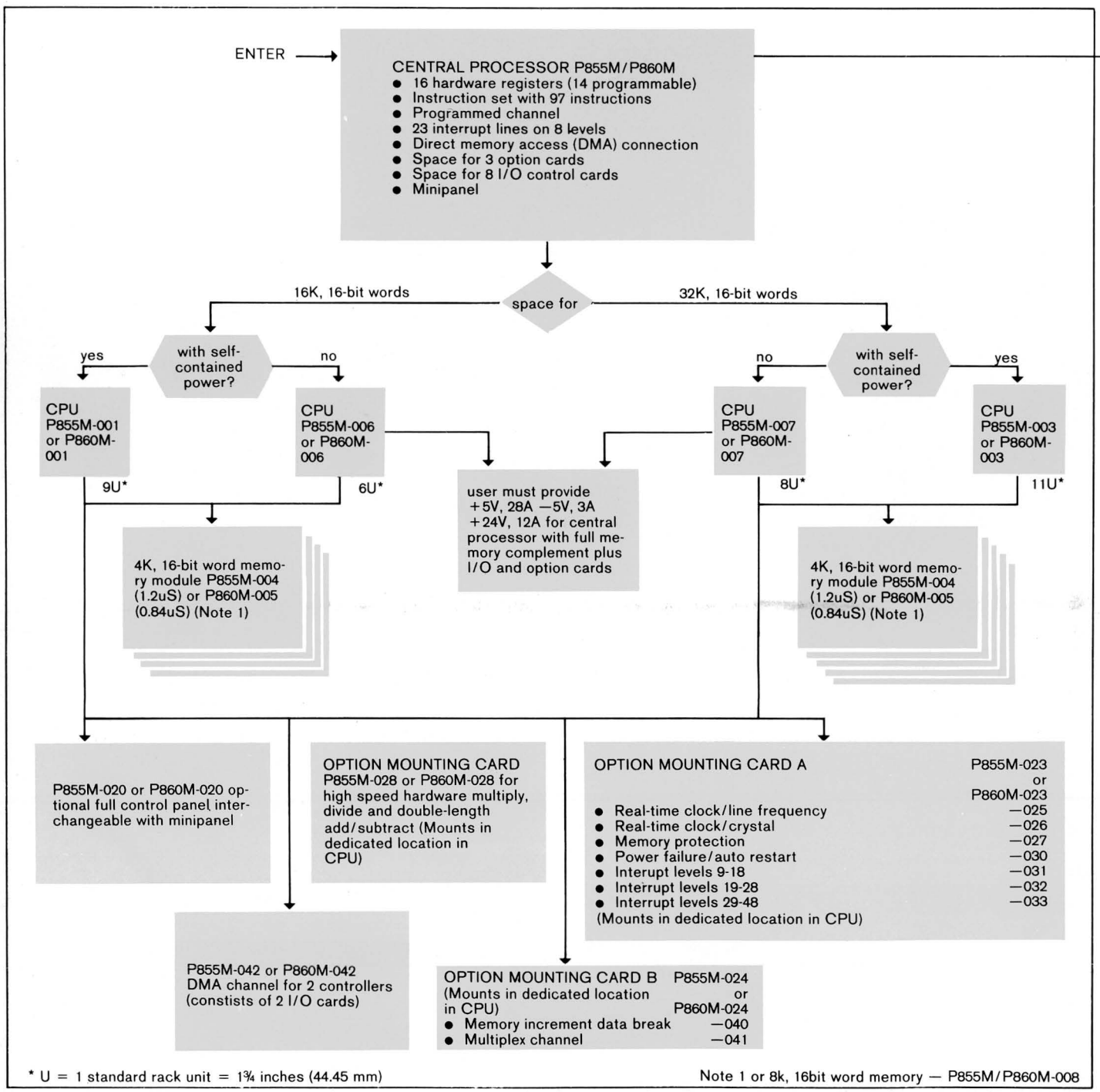
Device	*Possible Cable length*
P.T.R.	2 m; 7.5 m
P.T.R.	2 m; 7.5 m
CR	-
ASR	-
MHDisc	-
FHDisc	-
Cassette	-
Stabilizer	2 m
I/O bus ext. (P849-015/115)	1 m; 2 m; 3 m; 7.5 m; 15 m.
I/O bus ext. (P849-031)	-
Mag. Tape unit/Mag. Tape unit	-
Formatter/Mag. Tape unit	3 m.

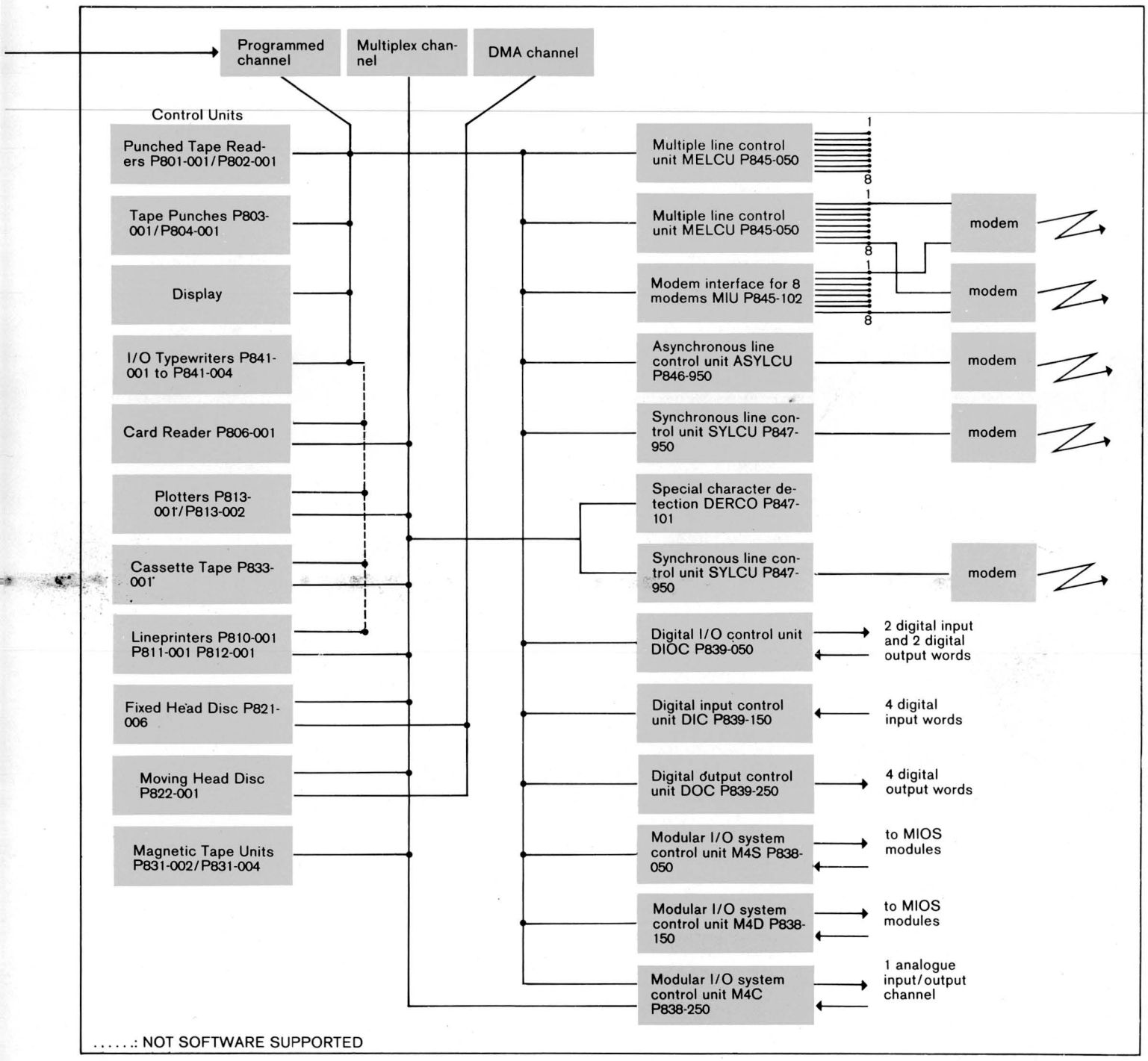
P850M Configurator



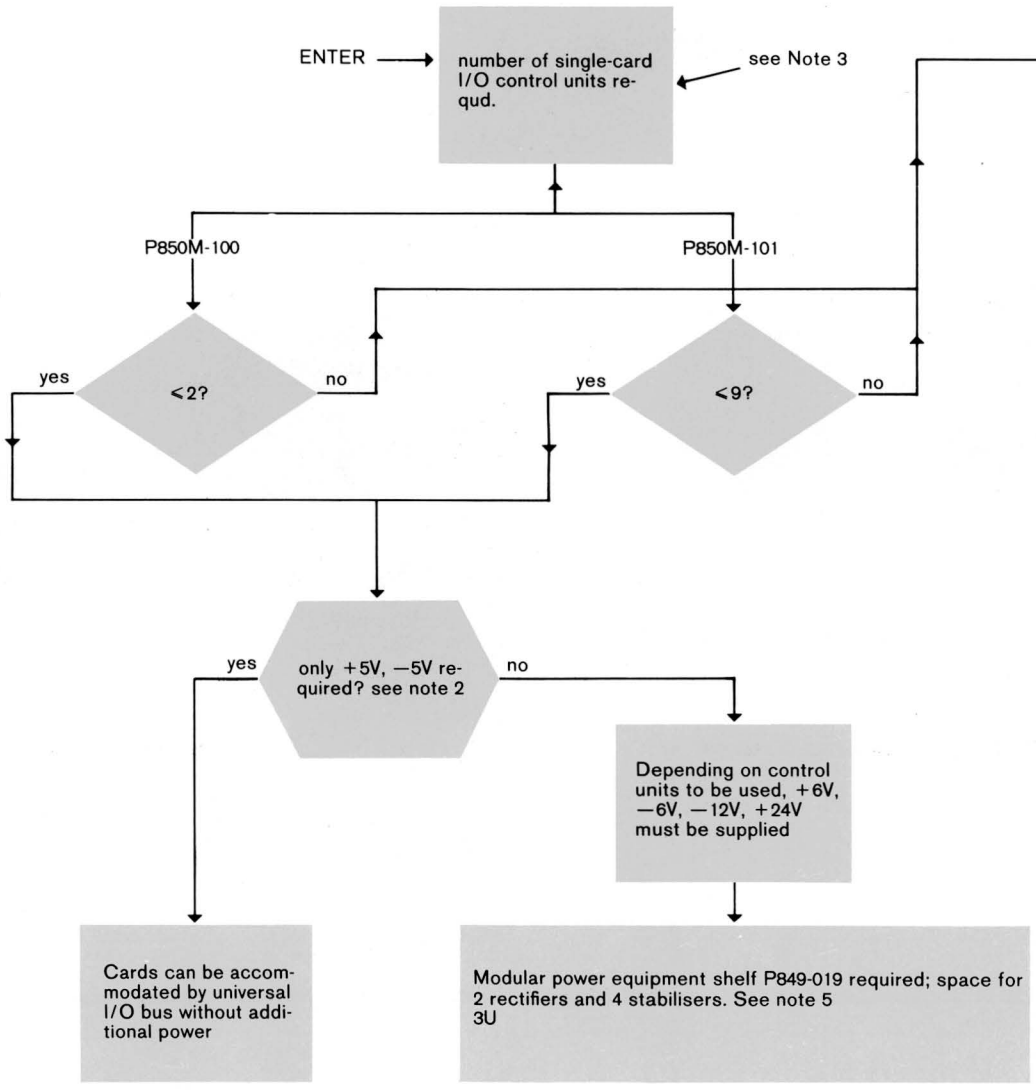

Programmed channel
Control Units
Punched Tape Readers P801-001 P804-001
Tape Punches P803-001 P804-001
Display
I/O Typewriters P841-001 to P841-004
Card Reader P806-001
Cassette Tape P833-001
Lineprinters P810-001 P811-001 P812-001
Each control unit occupies one I/O slot. (for MIOS-M4C two slots must be reserved because of component size)
Multiple line control unit MELCU P845-050
1
8
Multiple line control unit MELCU P845-050
1
8
modem
Modem interface for 8 modems MIU P845-102
1
8
modem
Asynchronous line control unit ASYLCU P846-950
modem
Synchronous line control unit SYLCU P847-950
modem
Digital I/O control unit DIOC P839-050
2 digital input and 2 digital output words
Digital input control unit DIC P839-150
4 digital output words
Digital output control unit DOC P839-250
4 digital output words
Modular I/O system control unit M4S P838-050
to MIOS modules
Modular I/O system control unit M4D P838-150
to MIOS modules
Modular I/O system control unit M4C P838-250
1 analogue input/output channel

P855M/P860M Configurator



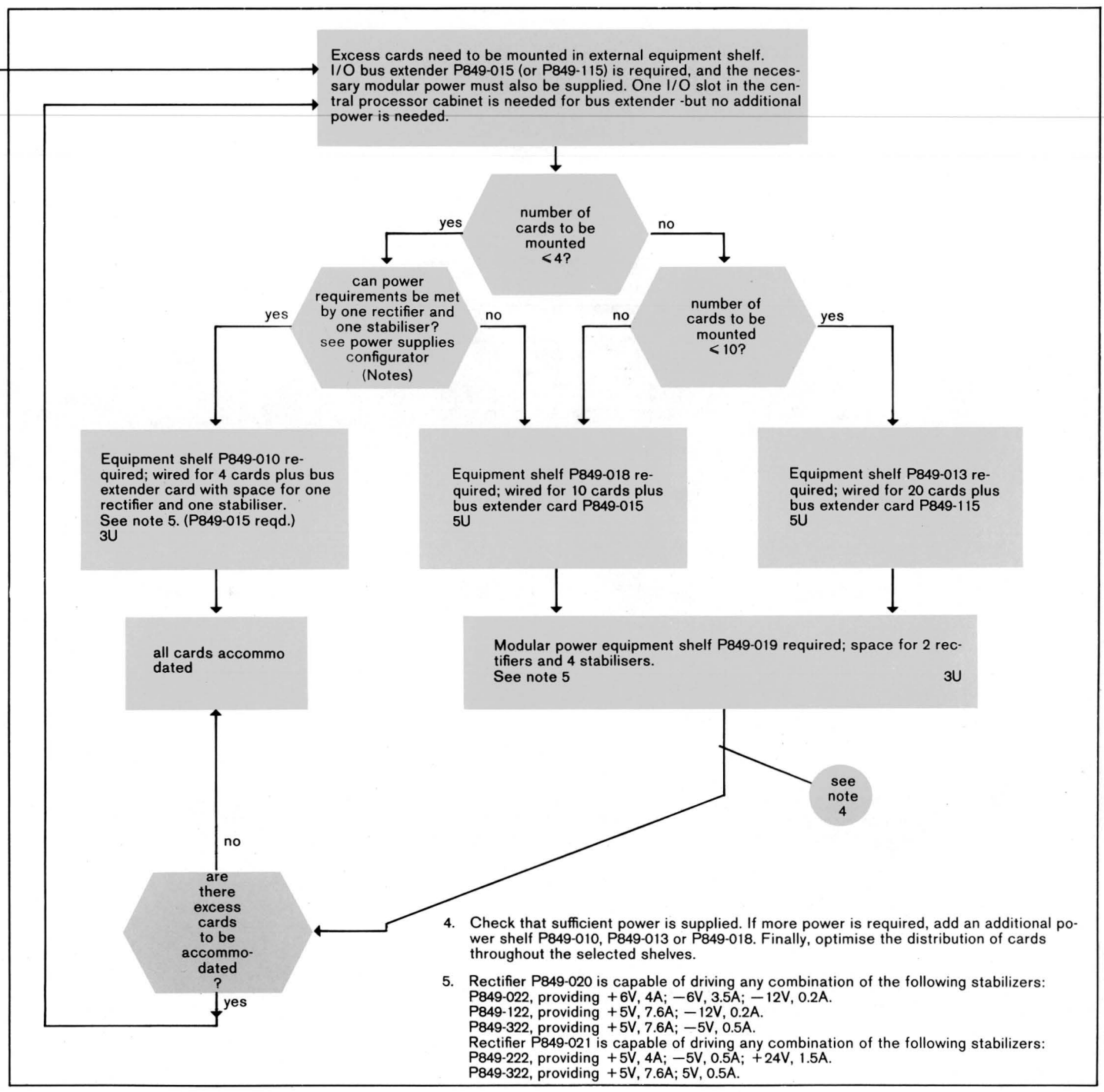

Programmed channel
Multiplex channel
DMA channel
Control Units
Punched Tape Readers P801-001/P802-001
Tape Punches P803-001/P804-001
Display
I/O Typewriters P841-001 to P841-004
Card Reader P806-001
Plotters P813-001/P813-002
Cassette Tape P833-001
Lineprinters P810-001 P811-001 P812-001
Fixed Head Disc P821-006
Moving Head Disc P822-001
Magnetic Tape Units P831-002/P831-004
Multiple line control unit MELCU P845-050
1
8
Multiple line control unit MELCU P845-050
1
8
modem
Modem interface for 8 modems MIU P845-102
1
8
modem
Asynchronous line control unit ASYLCU P846-950
modem
Synchronous line control unit SYLCU P847-950
modem
Special character detection DERCO P847-101
Synchronous line control unit SYLCU P847-950
modem
Digital I/O control unit DIOC P839-050
2 digital input and 2 digital output words
Digital input control unit DIC P839-150
4 digital input words
Digital output control unit DOC P839-250
4 digital output words
Modular I/O system control unit M4S P838-050
to MIOS modules
Modular I/O system control unit M4D P838-150
to MIOS modules
Modular I/O system control unit M4C P838-250
1 analogue input/output channel
.....: NOT SOFTWARE SUPPORTED

P850M Power and Equipment Shelf Configuration



Notes:

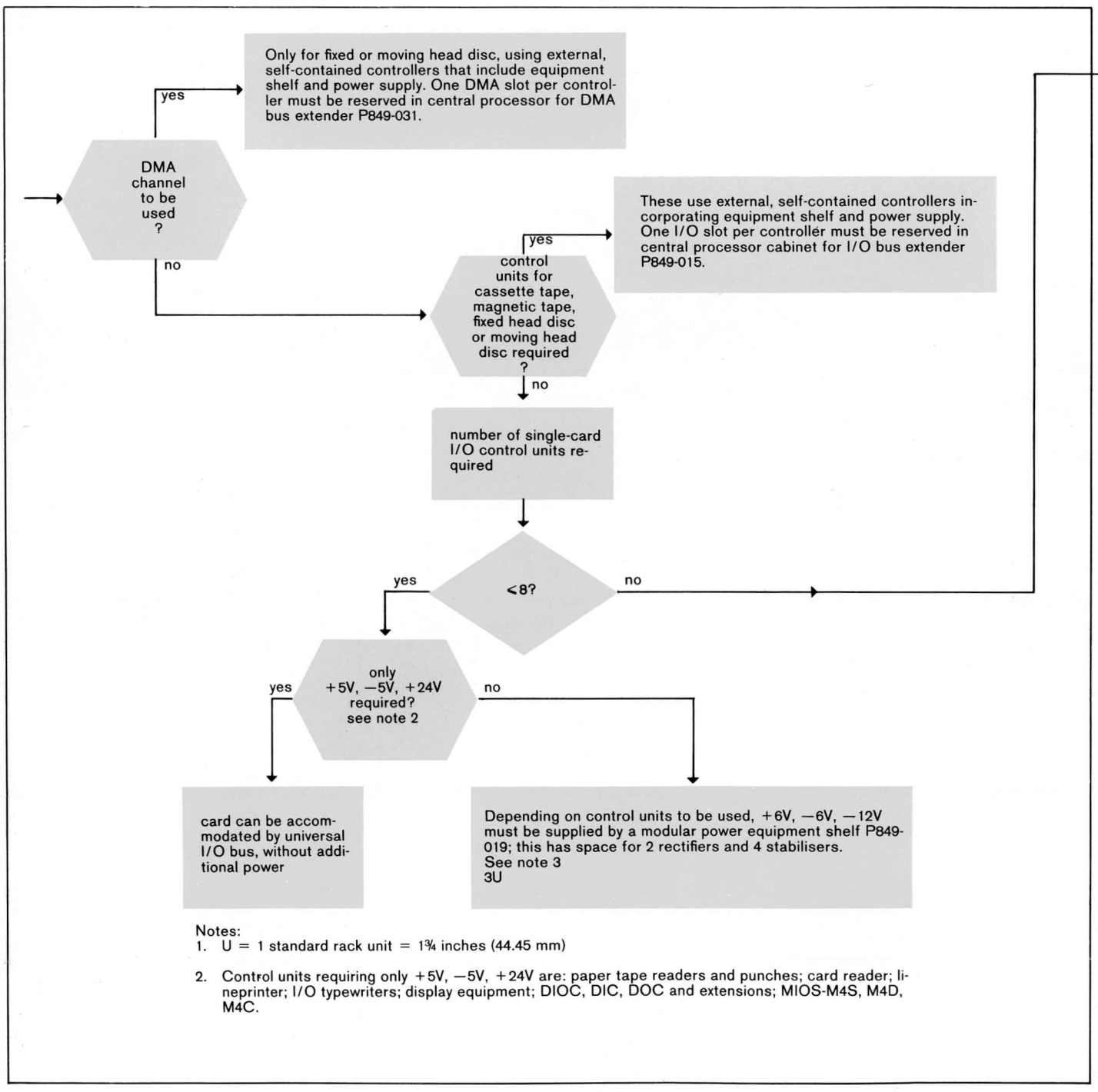
1. U = 1 standard rack unit = 1¾ inches (44.45 mm)
2. Control units requiring only +5V, −5V are: paper tape readers and punches; card reader; lineprinter; I/O typewriters; display equipment; DIOC, DIC, DOC, MIOS-M4S, M4D, M4C.
3. This excludes multi-card control units which use an external, self-contained controller; includes equipment shelf and power supply. One I/O slot per controller must be reserved in central processor cabinet for I/O bus extender P849-015. (Applies to cassette, Magnetic tape, fixed and moving head disc.)



4. Check that sufficient power is supplied. If more power is required, add an additional power shelf P849-010, P849-013 or P849-018. Finally, optimise the distribution of cards throughout the selected shelves.

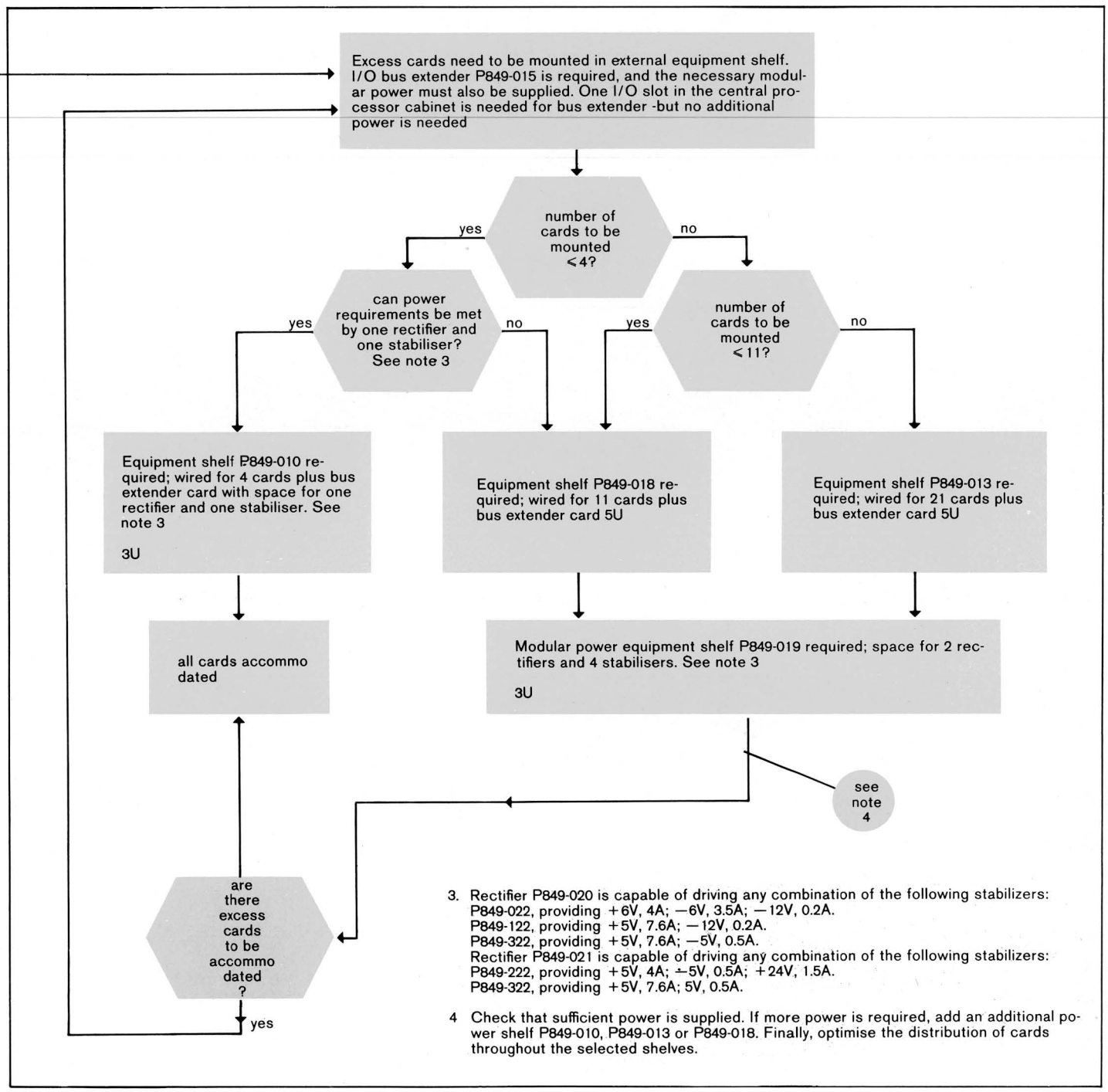
5. Rectifier P849-020 is capable of driving any combination of the following stabilizers:
P849-022, providing +6V, 4A; −6V, 3.5A; −12V, 0.2A.
P849-122, providing +5V, 7.6A; −12V, 0.2A.
P849-322, providing +5V, 7.6A; −5V, 0.5A.
Rectifier P849-021 is capable of driving any combination of the following stabilizers:
P849-222, providing +5V, 4A; −5V, 0.5A; +24V, 1.5A.
P849-322, providing +5V, 7.6A; 5V, 0.5A.

P855M/P860M Power and Equipment Shelf Configuration



Notes:

1. U = 1 standard rack unit = 1¾ inches (44.45 mm)
2. Control units requiring only +5V, −5V, +24V are: paper tape readers and punches; card reader; lineprinter; I/O typewriters; display equipment; DIOC, DIC, DOC and extensions; MIOS-M4S, M4D, M4C.



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   P849-322, providing +5V, 7.6A; 5V, 0.5A.

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PHILIPS ELECTROLOGICA B.V.

MAIN MARKETING GROUP-OEM
P.O.Box 245, Apeldoorn, The Netherlands
phone: 05760-30123; telex: 4 91 42

For further details contact the above address or:

EUROPE

Sweden
Svenska AB Philips Data Systems
Lidingövägen 50
10250 Stockholm 27
Tel. 08635000

Denmark
Philips Electrologica A/S
Prags Boulevard 80
2300 Kobenhavn S
Tel. 2222

Norway
Philips Data Systems
Nils Hansens vei 2
P.O. Box 73 Bryn
zOslo 6
Tel. 679380

Finland
OV Philips AB
Kaivokatu 8
Helsinki 10
Tel. 10915

Belgium
NV Philips-Electrologica
Anspachlaan 1
1000 Brussel
Tel. 193900

France
Philips Data Systems
Département OEM
5 Square Max Hymans
75015, Paris 15
Tel. 7347759

Western Germany
Philips Electrologica GmbH
Geschäftsbereich Computer-Systeme
Schwannstrasse 3
4 Düsseldorf
Tel. 4566-1

Italy
Philips S.P.A.
Divisione Sistemi
Viale Fulvio Testi, 327
20162 Milano
Tel. 6420951

Switzerland
Philips AG
Binzstrasse 18
8027 Zürich
Tel. 442211

England
Philips Electrologica Ltd.
7/8 Lygon Place
Ebury Street
London SW1WOLA
Tel. 7303416

Austria
Philips Data Systems
Untere Donaustraße 11
1020 Wien 2
Tel. 247561

Netherlands
Philips Electrologica B.V.
Main Marketing Group. OEM
P.O. Box 245, Apeldoorn
Tel. 05760-30123; Telex 49142

FAREAST

Japan
Nihon Philips Corporation
P.O. Box 13
World Trade Center
Hamamatsu-cho, Minato-Ku
Tokyo 105
Tel. 034355211

NORTHAMERICA

U.S.A.
North American Philips Corp.
Dept. 007
100 East 42nd Street
New York N.Y. 10017
Tel. 2126973600

Canada
Philips Electronics Industries Ltd.
Telecommunications Division
1001, Ellesmere Road
Scarborough 706
Ontario
Tel. (416) 7521981