LSX 3000

Site Preparation Guide

olivetti

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LSX 3000

Site Preparation Guide

PREFACE

INTRODUCTION

This manual gives the information needed to prepare the environment where the LSX 3000 system is to be installed with the associated peripherals.

This information is useful for:

- ATC Technicians
- Sales Personnel
- Customers

The manual describes the characteristics of the network system, the environmental conditions, the work area and the system ventilation. It also supplies detailed instructions on the correct installation of machines for the end user.

The final chapters describe the system characteristics, cables, modules and peripherals.

SUMMARY

Chapters 1-4 deal with the characteristics of the network system, the physical environment, the work area and ventilation (information needed for the correct installation of the system).

Chapter 5 describes the system characteristics, cables and peripherals.

Chapter 6 describes the various workstation layouts.

Chapter 7 deals with the line connections.

BIBLIOGRAPHY:

LSX 3010/05	– Service Manual	– Code: 4117610T–00
LSX 3020/30/40	– Service Manual	– Code: 4114030N–00
LSX 3035/45	– Service Manual	– Code: 0240340D–00
LSX 3070/3080	– Service Manual	– Code: 4117280S–00

PRODUCT RANGE:

B1 LSX3005, LSX3010
B2 LSX3020, LSX3030, LSX3035, LSX3040, LSX3045
B3 LSX3070, LSX3080

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1. INTRODUCTION

In order for the system to work correctly, the user must ensure that the following are correctly installed:

- Main power supply network:
  must conform to the safety regulations and be capable of supplying the current required by the system units
  (see "Power Supply Characteristics" on page 5-2).

- Connection lines (where necessary) between base unit and workstations
  (see "Workstations" on page 6-1).

The following must also be provided:

- A sufficient work area around the system units
  (see "Work Area and Ventilation" on page 4-1).

- A room temperature that corresponds to that specified in the section:
  Installation area characteristics (see "Environmental Conditions" on page 3-1).

- Sufficient ventilation to allow the units to cool down
  (see "Work Area and Ventilation" on page 4-1).

2. MAIN POWER SUPPLY CHARACTERISTICS

2.1 A.C. POWER SUPPLY

The electrical equipment must conform to the specifications described in the chapters that follow and be capable of supplying power to all the installed units.

2.2 NETWORK SYSTEM

The cables and switches must be appropriately dimensioned in order to support the work load and the rise in current when the system is powered on.
The maximum variations permitted for voltage, current and frequency are listed for each system module (see "System Characteristics" on page 5-1).

2.3 EARTH (GROUND)

The ohmic resistance of the earth device must meet the requirements of the NATIONAL STANDARD. A value of 50 ohm will give protection from interferences. The ENPI Italian Standard requires a value lower than 20 ohm for the protection of operating personnel.

Note: The importance of good earthing of electrical equipment can never be too strongly emphasized. An unearthed system will never work correctly and constitutes a safety risk.

If an unearthed circuit is used, the following situations can occur:

- Electric shocks when touching metallic parts
- Intermittent system breakdowns
- Errors when executing programs
- Read and write errors on magnetic supports
- Costly damage to the equipment.

2.4 ELECTRICAL INTERFERENCES

The system must be isolated from sources of electrical interferences and equipment that causes excessive variations to the voltage levels, or introduces large inductive or capacitive charges in the circuit.

For example, the following devices should not be connected on the same system power supply network:

- Air-conditioners, large ventilators and the like
- Alternators and large transformers
- Large motors equipped with brushes or induction type
- Radio or TV transmitters, signal generators and safety devices working at high frequencies.

The maximum values accepted by the system with regard to interferences conducted across the A.C. network are as follows:

- Amplitude: 500 Volts
- Rising edge duration: 40 ns
- Falling edge duration: 500 µs
- Maximum frequency of 100 Hz.

2.5 NETWORK CRASHES

The system supports the following values for network crashes at 50/60 Hz:

- Minus 15%
- Minus 30% for a maximum of 25 cycles
- 1/2 cycle total crash (10 ms)

In addition to this, the system is reset.

Note: Some small office machines (e.g. typewriters, small photocopiers, calculators, etc.) can be loaded onto the same system line as they do not cause excessive interferences.
LSX 3000 systems can be connected to the same power supply network, provided that each machine is connected to a specific socket.

3. ENVIRONMENTAL CONDITIONS

The main factors that affect the working of LSX 3000 systems are:

- Temperature and relative humidity
- Dust levels
- Altitude (disk unit).

The temperature and humidity values can be measured using normal thermohygrometers and recorders available on the market.
The values related to dust and atmospheric matter cannot be measured by normal means, but if necessary measurement can be commisioned to specialized institutes.

3.1 ATMOSPHERIC TEMPERATURE AND HUMIDITY

The diagram belows shows the field of environmental conditions relative to temperature and humidity at which the system guarantees the performances contained in the specifications.

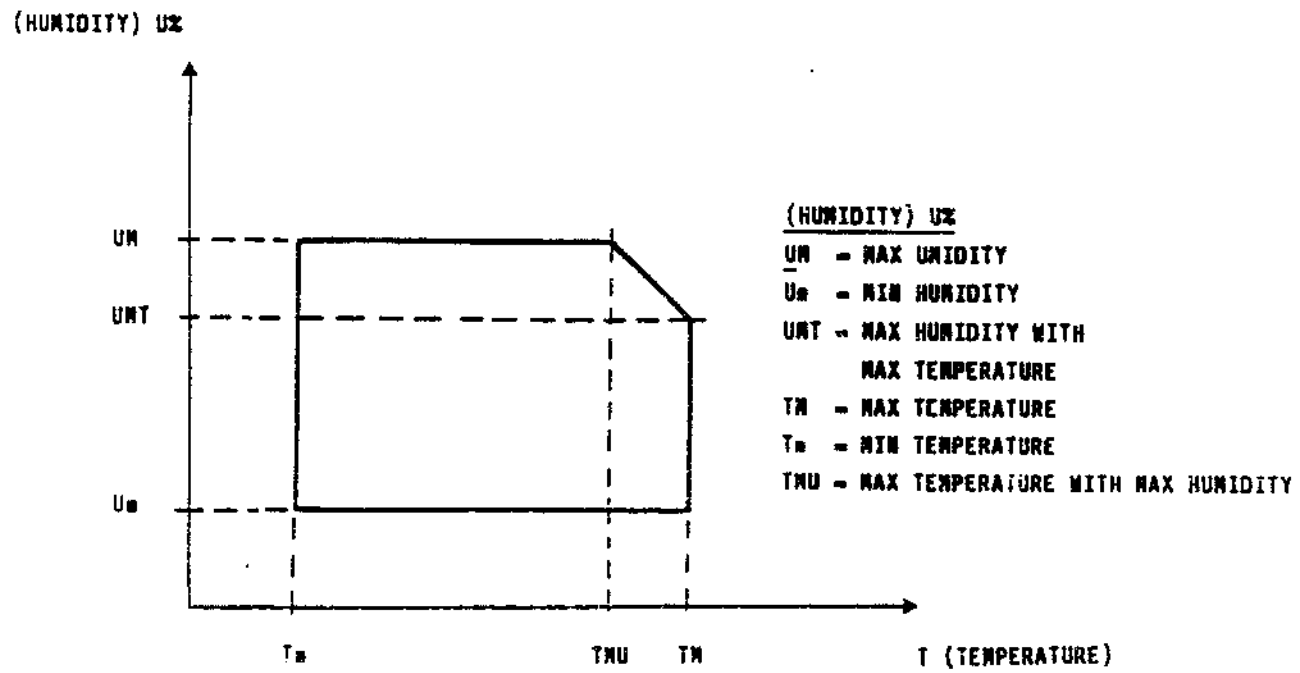


Fig. 3-1 Operating Conditions

Note that maximum temperature and maximum relative humidity cannot be coupled while the system is working.

TMU and UMT can assume the following values:

- TMU = 0,9 TM
- UMT = 0,9 UM

If the maximum operating limits are exceeded, intermittent system errors may occur; furthermore a thick deposit of oxide can accumulate on the heads of the magnetic supports, causing them to wear out more quickly.

Note: The temperature and humidity limits refer to the work environment in close vicinity to the machine.

The figure below shows the extreme temperature and humidity values of LSX 3000 systems during operation, standing and storage. (The minimum and maximum values for LSX 3000 systems are determined by the magnetic peripheral present).

Note that the "operating condition" temperature influences the life span of the electronic components. A well-ventilated system that operates at temperatures below the maximum limits is more reliable.

MODULES	OPERATING CONDITIONS		STANDING CONDITIONS		STORAGE CONDITIONS	
	Tempe-rature	Relative humidity	Tempe-rature	Relative humidity	Tempe-rature	Relative humidity
	°C	%	°C	%	° C	%
LSX3000	10-40	15-85	5-50	5-95	15- 55	5-95
mFD and FD	10-40	20-80	5-50	8-80	-30-53	8-90
HDU	5-40	20-80	5-50	5-95	-34-55	5-95
STC	10-40	20-80	5-50	5-90	-30-55	5-95
MTU	10-33	15-85	5-50	10-90	-30-50	10-90
Badge	10-40	10-85	5-50	5-95	-35-55	5-95

Fig. 3-2 Table of Temperature and Humidity Values

Note: The supports are climatized in the operating environment before use. One hour is usually sufficient.

ALTITUDE THAT CAN BE TOLERATED BY THE DISK UNITS

OPERATING CONDITIONS	NON-OPERATING CONDITIONS
- 300 m + 3.000 m	- 300 m + 10.000 m

Note: For more detailed information on each peripheral unit, refer to the relative chapter.

3.1.1 DUST LEVELS

The LSX 3000 system can be installed in any normal office and the maximum dust level accepted by Olivetti standards is 0.25mg/m^3.
This value is suitable for most office environments.

A high dust level is particularly harmful to the magnetic units, because it ruins the supports and the heads, and obstructs the cool-air slots.

3.1.2 IONOGENIC RADIATION OF THE CATHODE RAY TUBE

Inferior to 0.1 mR/hour at a distance of 10 cm, therefore much lower than the CEE 80/836 standard value (0.5 mR/hour).

3.1.3 STATIC ELECTRICITY

A very low humidity level can cause electrostatic charges to be generated, and these interfere with the read/write operations on the magnetic supports.

Carpets and rugs can also cause electrostatic charges.

All of the system modules conform to the standards for electrostatic charges and immunity to the systems' electrostatic charges is 10 kW, measured with Schaffner MSG 430 equipment.

Listed below are some of the ways in which static electricity can be reduced:

- Keep humidity close to the maximum accepted value
- Use antistatic carpets and rugs
- Use antistatic solutions regularly
  (see BIG 999.72.1 GO1 for the treatment of carpeted floors).

3.2 INTERNATIONAL STANDARDS

The LSX 3000 line systems have been type approved in accordance with the following international standards:

Safety: IEC 435
CSA C22-2 #154
UL 478

Radio interferences: CISPR
FCC class A
VDE 0871 class A (DBP 523)
CEE 82/499 Directive

Ergonomics: G.S. (DIN, VDE, ZH)

4. WORK AREA AND VENTILATION

In order for the service technician to access every part of the machine, a service area should be left around the system, together with an air flow to allow good ventilation.

The following examples will help the user when planning the layout of the room.

4.1 LSX 3005/10 (BASE UNIT)

LSX 30005/10 systems are desk-top versions and must conform to the following standards:

- Do not install the system in the upside-down position, or with the MFDU turned upwards or downwards (vertical introduction of disks)
- Leave adequate space around the system for the cables
- Install the system at least 25 cm from the floor to prevent the accumulation of excess dust
- Make sure that the system can be easily removed (essential for technical interventions)
- Do not obstruct the air flow slots in order to guarantee good ventilation.

4.2 LSX 3020/30/40 LSX 3035/45 LSX 3070/80 (BASE UNIT)

When choosing a room for the installation of the base unit, follow the suggestions given in section 4.1.

Note: Consult maintenance personnel before moving the system.

The figures below show the dimensions (in mm) and air flow of the LSX 3005/10 system.

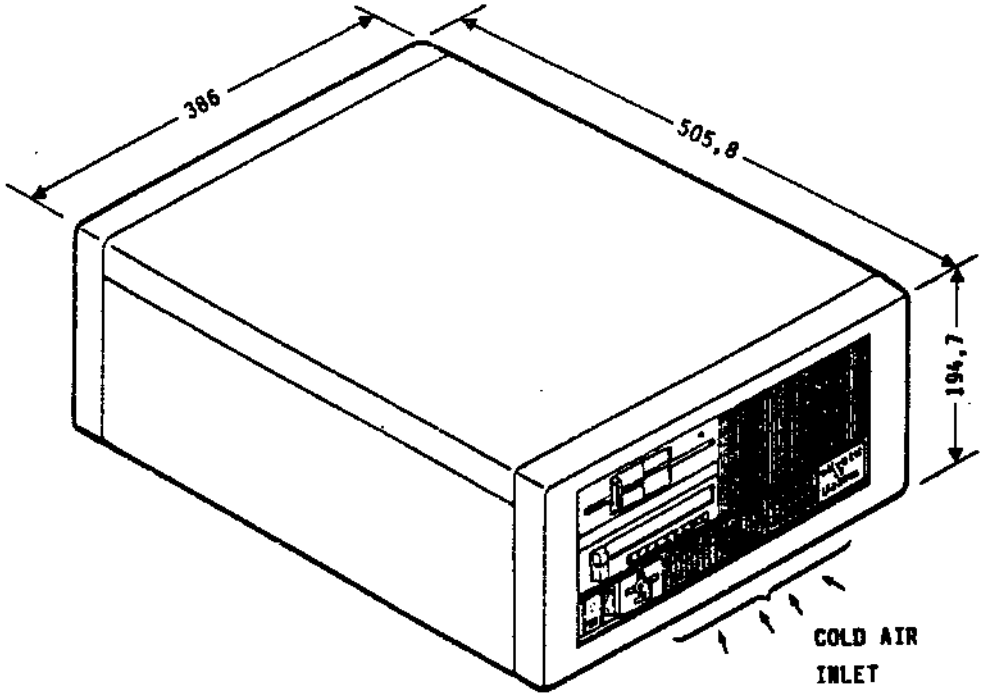


Fig. 4-1 LSX 3005/10 (Front View) – Air Flow and Dimensions

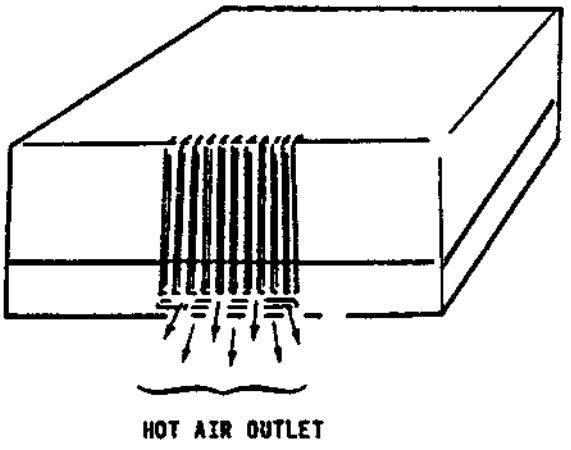


Fig. 4-2 LSX 3005/10 (Back View)

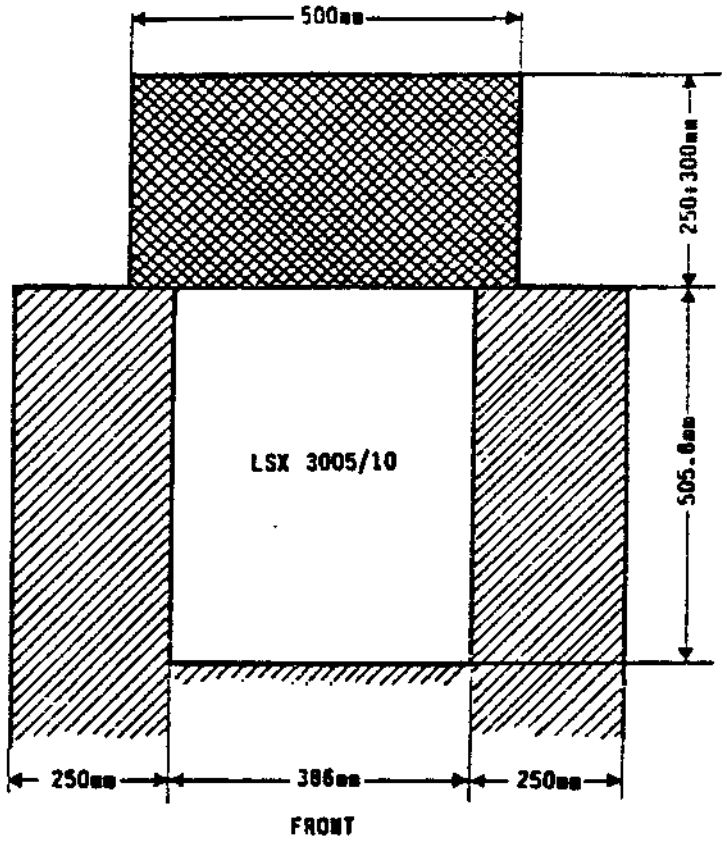


Fig. 4-3 LSX 3005/10 (View from Above) – Area required for correct ventilation and easy installation of Desk-Top models

Service Area 

Key:

Ventilation Area 

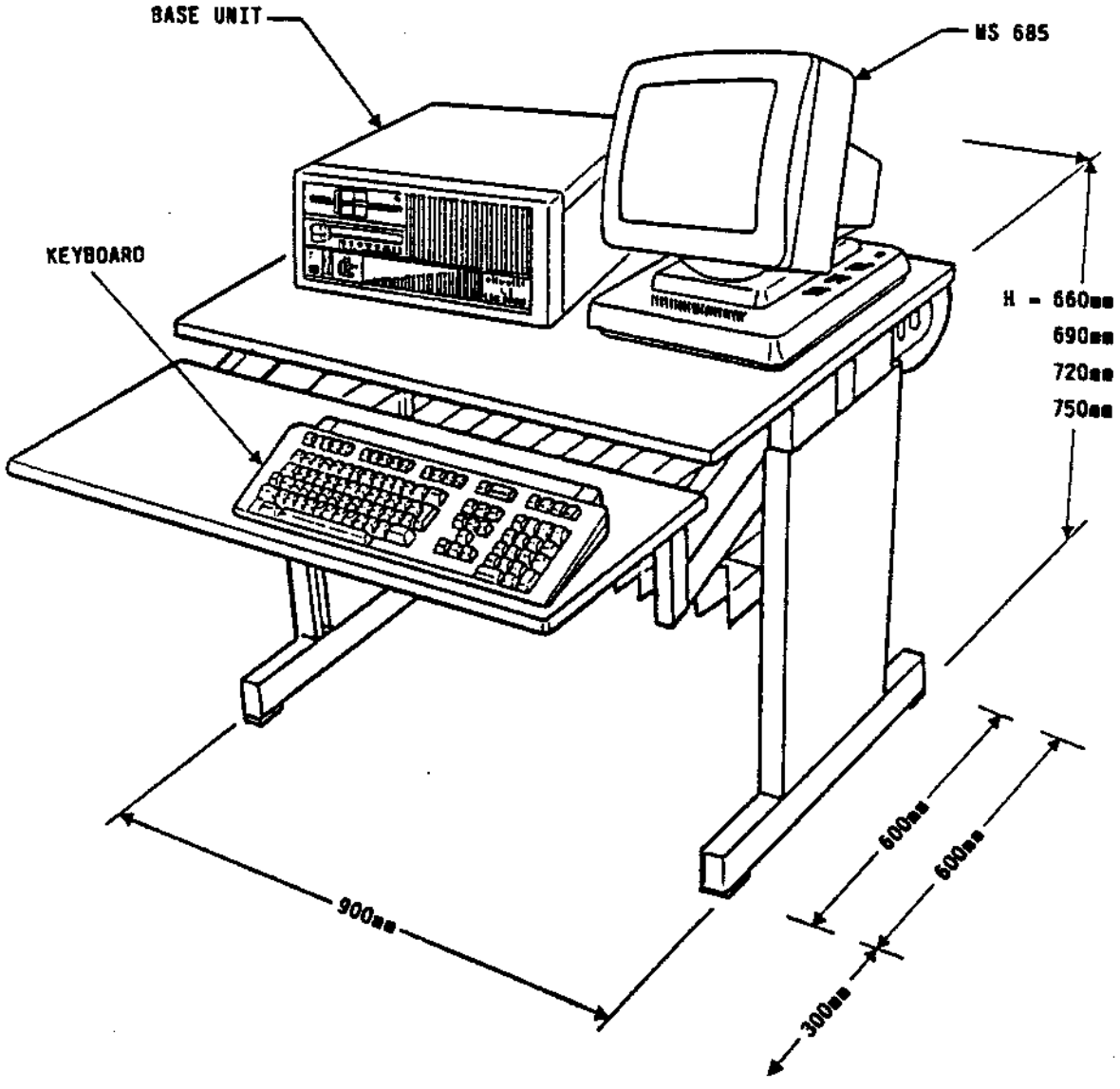


Fig. 4-4 LSX 3010 (UNIX) with WS 685 on height-adjustable table

The alternating power supply to the WS is supplied directly by the network; two network sockets must therefore be included for this configuration.
The network cables of the base unit and WS 685 are 2.5 m in length.

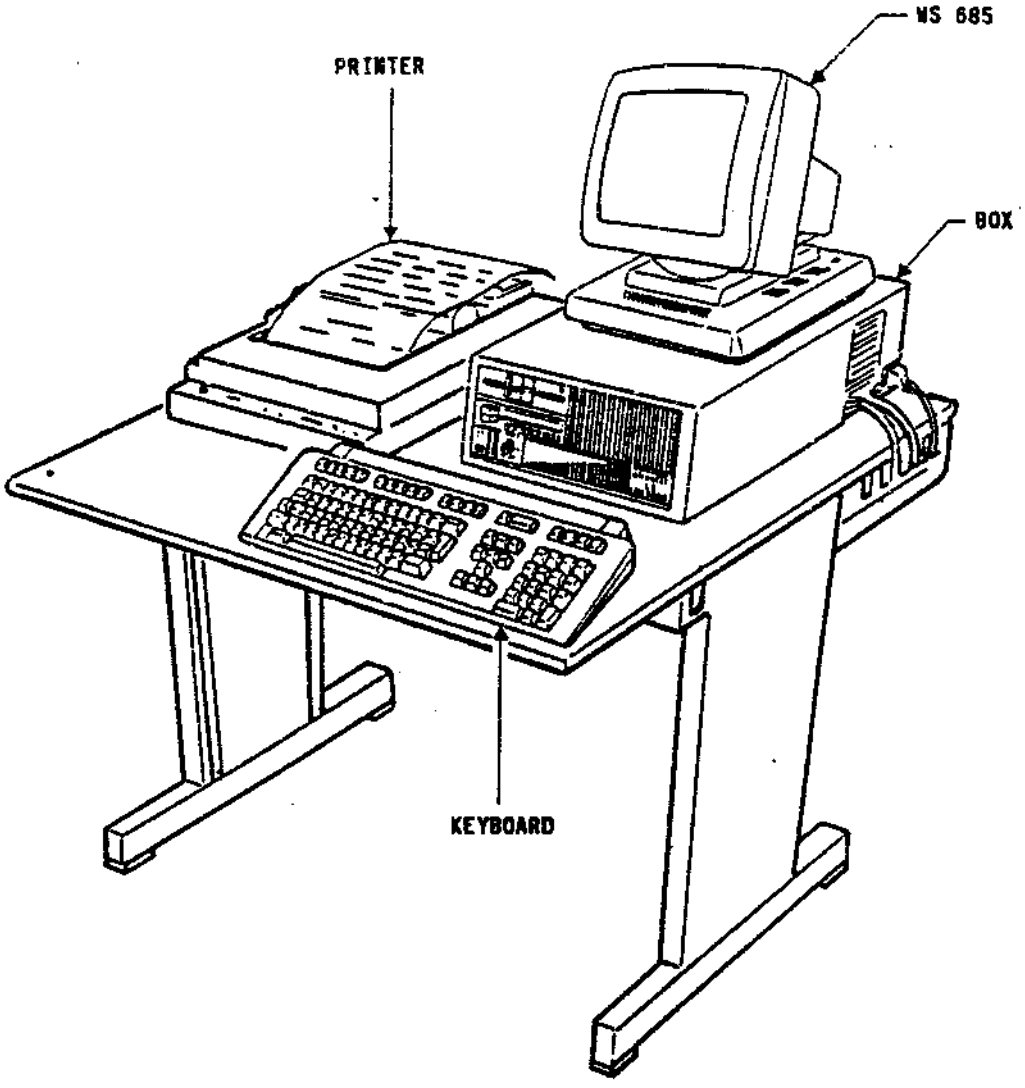


Fig. 4-5 LSX 3010 (UNIX) – Configuration with WS mounted on box

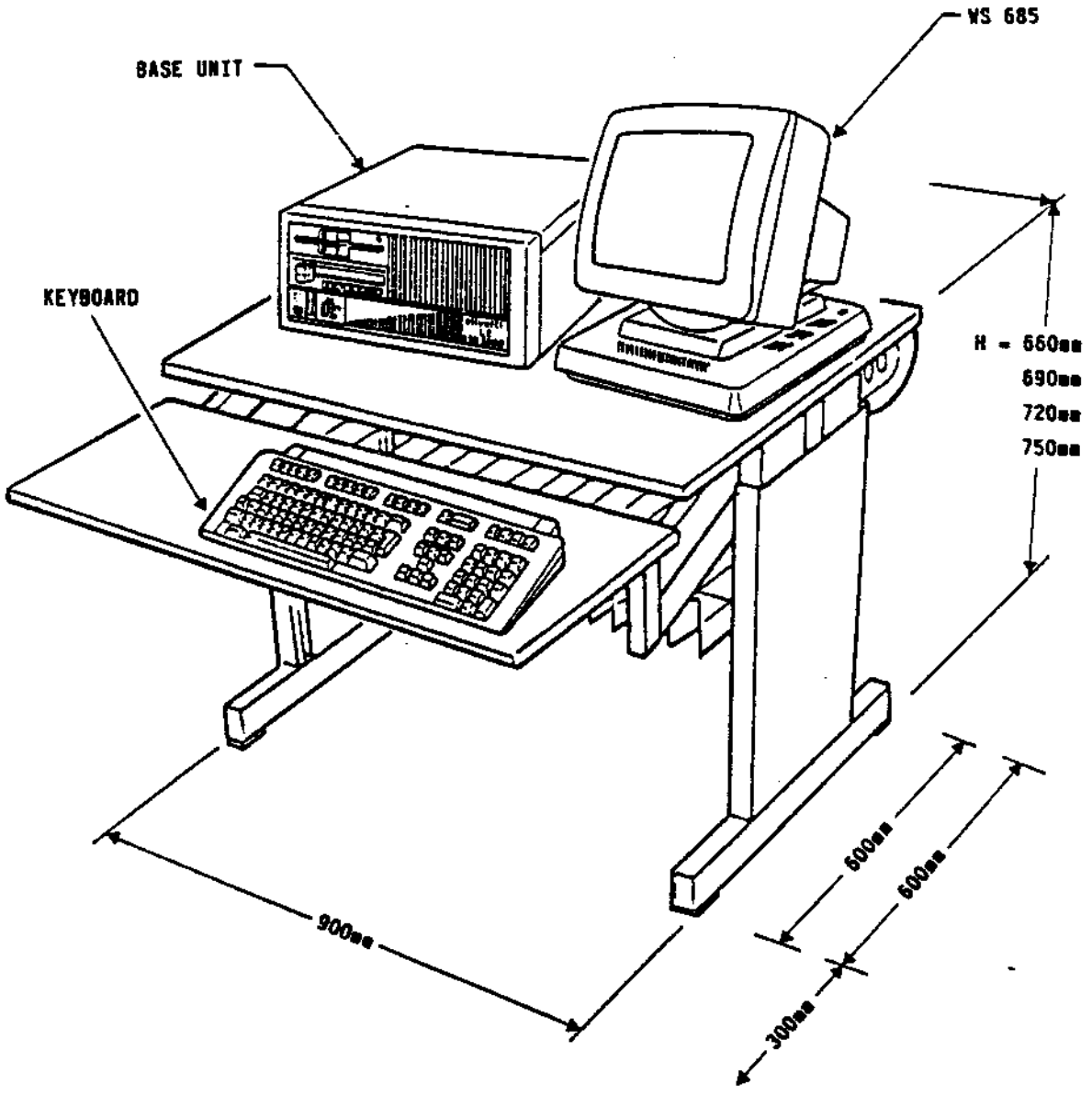


Fig. 4-6 LSX 3005 (MOS) with keyboard and video on height-adjustable table

The alternating power supply to the WS 685/M is supplied directly by the network; two network sockets must therefore be included for this configuration. The network cable is 2.5 m in length.

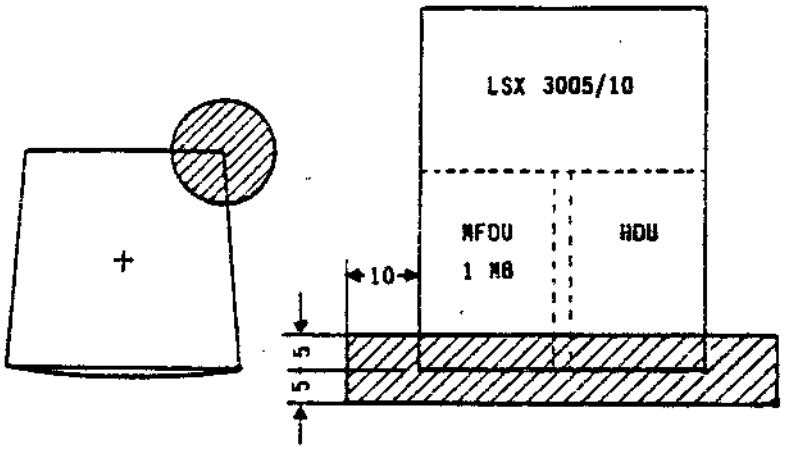


Fig. 4-7 LSX 3005/10 In WS 685 configuration and base unit with MFDU 1 MB

This configuration requires special attention, due to the electromagnetic interference of the video with the MFDU of 1 MB.

With reference to Figure 4-7, note that:

- The encircled hatched area represents the source of the interference
- The hatched rectangle represents the area sensitive to interferences.

The example is valid for LSX 3005/10 with MFDU 1 MB

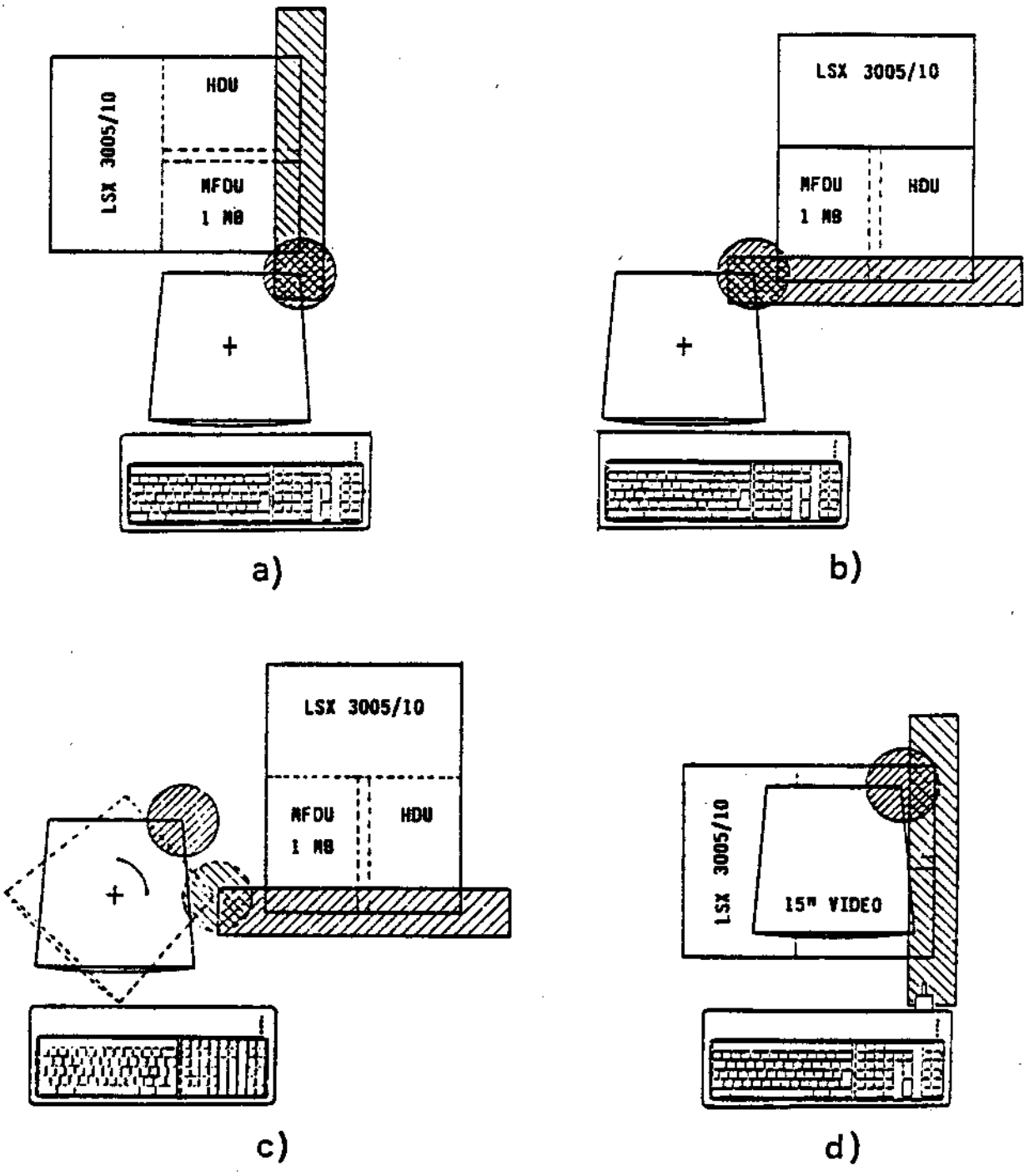


Fig. 4-8 Configurations that CANNOT be made

4.3 DIMENSIONS OF LSX SYSTEMS

LSX 3020/30/40 (BU 8009)

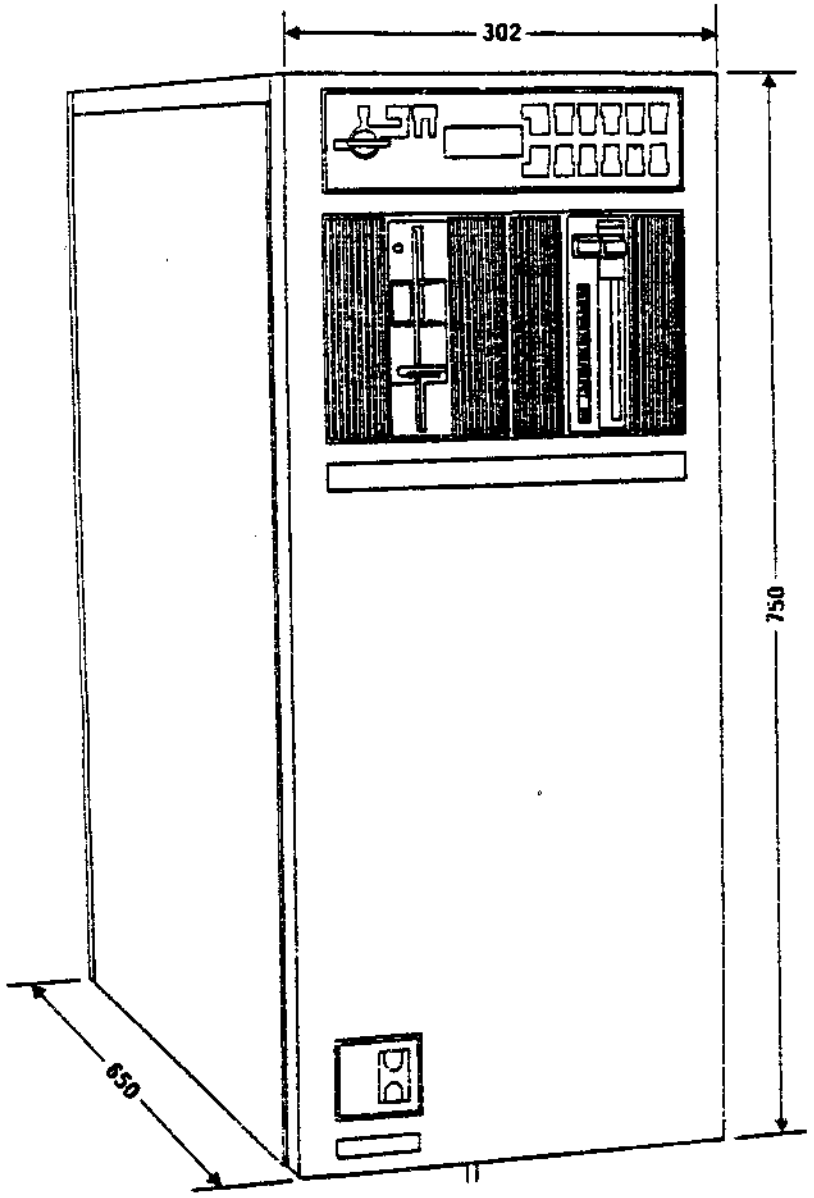


Fig. 4-9 Front View and Dimensions (in mm) of the LSX 3020/30/40 System

For the service area, see Figure 4-14.

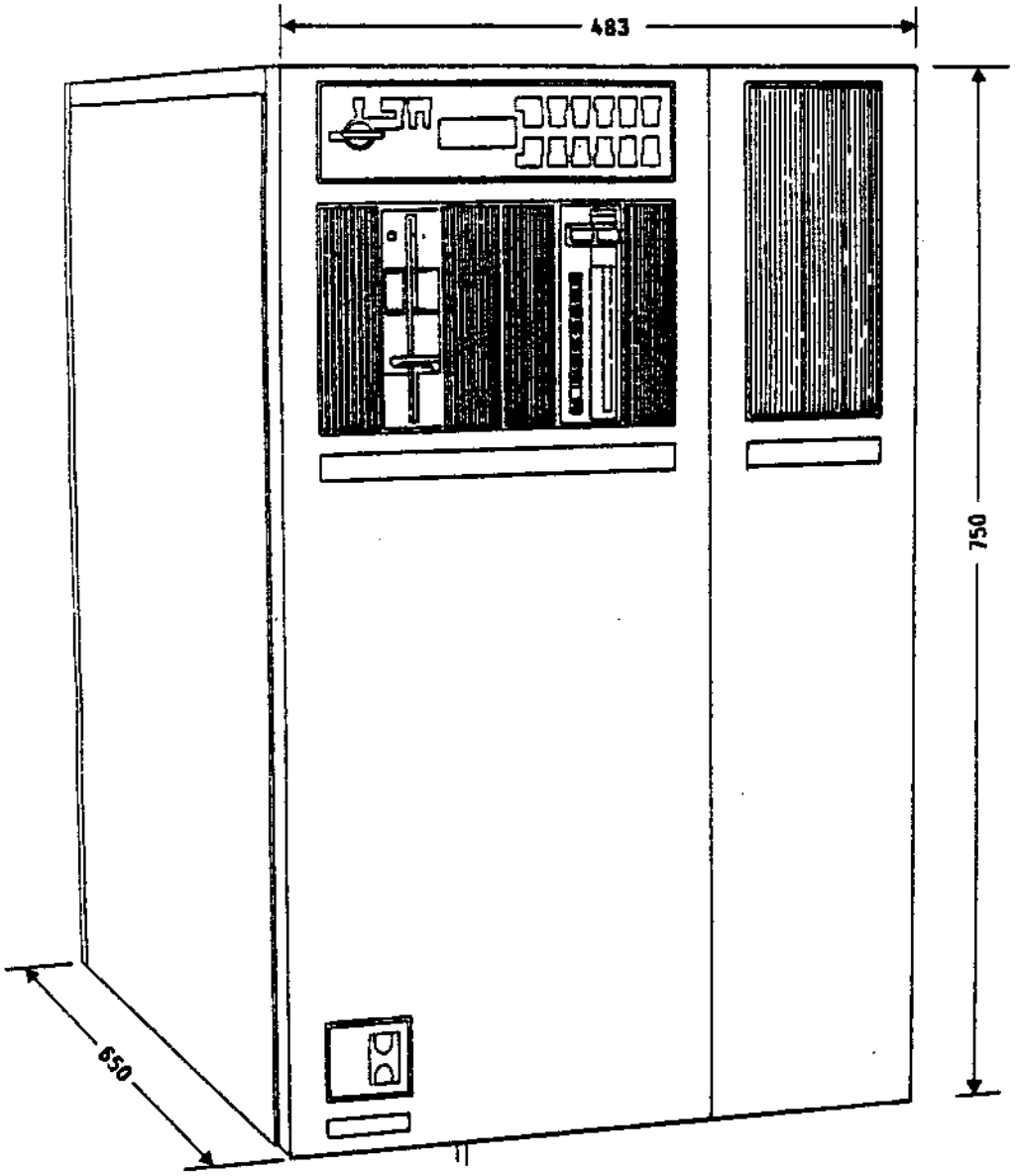


Fig. 4-10 Front View and Dimensions (in mm) of the LSX 3035/45 System

For the service area, see Figure 4-15.

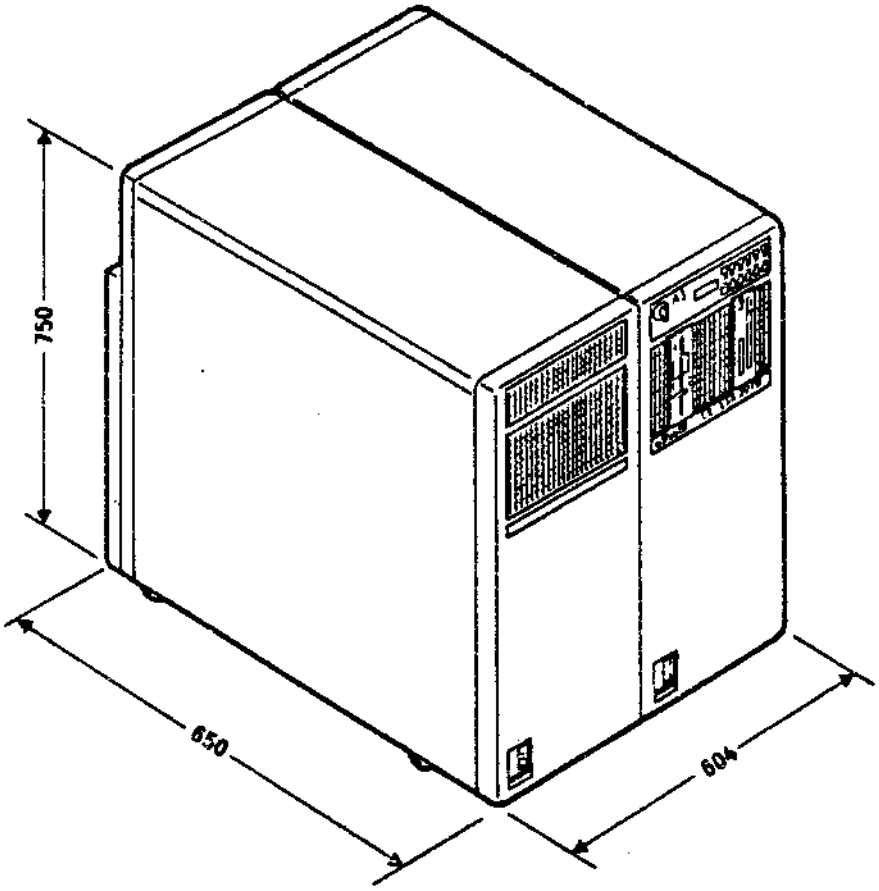


Fig. 4-11 LSX3070/80 Front View and Dimensions (in mm) of the system

For the service area, see Figure 4-16.

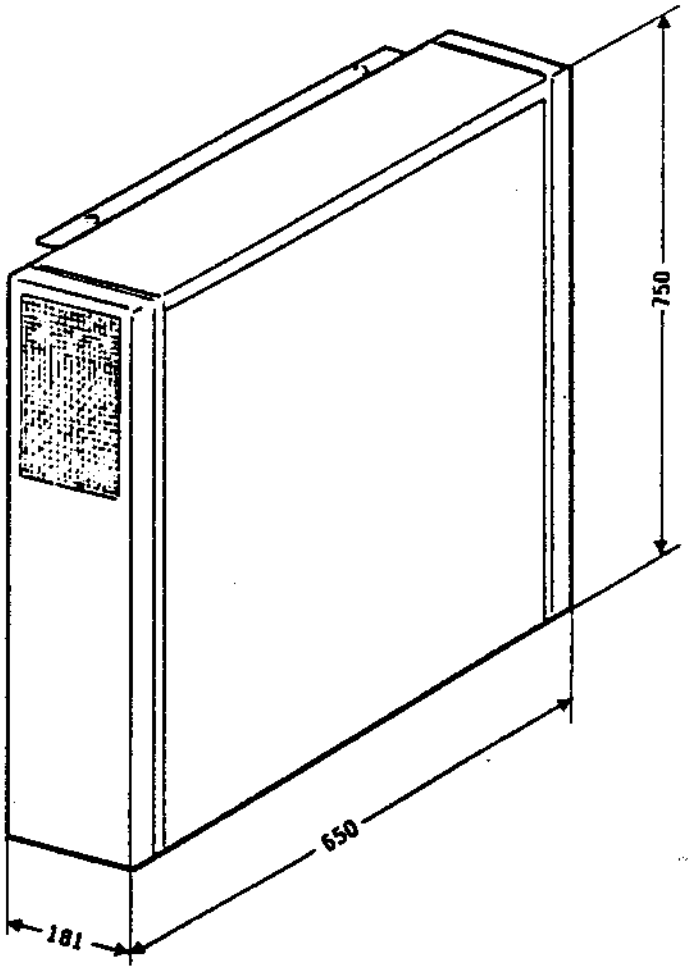


Fig. 4-12 Front View and Dimensions (in mm) of the SB1 Expansion Cabinet SB1 for LSX3020/30/40 and LSX 3070/80 systems (can only be expanded on the right of the SB0 base module)

For the service area, see Figures 4-14 and 4-16.

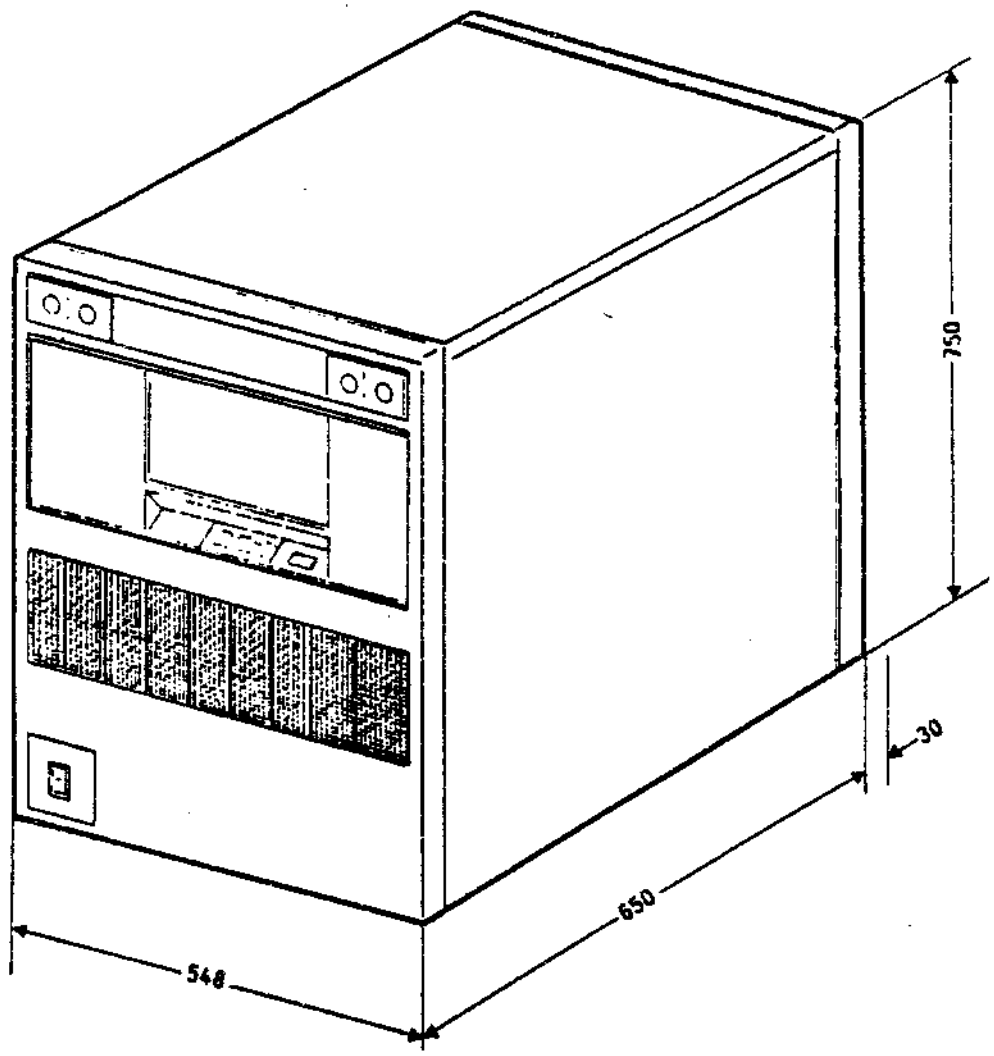


Fig. 4-13 Front View and Dimensions of the SB2 Expansion Cabinet for LSX3020/30/40, LSX3035/45 and LSX 3070/80 Systems

For the service area, see Figures 4-14 and 4-16.

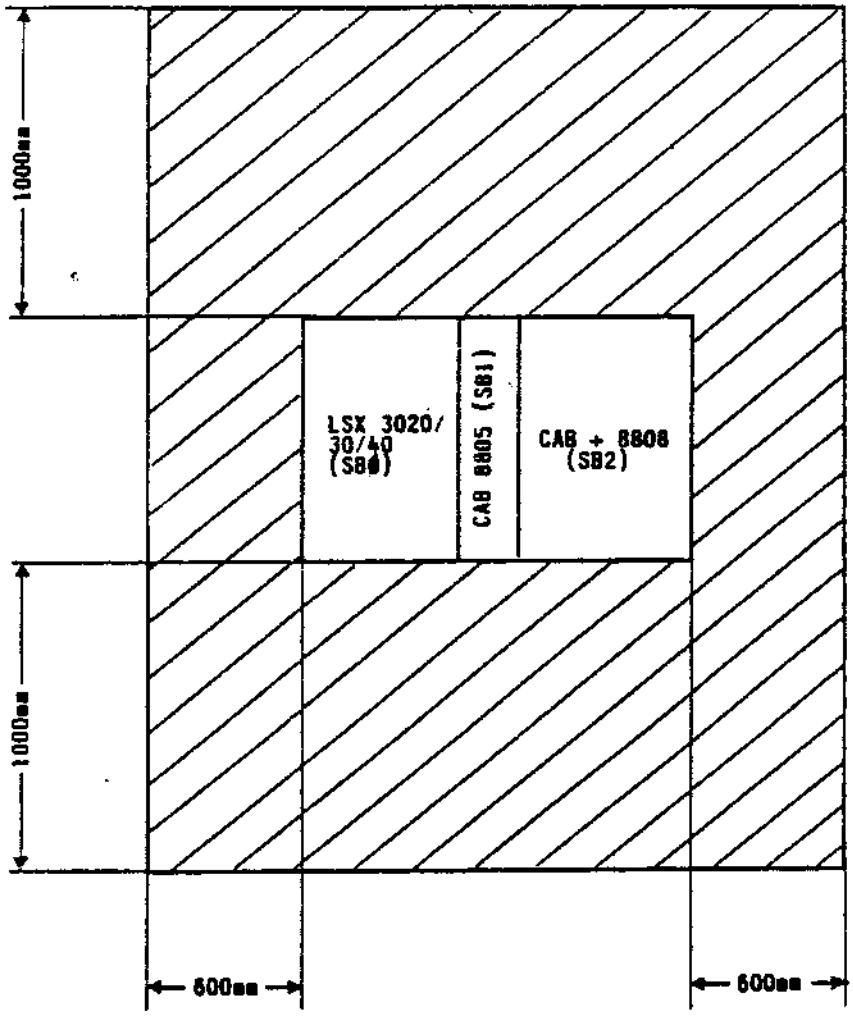


Fig. 4-14 LSX 3020/30/40. Example of Configuration with CAB 8805-CAB 8808 Base Unit

Note: At least two network sockets are required for the alternating power supply of the system.

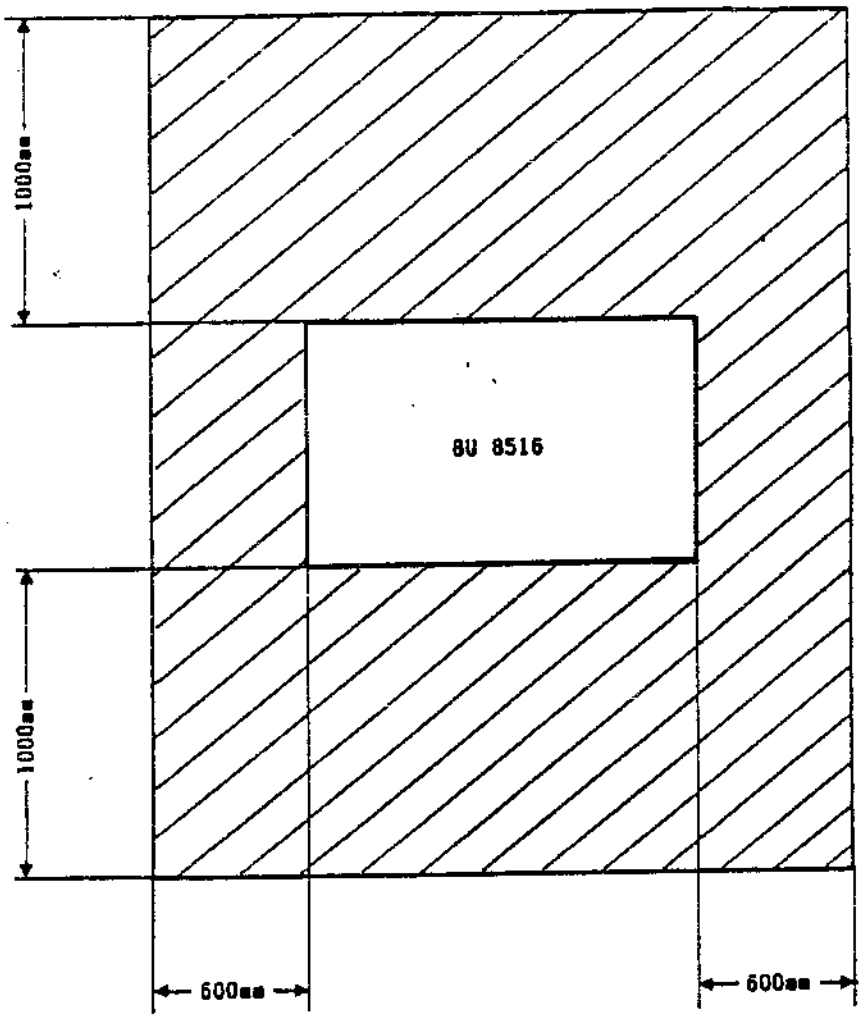


Fig. 4-15 LSX3035/45. Example of Configuration with Base Unit

Note: At least 1 network socket is required for the alternating power supply of the system.

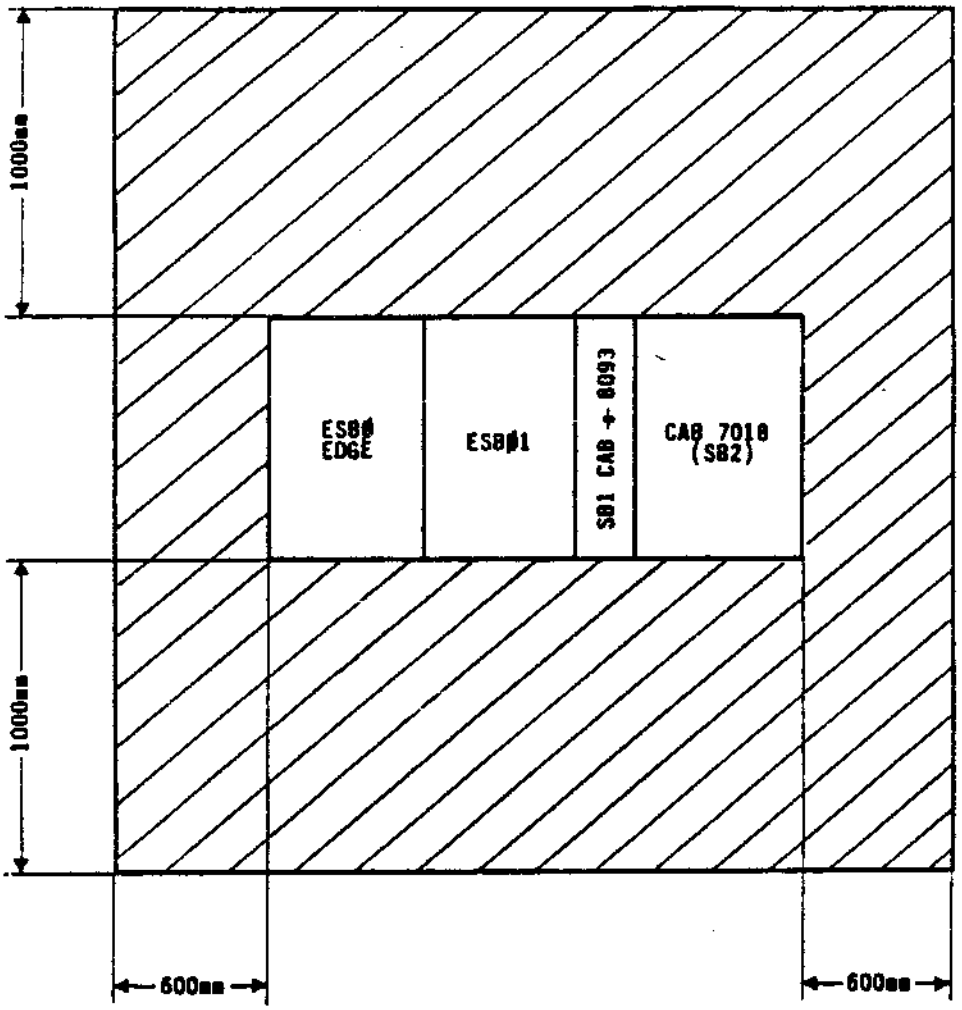


Fig. 4-16 LSX3070/80. Example of Configuration with CAB 8093 and CAB 7018 Base Units

Note: At least 3 service sockets are required for the alternating power supply of the system.

5. SYSTEM CHARACTERISTICS

5.1 ELECTRICAL CHARACTERISTICS

The network voltage must be single-phase.

Voltage and frequency:

FREQUENCY	VOLTAGE (Volts)				
	110	115	120	220	240
50 Hz	•		•	•	•
60 Hz	•	•		•	

Network variation ~ 10%

Frequency variation ~ 2%

Total network crash allowed for less than half a period (10 ms).

When the network power supply exceeds the above-mentioned tolerances, a stabilizer must be used. This stabilizer must have a capacity equal to the maximum power absorbed by the system, together with the following characteristics:

- Resonant iron type or saturated iron with power: higher than the configuration.
- Output voltage tolerance normally guaranteed by the suppliers: ~2%.
- Output impedance: ≤ 4 ohm
- Harmonic distortion: ≤ 5 %
- Cos Φ between 1 and 0.85 in advance.

In order to prevent voltage drops on systems where protection is required for data and work integrity, the use of continuity Static Groups is recommended.

An Uninterruptable Power Supply (UPS) of 1200 watts is currently available from "LSX 3000 Project Management" (see page 5-51).

5.2 POWER SUPPLY CHARACTERISTICS

POWER SUPPLY TYPE	WATT POWER	ABSORPTIONS (MAX AMPS)							LSX 3005/10	LSX 3020/30/40	LSX 3035/45	LSX 3070/80
		+ 3V	+ 5V	-5.2V	+ 12V	+ 12V	+ 24V	+ 35V				
LS 24	240		32		9	1			*		*	
LB 40	350		40		2.5	1.4		6		*	*	*
LS 30	300		60							*	*	*
LC 12	125		25							*		*
LS 10	105		6.5		6						*	*
PWS (EDGE)	1000	8	150	6	9	3						*
* DCA 36/5/12	35.3		1.3		2.4					*	*	*
• DCA 36/5/24	35.3		1.3				2.4			*		*

* For 5 1/4" peripherals

• For 8" peripherals

SB0 AND SB1 POWER SUPPLY LOCATION

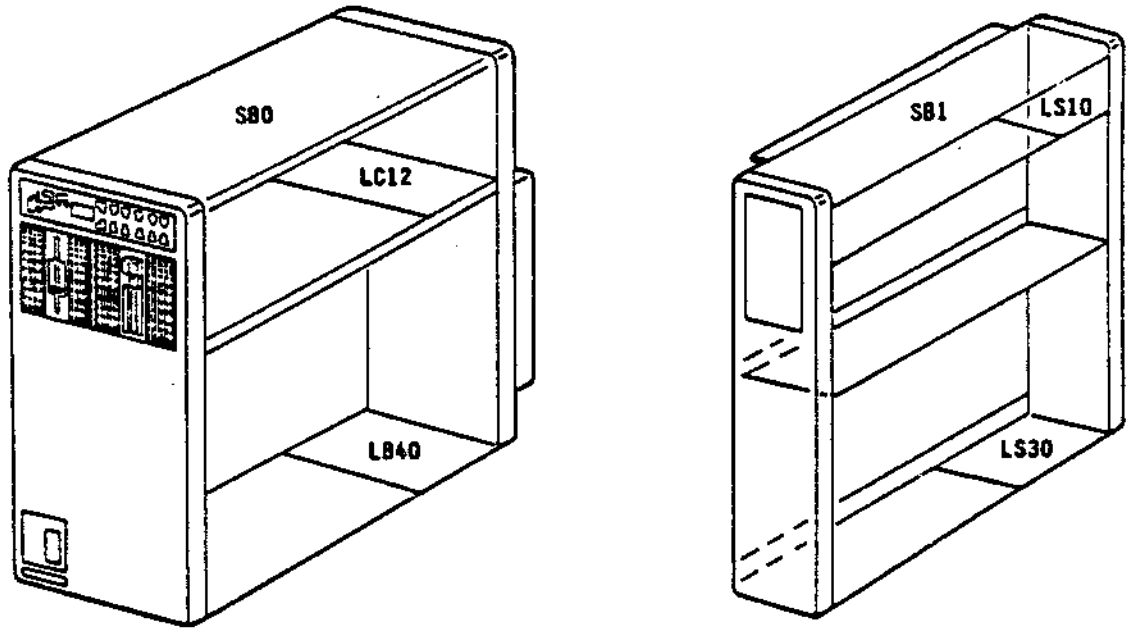


Fig. 5-1 Power Supply Location

INSERTION IN THE SYSTEM

LS24. Always in LSX 3005/10, or in CAB 8088 for set 4 HDU (SET 8523) LSX 3035/45.

LB40. Always in SB0 (in the various LSX 3070/80, LSX 3020/30/40 and LSX 3035/45 destination BUs).

LC12. Always in SB0; used for LSX 3020/30/40 11 pp.

LS30. Housed at the bottom of SB1; used for LSX 3020/30/40 16 pp., or LSX 3035/45.

LS10. Housed at the top of SB1; supplies power to the HDUs in the cabinet.

UPLS. 1.2 kW housed in the SB1 cabinet; used as continuity group for LSX 3020/30/40 and LSX 3035/45.

5.3 ABSORPTION OF HARDWARE MODULES AND PERIPHERALS INTEGRATED IN THE SYSTEMS

The table below indicates the absorptions of the hardware modules used in LSX 3000 systems.

MODULE DESCRIPTION	ABSORPTIONS (A)			POWER (WATTS)	LSX 3005/ 3010	LSX 3020/ 30-40	LSX 3035/ 45 80	LSX 3070/	NOTES
	+5V	-12V	-12V						
C.P.U	T.B.D			T.B.D				*	ON EDGE MODULE
IOC 9003	T.B.D			T.B.D				*	ON EDGE MODULE
IOC 9004	T.B.D			T.B.D				*	ON EDGE MODULE
MMU	T.B.D			T.B.D				*	ON EDGE MODULE
MMU/SP	T.B.D			T.B.D				*	ON EDGE MODULE
MCU/MEM8M	T.B.D			T.B.D				*	ON EDGE MODULE

MODULE DESCRIPTION	ABSORPTIONS(A)			POWER (WATTS)	LSX 3005/ 3010	LSX 3020/ 30/40	LSX 3035/ 45	LSX 3070/ 80	NOTES
	+5V	-12V	-12V						
MCU/MEM 16M	T.B.D			T.B.D				*	ON EDGE MODULE
MCU/MEM 32M	T.B.D			T.B.D				*	ON E DGE MODULE
SAM 8000	T.B.D			T.B.D				*	ON EDGE MODULE
CENTRALUNIT UCO68	9.5	0.032	0.032	47.7		*			
CENTRAL UNIT UCO96	9.5	0.032	0.032	47.7				*	
CENTRALUNIT UCO3068	5 4.3	0.06	0.06	26.44 21.5	*				RAM disabled
MEMORY 2 MB TCM 8046	4.2 2.9			21 14.8		*			STAND BY ACTIVE
MEMORY 4 MB WITH ECC TCM 8854	5.16 2.78			25.8 13.9		*	*		STAND BY ACTIVE
MEMORY 8 MB WITH ECC TCM 8858	5.32 2.84			26.6 14.2		*	*		STAND BY ACTIVE
MEMORY 16 MB WITH ECC TCM 8866	5.64 3.26			28.2 16.3		*	*		STAND BY ACTIVE
MEMORY 2 MB WITH ECC MEM 6462	3.25 0.7			16.25 3.5	*				STAND BY ACTIVE
MEMORY 4 MB WITHECC MEM 6464	3.5 1.2			17.5 6	*				STAND BY ACTIVE
MEMORY 6 MB WITH ECC MEM 6466N	3.75 1.6			18.75 8	*				STAND BY ACTIVE
MEMORY 8 MB WITHECC MEM 6468	4 2			20 10	*				STAND BY ACTIVE
HDU CONTROL-LER(ESDI) OLIDISK GO 427	6			30		*	*		

MODULE DESCRIPTION	ABSORPTIONS (A)			POWER (WATTS)	LSX 3005/ 3010	LSX 3020/ 30-40	LSX 3035/ 45	LSX 3070/ 80	NOTES
	+5V	-12V	-12V						
HDU CONTR. ESDI GO404-405	5.2			26	*				
FILEPROCES. GO 497 (FP4)	3.5			17.5			*		
FILEPROCES. GO 458 (FP1)	2.5			12	*	*			
STC CONTR. (STC 8062) GO 437	3.5			15.5	*	*		*	
FDU (m) CONTR. GO 280 D (MFC8054)	2.5			12.5	*	*		*	
MTU CONTR. (MTC 3543) GO 278 B	2.8			14.2		*		*	
MUX 7089/3788 GO 322	2.5	0.20	0.06	14.22	*	*	*		MOS
MUX 7091/3688 GO322/R	3.8	0.20	0.06	14.22	*	*	*		MOS
MUX 8074 (OLICOM) GO 426	6.8			34		*	*	*	X/OS
ADAPTOR RS323-C.L. ADT 8076-IF373/A	0.6			3.2		*	*	*	X/OS
MUX 8529 ALC 8 GO 471	3.8	0.06	0.06	20.5				*	

MODULE DESCRIPTION	ABSORPTIONS(A)			POWER (WATTS)	LSX 3005/ 3010	LSX 3020/ 30-40	LSX 3035/ 45	LSX 3070/ 80	NOTES
	+5V	-12V	-12V						
STC 45/60 MB	0.6	1.6 4.4		22.2 55.8	•	•	•	•	OPERATING CURRENT START AND STOP CURRENT
STC 150 MB	0.5 0.7	0.8 1.5		12.1 21.5			•		START AND STOP OPERATING
mFDU 1 MB (DRIVE)	0.55	1.25		17.7	•	•	•	•	
MTU 40 MB				320		•		•	
MTU1600/ 6250BPI				300		•		• •	
HDU 140 MB SCSI	2 2	2.4 4.5		38.5 64	•		• •		START OPERATING
HDU 315 MB SCSI	2 2 2	1.8 2.45 4.35		31.5 37.5 62.20	•		•		SEEK-START OPERATING
HDU 640 MB SCSI								•	
HDU 40 MB SCSI HDU 8844	2 2	2.4 4.5		38.8 64	•				OPERATING START
HDU 80 MB SCSI HDU 88 45	2 2	2.4 4.5		38.8 64	•				OPERATING START
HDU 140 MB ESDI HDU 7051	1.5 1.5	2.1 4.3		32.2 59	•	•		•	OPERATING START
HDU 315 MB ESDI HDU 8067	1.5 1.9	2.4 5		36.3 69.5	•	•		•	OPERATING START
HDU 630 MB ESDI						•		•	
2 x 24 LPU 3348 GO331	2.74	0.12	0.1	16.3	•	•			MOS
ILC LPU9149 GO459	2.8	0.07		16.84	•	•	•	•	

MODULE DESCRIPTION	ABSORPTIONS (A)			POWER (WATTS)	LSX 3005/ 3010	LSX 3020/ 30/40	LSX 3035/ 45	LSX 3070/ 80	NOTES
	+ 5V	+ 12V	−12V						
ETHERNET LCU 3323 GO 212/ A	2,1	0,5		16,5	•	•	•	•	
STARLAN DUMB NCU 9115 GO 431					•	•	•	•	
EPSYLON NPU9125 GO 435	3,5	0,5	0,03	23,8	•	•	•	•	
EPSYLON PLUS NPU 9135 GO 475									
SSM CO127	1,8	0,11	0,16	12,6		•	•	•	
ENCRIPT. DEM8038 GO 257/E	2	0,1		11,2	•	•	•		
CO 114	0,71	0,1	0,1	6		•	•	•	
WS 685				55		•		•	X/OS
WS685/PC				40	•	•	•	•	X/OS
WS685/M				55	•	•	•		MOS
WYSE85-0				42	•	•	•	•	X/OS
WYSE50				45	•	•	•	•	X/OS
WYSE60				45	•	•	•	•	X/OS
WYSE99GT				42	•	•	•	•	X/OS
WSAMPEX210				55	•	•	•	•	X/OS
ELB 3684				50	•	•		•	MOS
DSM 3615				50	•	•		•	MOS

MODULE DESCRIPTION	ABSORPTIONS(A)			POWER (WATTS)	LSX 3005-3010	LSX 3020-30/40	LSX 3035/45	LSX 3070-80	NOTES
	+ 5V	−12V	−12V						
MULTIFUNC. KEYBOARD	0,4	0,05		2,6	*	*	*		MOS
PIN PAD PIN 1440	0,35	0,05		2,3	*	*	*		MOS
BADGE READER MBR 1932	0,1			0,5	*	*	*		MOS
BADGE READER MBW1810	0,1			0,5	*	*	*		MOS

5.4 CALCULATION EXAMPLES

LSX 3010

MODULE	ABSORBED POWER	
	W (C.C.)	W (C.A.)
CPU (UCO 3068)	25	35.2
MEM 64 66	18.75	26.8
STS 7037 GO417/418	25	35.2
STC 45/60 MB	22.2 55.8	31.3 OPERATING 78.6 START STOP TAPE
FP1 GO 458	12.5	17.6
HDU 88 44 40 MB	38.8 64	44.7 OPERATING 90.2 START
4 WS ELB 3684 DSM 3615 ANK 1401	–	500
TOTAL	142	691 20 W ARE ADDED TO THE TOTAL FOR EACHVENTILATOR

Note: * = estimated values.

MODULE	ABSORBED POWER	
	W (C.C.)	W(C.A.)
UCO 68	47.7	67.3
TCM 8047	21	29.6
OLICOM	34	47.6
OLIDISK	30	42
STS 7037	25	35
STARLAN	23.8	33.4
STC45/60M	22.2	31.3
2 HDU 7051	64.4	80.1
4 WS 685	–	220
TOTAL	268	586 20 W ARE ADDED TO THE TOTAL FOR EACHVENTILATOR

Note: If the current absorbed on the continuous voltages (+5V; +12V) exceeds the maximum values (page 5-2), the LS10 and LC12 expansion power supplies must be installed, depending on the circumstances.

MODULE	ABSORBED POWER	
	W (C.C.)	W (C.A.)
FP4 (GO497)	17.5	24.5
OLICOM2 (GO426E)	34	47.6
UCO96	47.7	66.4
TCM16 (16MB)	28.2	39.5
STU 8518 (150MB)	12.1	17
MFU 8849 (1.2MB)	17.7	24.8
2 HDU 8521 (315X2MB)	63	88.2
1 WS 685		55
TOTAL	220	363 20 W ARE ADDED TO THE TOTAL FOR EACHVENTILATOR

Note: If the current absorbed on the continuous voltages (+5V; +12V) exceeds the maximum values (page 5-2), the LS10 and LC12 expansion power supplies must be installed, depending on the circumstances.

MODULE	ABSORBED POWER	
	W (C.C.)	W (C.A.)
3 UCO 68	143.3	200.6
2 TCM 8047	42	58.8
OLICOM	34	47.6
OLIDISK	30	42
STS 7037	25	35
MFC 8054	14.3	20
MTC3543	14.2	19.8
mFDU	17.7	24.8
STC 45/60 M	22.2	31.3
2 HDU 7051	64.4	80.1
MTU		320
NPU9125	23.8	33.4
6 WS 685		330
TOTAL	431	1243 20 W ARE ADDED TO THE TOTAL FOR EACHVENTILATOR

Note: If the current absorbed on the continuous voltages (+5V; +12V) exceeds the maximum values (page 5-2), the LS10 and LC12 expansion power supplies must be installed, depending on the circumstances.

MODULE	ABSORBED POWER	
	W (C.C.)	W (C.A.)
FP4 (GO497)	17.5	24.5
3 OLICOM2 (GO426E)	112	142.8
2 CPU (UCO 96)	95.4	133.5
3 TCM16 (48 MB)	84.6	118.5
STU 150 MB	12.1	17
MFU 1.2 MB	17.7	24.8
4 HDU 315 MB	126	176.4
MTU 1600/6250 BPI		300
20 WS 685		1100
TOTALE	465.3	2051.4 20 W ARE ADDED TO THE TOTAL FOR EACHVENTILATOR

Nota: If the current absorbed on the continuous voltages (+5V; +12V) exceeds the maximum values (page 5–2), the expansion power supplies must be installed, depending on the circumstances.

MODULE	ABSORBED POWER	
	W (C.C.)	W (C.A.)
EDGE MODULE		1000
OLICOM	34	47.6
OLIDISK	30	42
MFC 8054	14.3	20
STS 7037	25	35
mFDU	17.7	24.8
STC 45/60	22.2	31.3
2 HDU 7051	64.4	80.1
8 WS 685		440
TOTAL	207	1720 20 W ARE ADDED TO THE TOTAL FOR EACH VENTILATOR

Note: If the current absorbed on the continuous voltages (+5V; +12V) exceeds the maximum values (page 5-2), the LS10 and LC12 expansion power supplies must be installed, depending on the circumstances.

5.5 CHARACTERISTICS OF EACH MODULE

The following is a list of the main characteristics of the integral modules, magnetic peripherals, printers and associated cables for connection to LSX 3000 systems (module dimensions are expressed in mm).

LSX 3005/10

VOLTAGE (V)	FREQUENCY (Hz)	ABSORBED POWER AC (W)	DISSIPATED POWER (Kcal/h)	WEIGHT (kg)	OPERATING TEMPERATURE (°C)	RELATIVE HUMIDITY (%)	DUST LEVEL ($mg.m^3$)	VENTILATION (l/s)
110 115 120 220 240	50 – 60	180*	100	20	10 – 40	15 – 85	0.25	140

Note: Power referred to the calculation example of integrated modules only.

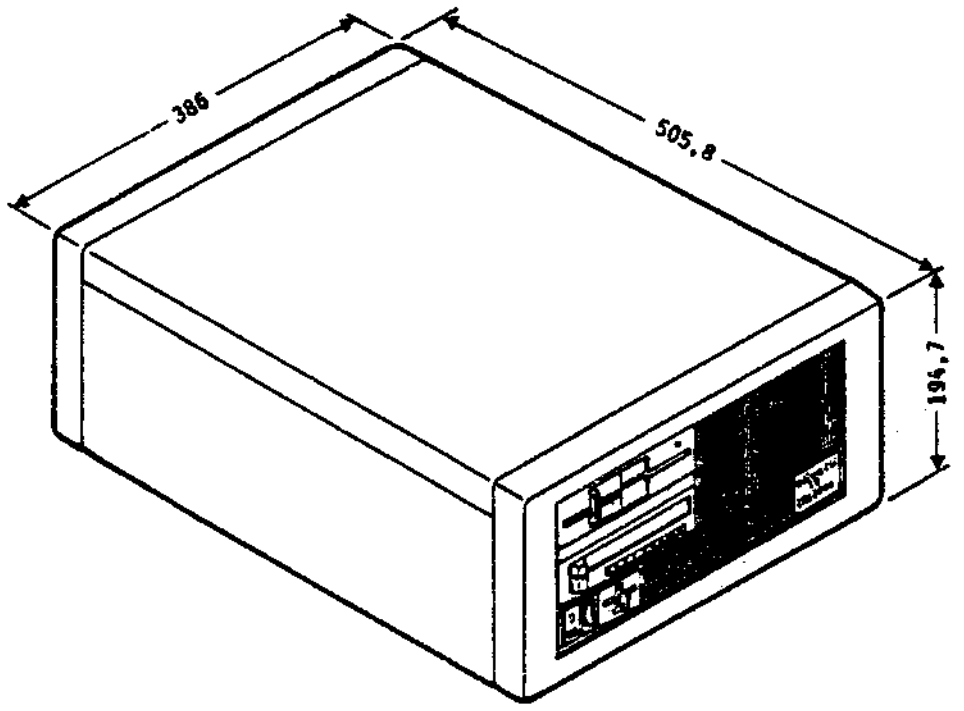


Fig. 5-2 *LSX 3005/10 Characteristics*

VOLTAGE (V)	FREQUENCY (Hz)	ABSORBED POWER AC (W)	DISSIPATED POWER (Kcal/h)	WEIGHT (kg)	OPERATING TEMPERATURE (°C)	RELATIVE HUMIDITY (%)	DUST LEVEL ($mg.m^3$)	VENTILATION (l/s)
110 115 120 220 240	50 – 60	400	300	70	10 – 40	15 – 85	0.25	140

Note: With the configuration of the calculation example, considering the integrated modules only (i.e. without WS685).

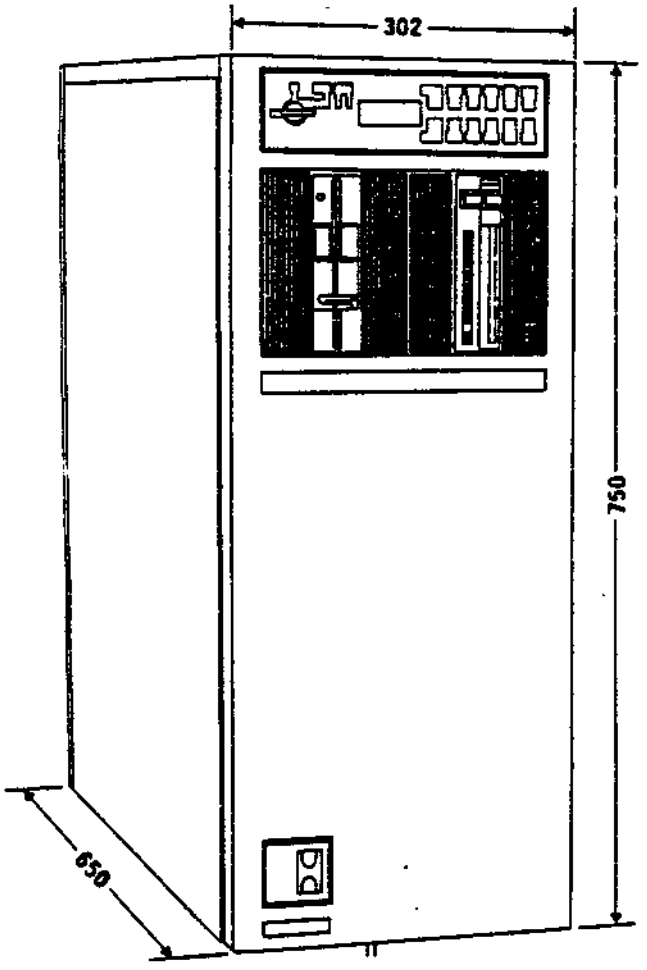


Fig. 5 -3 *LSX 3020/30/40 Characteristics and Dimensions*

VOLTAGE (V)	FREQUENCY (Hz)	ABSORBED POWER AC (W)	DISSIPATED POWER (Kcal/h)	WEIGHT (kg)	OPERATING TEMPERATURE (°C)	RELATIVE HUMIDITY (%)	DUST LEVEL ($mg.m^3$)	VENTILATION (l/s)
110 115 220 240	50 – 60	380		90	10 – 40	15 – 85	0.25	140

Note: With the configuration of the calculation example, considering only the integrated modules (without WS685).

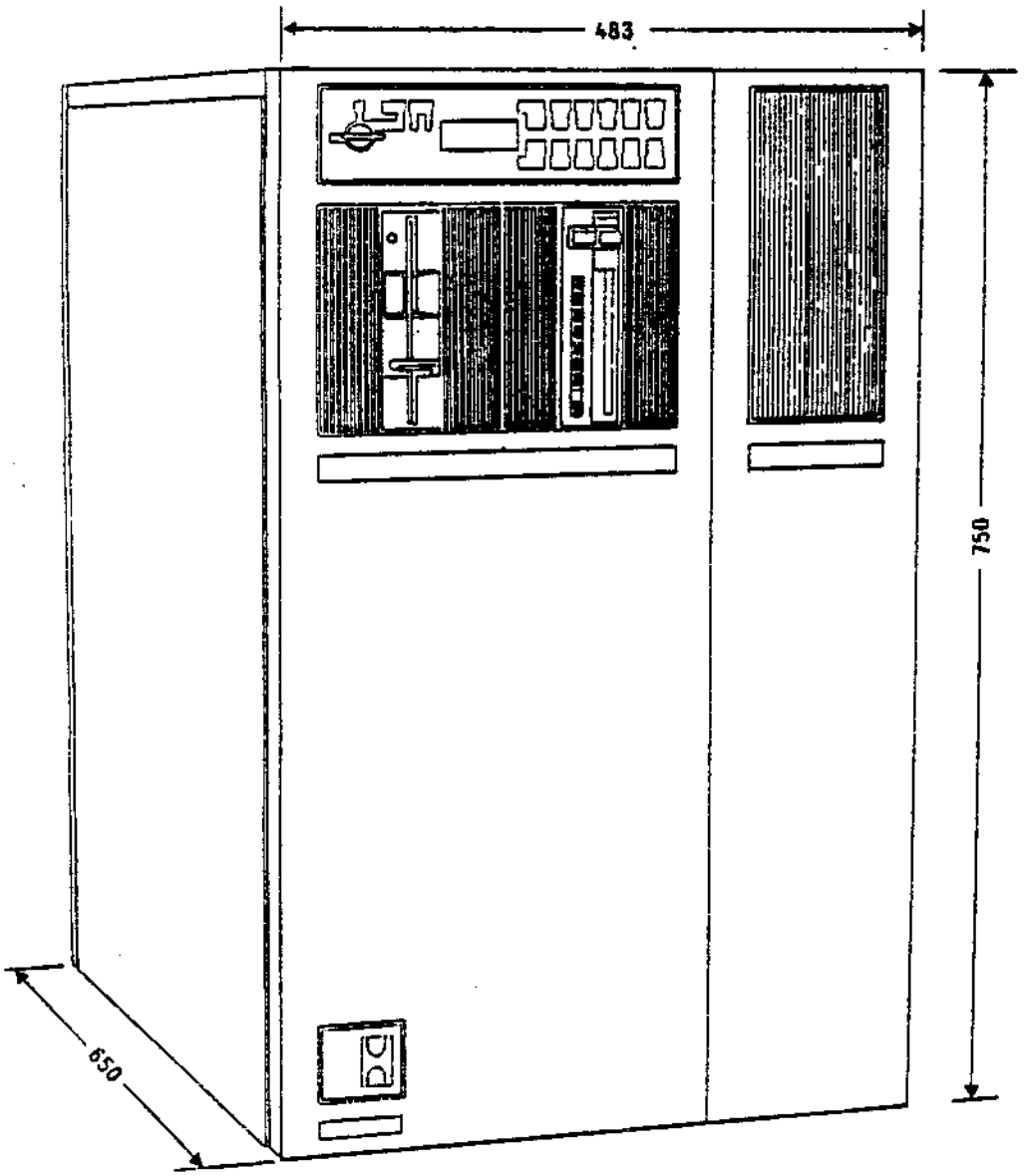


Fig. 5 -4 *LSX 3035/45 Characteristics and Dimensions*

VOLTAGE (V)	FREQUENCY (Hz)	ABSORBED POWER AC (W)	DISSIPATED POWER (Kcal/h)	WEIGHT (kg)	OPERATING TEMPERATURE (°C)	RELATIVE HUMIDITY (%)	DUST LEVEL ($mg.m^3$)	VENTILATION (l/s)
110 115 220 240	50 — 60	1280	1100	150	10 – 40	0.25	140	

Note: With the configuration of the calculation example, considering the integrated modules only (without WS685).

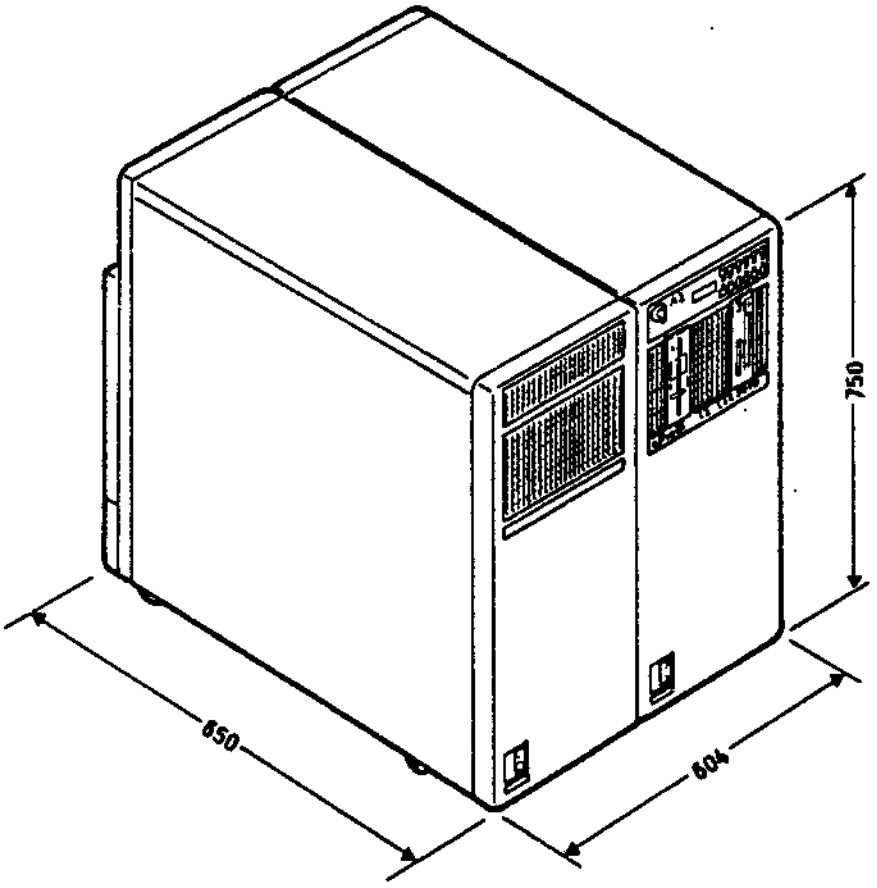


Fig. 5 -5 *LSX3070/80 Characteristics and Dimensions*

CAB 8805 (SB1)

VOLTAGE (V)	FREQUENCY (Hz)	ABSORBED POWER AC (W)	DISSIPATED POWER (Kcal/h)	WEIGHT (kg)	OPERATING TEMPERATURE (°C)	RELATIVE HUMIDITY (%)	DUST LEVEL ($mg.m^3$)	VENTILATION (l/s)
110 115 220 240	50 — 60	105–300	70–200	20	10 – 40	20–80	0.25	

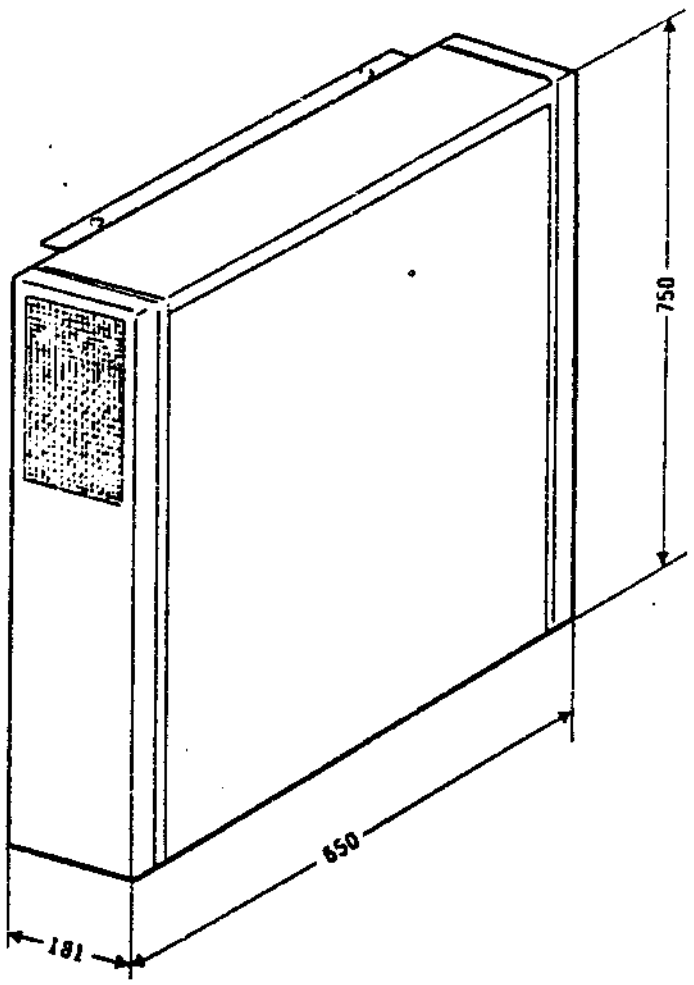


Fig. 5 -6 *CAB 8805 (SB1) Characteristics and Dimensions*

CAB 8808 (SB2)

VOLTAGE (V)	FREQUENCY (Hz)	ABSORBED POWER AC (W)	DISSIPATED POWER (Kcal/h)	WEIGHT (kg)	OPERATING TEMPERATURE (°C)	RELATIVE HUMIDITY (%)	DUST LEVEL ($mg.m^3$)	VENTILATION (l/s)
110 115 . .220 240	50 — 60	300	240	20-80	10 – 40	20 – 80	0.25	

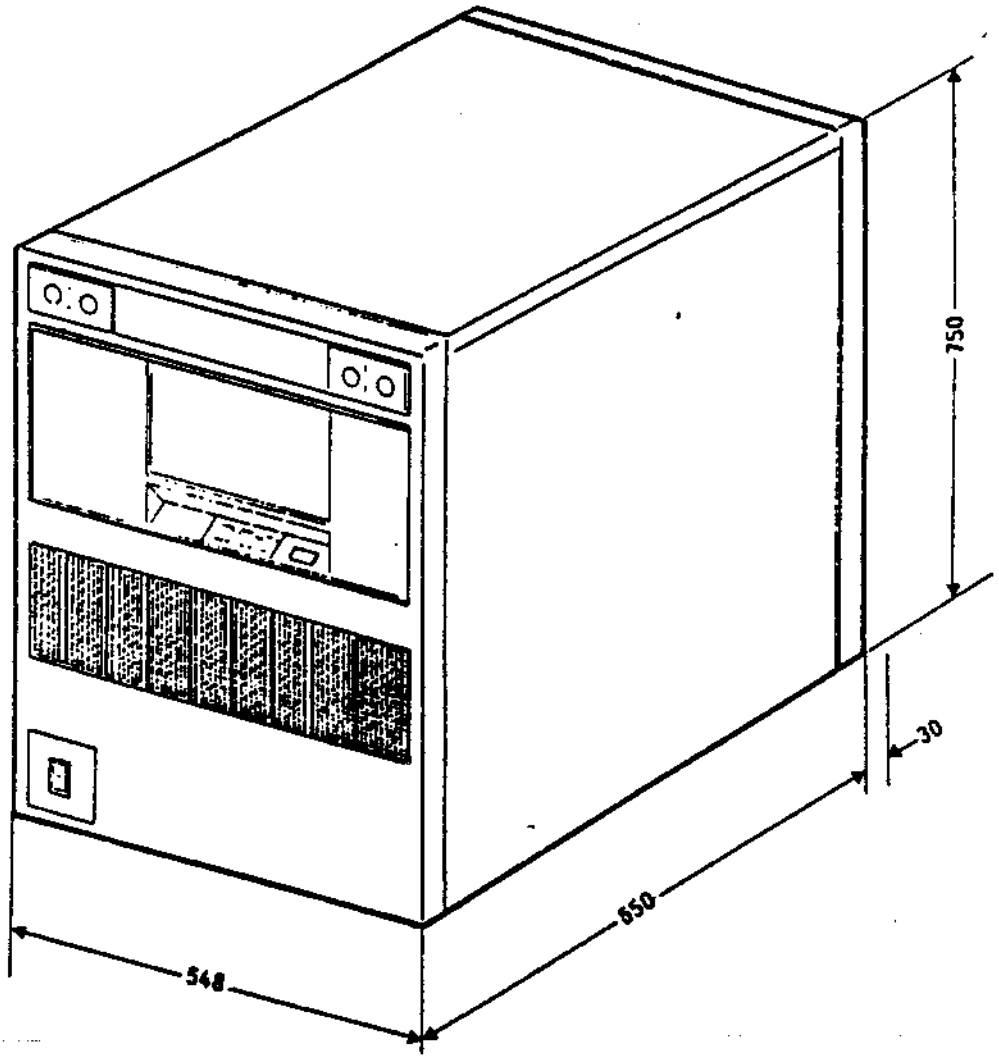


Fig. 5 -7 *CAB 8808 (SB2) Characteristics and Dimensions*

VOLTAGE (V)	FREQUENCY (Hz)	ABSORBED POWER AC (W)	DISSIPATED POWER (Kcal/h)	WEIGHT (kg)	OPERATING TEMPERATURE (°C)	RELATIVE HUMIDITY (%)	DUST LEVEL ($mg.m^3$)	VENTILATION (l/s)
5 12		231		3	5 – 35	20 – 60	0.25	

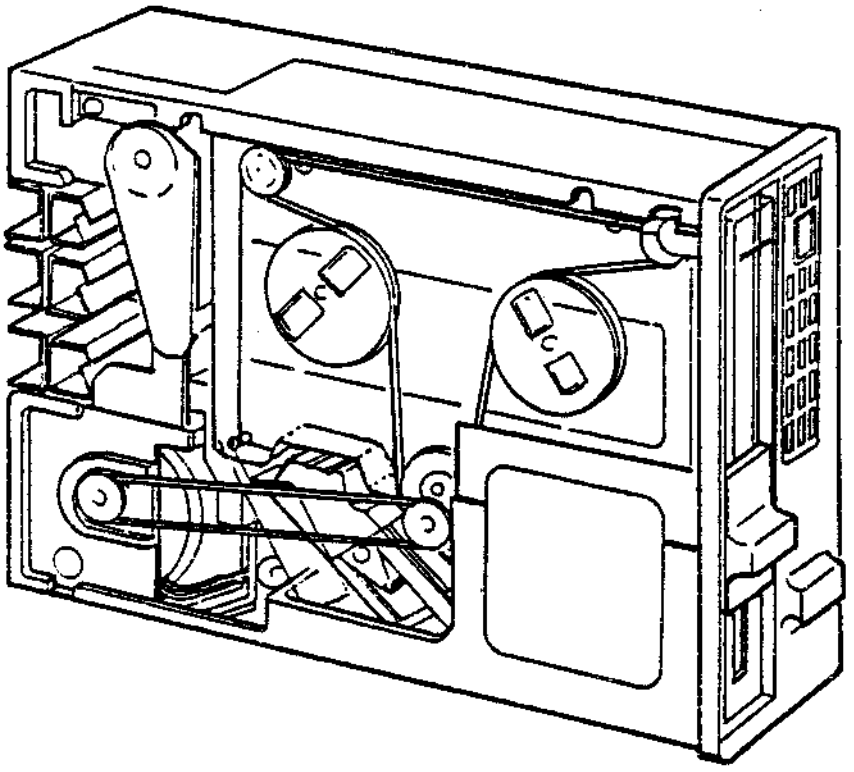


Fig. 5 -8 *STU 8061 45/60 MB Characteristics*

VOLTAGE (V)	FREQUENCY (Hz)	ABSORBED POWER AC (W)	DISSIPATED POWER (Kcal/h)	WEIGHT (kg)	OPERATING TEMPERATURE (°C)	RELATIVE HUMIDITY (%)	DUST LEVEL ($mg.m^3$)	VENTILATION (l/s)
5 12		53.9		1.36	5 – 45	20 – 80	0.25	

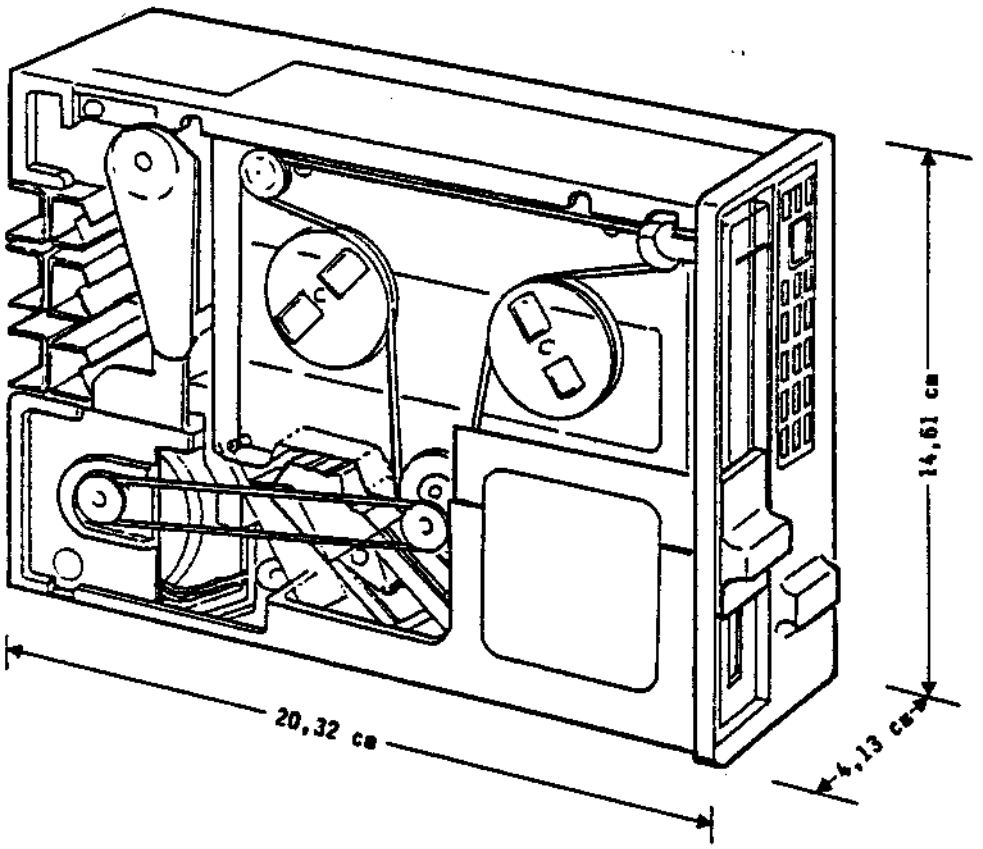


Fig. 5 -9 *STU 8518 - 150 MB Characteristics and Dimensions*

MTU 7040 MB

Start-stop tape unit used on LSX 3000 systems.

VOLTAGE (V)	FREQUENCY (Hz)	ABSORBED POWER AC (W)	DISSIPATED POWER (Kcal/h)	WEIGHT (kg)	OPERATING TEMPERATURE (°C)	RELATIVE HUMIDITY (%)	DUST LEVEL ($mg.m^3$)	VENTILATION (l/s)
110 115 220 240	50 – 60	300	258	36	13 – 40	20 – 85	0.25	200 – 300

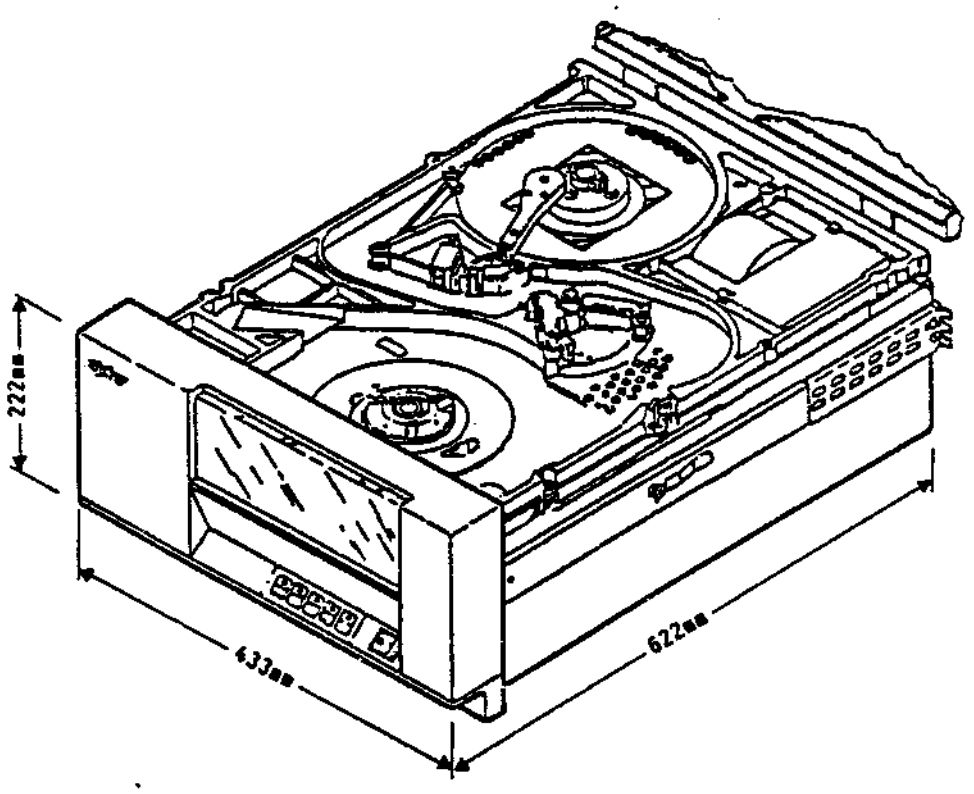


Fig. 5 -*10 MTU 7040 Characteristics and Dimensions*

Note: For the service area, see MTU cabinet.

MTU 8847 - 6250 bpi

Start-stop tape unit used on LSX 3000 systems.

VOLTAGE (V)	FREQUENCY (Hz)	ABSORBED POWER AC (W)	DISSIPATED POWER (Kcal/h)	WEIGHT (kg)	OPERATING TEMPERATURE (°C)	RELATIVE HUMIDITY (%)	DUST LEVEL ($mg.m^3$)	VENTILATION (l/s)
110 115 220 240	50 – 60	300	1025	49.5	15 –32	20 – 80	0.25	

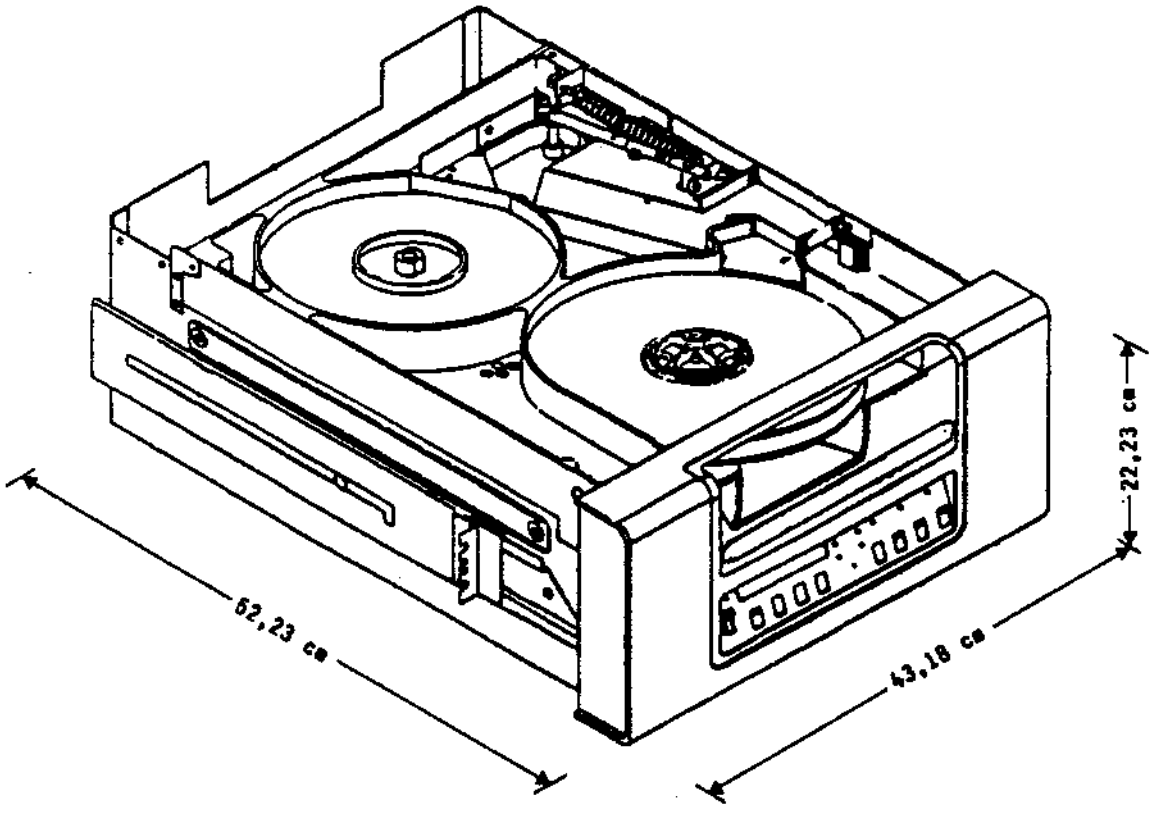


Fig. 5 -11 *MTU 8847 - 6250 bpi Characteristics and Dimensions*

Note: For the service area, see MTU cabinet.

HDU 140 MB (ESDI)

VOLTAGE (V)	FREQUENCY (Hz)	ABSORBED POWER AC (W)	DISSIPATED POWER (Kcal/h)	WEIGHT (kg)	OPERATING TEMPERATURE (°C)	RELATIVE HUMIDITY (%)	DUST LEVEL ($mg.m^3$)	VENTILATION (l/s)
5 12		45	39	27	10 – 50	10 – 30	0.25	

ALTITUDE MIN - MAX	OPERATING - 300 + 3000 m.
	NON-OPERATING - 300 + 15000 m.

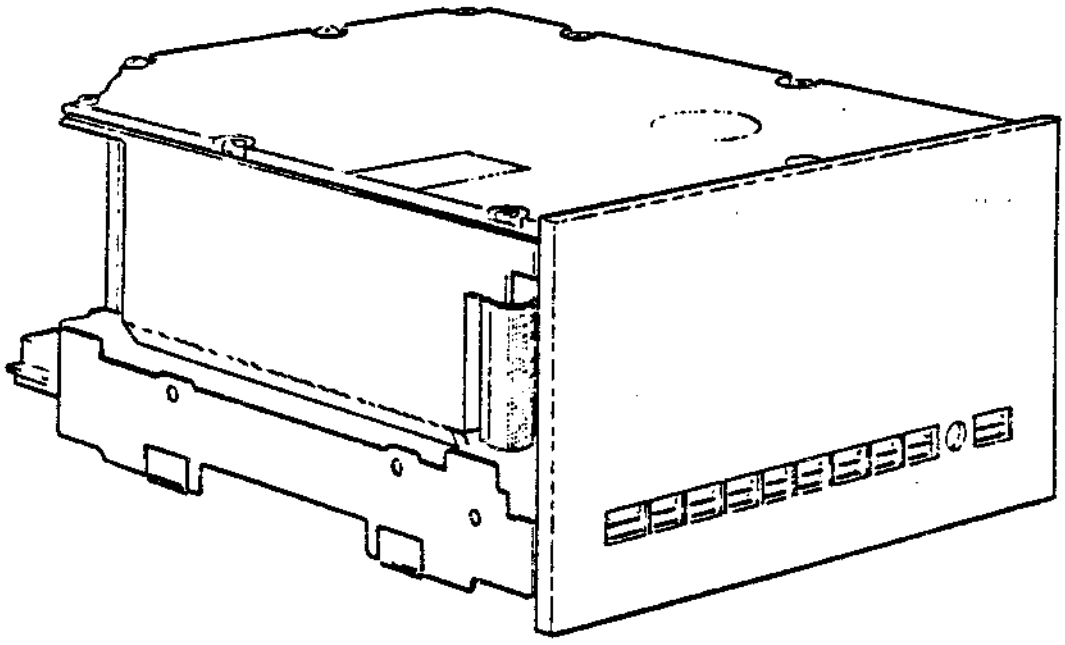


Fig. 5 -12 *HDU 140 MB Characteristics*

WS 685/M MOS

VOLTAGE (V)	FREQUENCY (Hz)	ABSORBED POWER AC (W)	DISSIPATED POWER (Kcal/h)	WEIGHT (kg)	OPERATING TEMPERATURE (°C)	RELATIVE HUMIDITY (%)	DUST LEVEL ($mg.m^3$)	VENTILATION (l/s)
110 115 120 220 240	50 – 60 .	55	47.3		5 – 45	5 – 95	0.25	

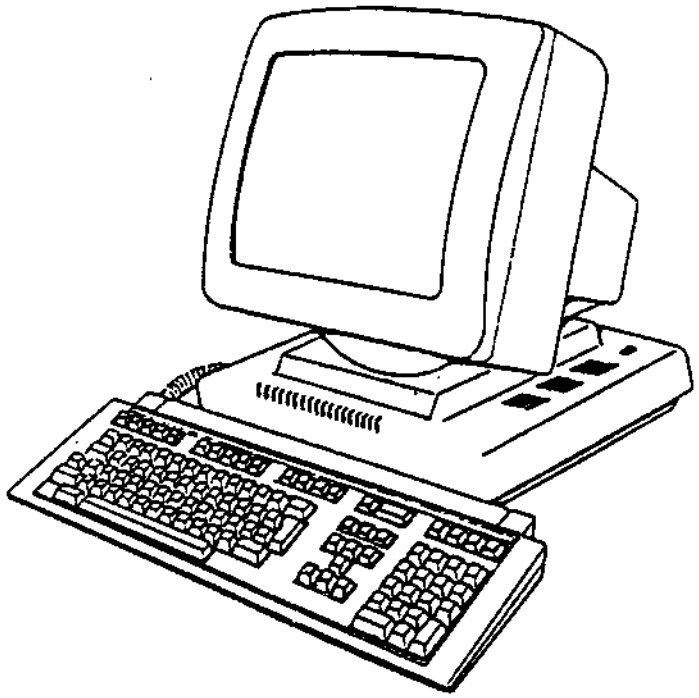


Fig. 5 - *13 WS 685/M (MOS)*

VOLTAGE (V)	FREQUENCY (Hz)	ABSORBED POWER AC (W)	DISSIPATED POWER (Kcal/h) .	WEIGHT (kg)	OPERATING TEMPERATURE (°C)	RELATIVE HUMIDITY (%)	DUST LEVEL ($mg.m^3$)	VENTILATION (l/s)
110 115 120 220 240	50 – 60	42	12.5		10 – 35	20 – 80		

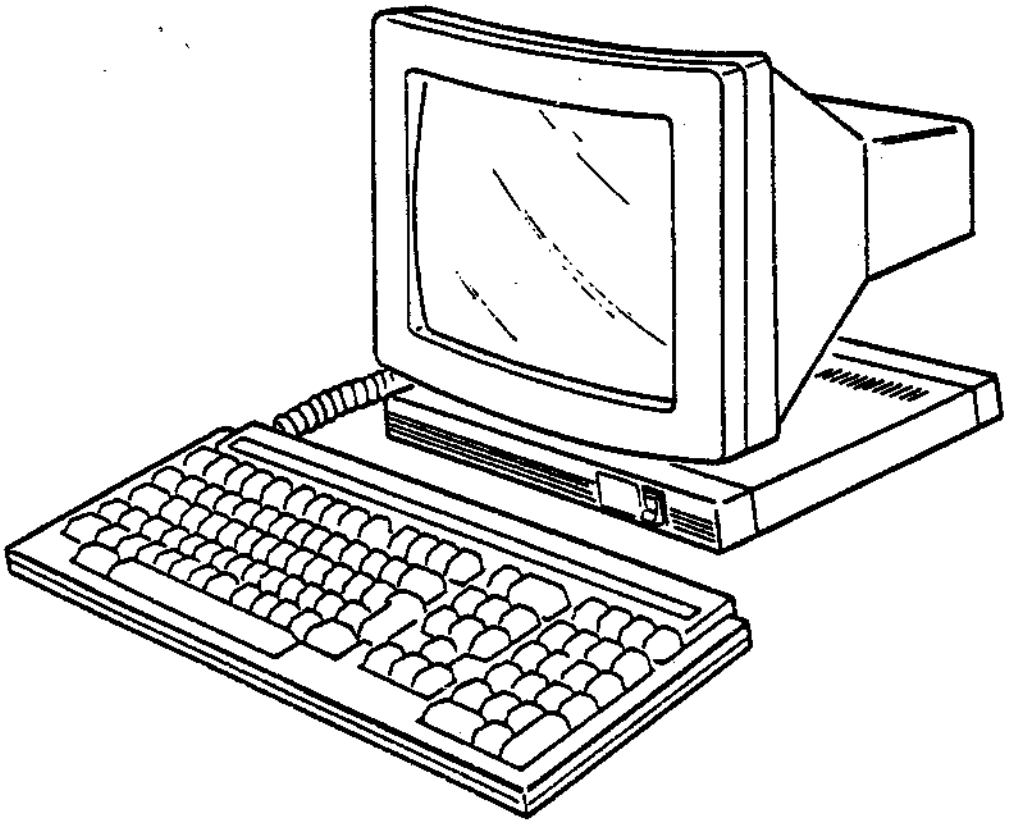


Fig. 5 -14 *WYSE 85-0 (X/OS)*

VOLTAGE (V)	FREQUENCY (Hz)	ABSORBED POWER AC (W)	DISSIPATED POWER (Kcal/h)	WEIGHT (kg)	OPERATING TEMPERATURE (°C)	RELATIVE HUMIDITY (%)	DUST LEVEL ($mg.m^3$)	VENTILATION (l/s)
110 115 120 220 240	50 – 60	45		9	10 – 40	10 – 90		

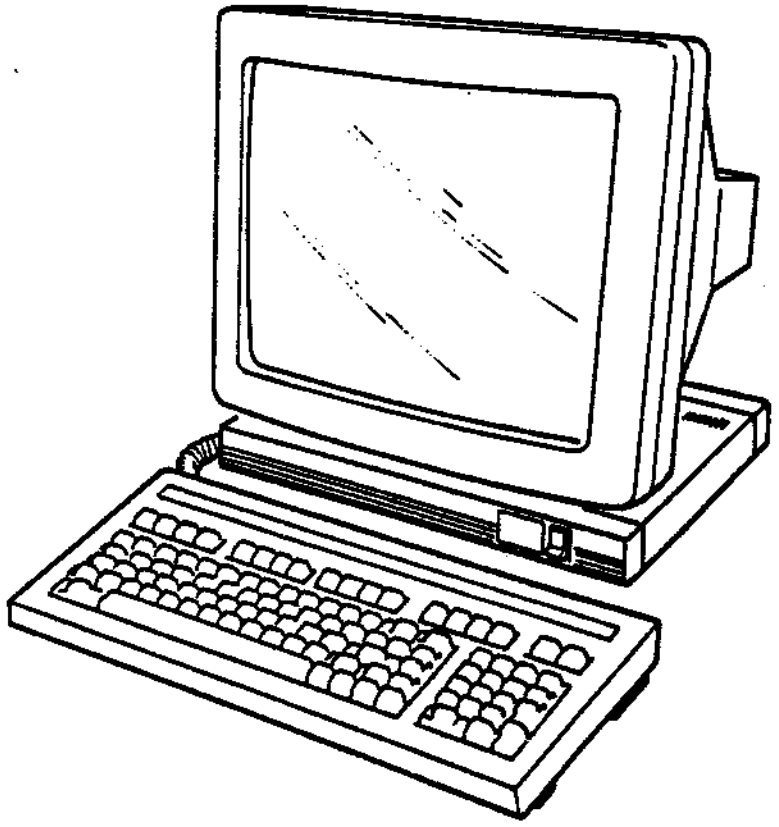


Fig. 5 - *15 WYSE 50 (X/OS)*

WYSE 99 GT (X/OS)

VOLTAGE (V)	FREQUENCY (Hz)	ABSORBED POWER AC (W)	DISSIPATED POWER (Kcal/h)	WEIGHT (kg)	OPERATING TEMPERATURE (°C)	RELATIVE HUMIDITY (%)	DUST LEVEL ($mg.m^3$)	VENTILATION (l/s)
110 115 120 220 240	50 – 60	42	12.5		10 – 35	20 – 80		

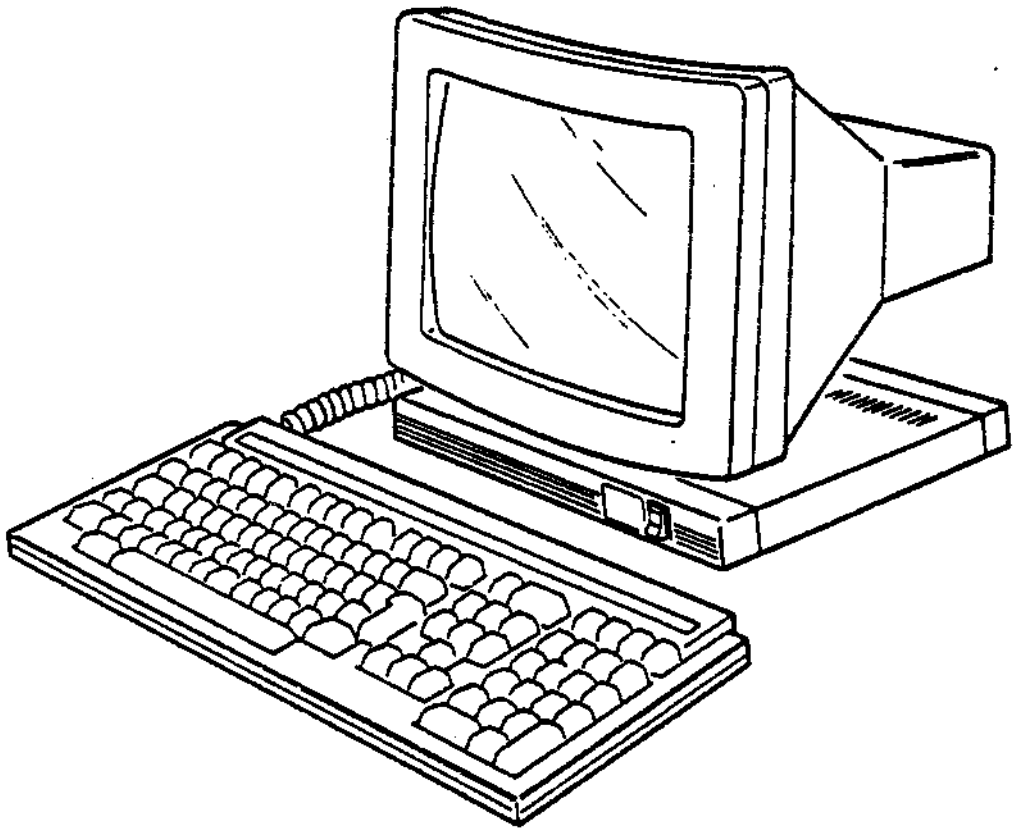


Fig. 5 -*16 WYSE 99 GT (X/OS)*

VOLTAGE (V)	FREQUENCY (Hz)	ABSORBED POWER AC (W)	DISSIPATED POWER (Kcal/h)	WEIGHT (kg)	OPERATING TEMPERATURE (°C)	RELATIVE HUMIDITY (%)	DUST LEVEL ($mg.m^3$)	VENTILATION (l/s)
110 115 120 220 240	50	45	20		10 – 40	20 –80		

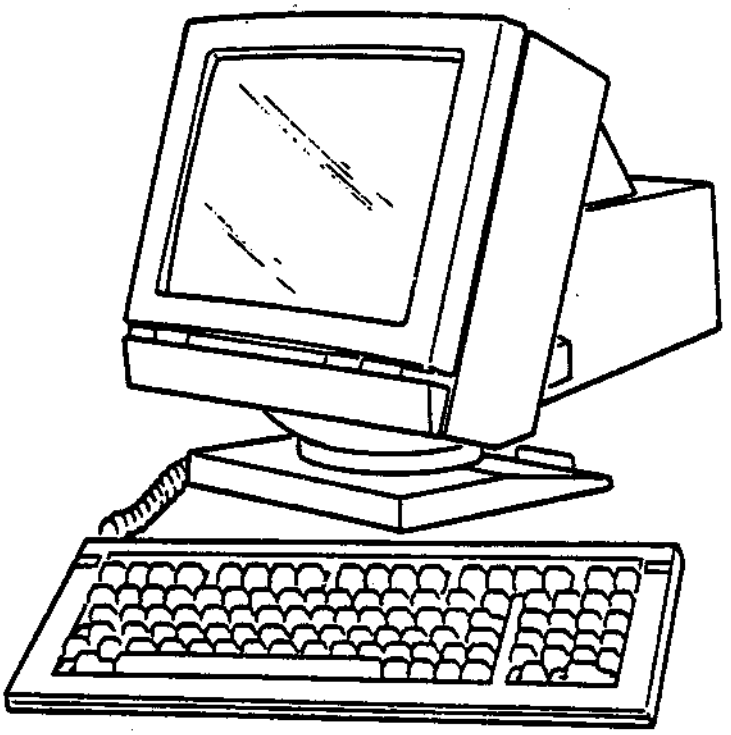


Fig. 5 -*17 WYSE 60 (X/OS)*

VOLTAGE (V)	FREQUENCY (Hz)	ABSORBED POWER AC (W)	DISSIPATED POWER (Kcal/h)	WEIGHT (kg)	OPERATING TEMPERATURE (°C)	RELATIVE HUMIDITY (%)	DUST LEVEL ($mg.m^3$)	VENTILATION (l/s)
110 115 120 220 240	50	55		9	0 – 40	5 – 95		

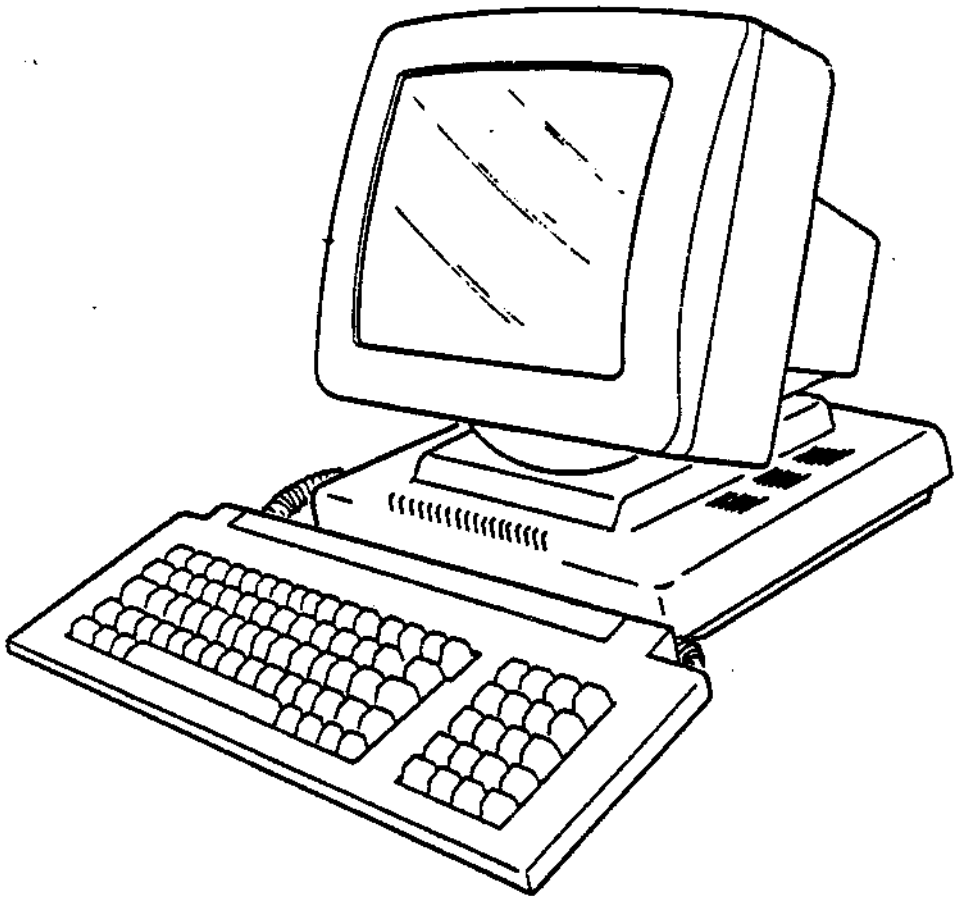


Fig. 5 -*18 WS AMPEX210 (X/OS)*

WS 685/PC (X/OS)

VOLTAGE (V)	FREQUENCY (Hz)	ABSORBED POWER AC (W)	DISSIPATED POWER (Kcal/h)	WEIGHT (kg)	OPERATING TEMPERATURE (°C)	RELATIVE HUMIDITY (%)	DUST LEVEL ($mg.m^3$)	VENTILATION (l/s)
110 115 120 220 240	50	40		12	5 – 40	5 – 95		

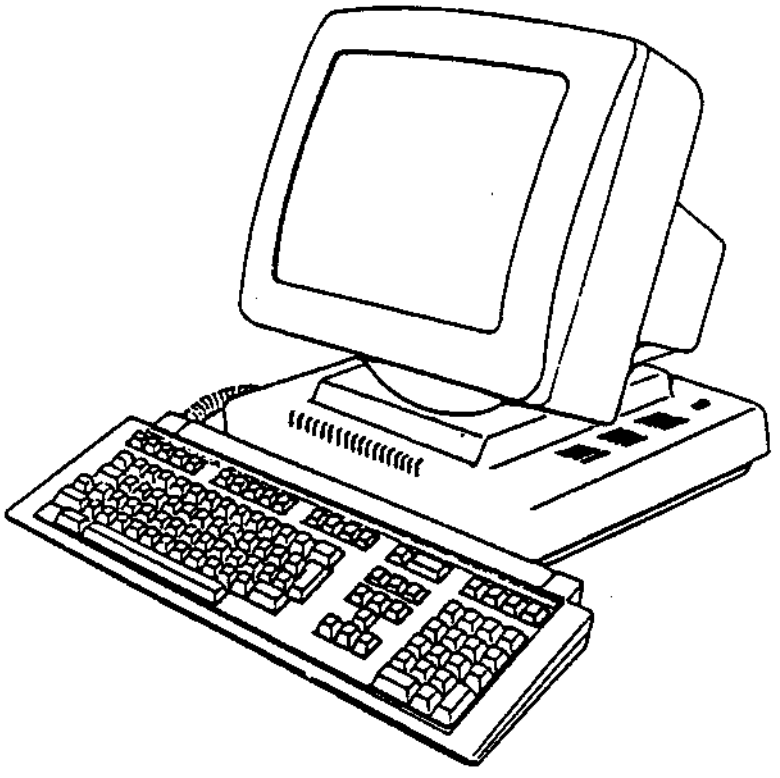


Fig. 5 -19 *WS 685/PC (X/OS)*

VOLTAGE (V)	FREQUENCY (Hz)	ABSORBED POWER AC (W)	DISSIPATED POWER (Kcal/h)	WEIGHT (kg)	OPERATING TEMPERATURE (°C)	RELATIVE HUMIDITY (%)	DUST LEVEL ($mg.m^3$)	VENTILATION (l/s)
110 115 120 220 240	50 — 60	55	47.3		5 – 45	5 – 95	0.25	

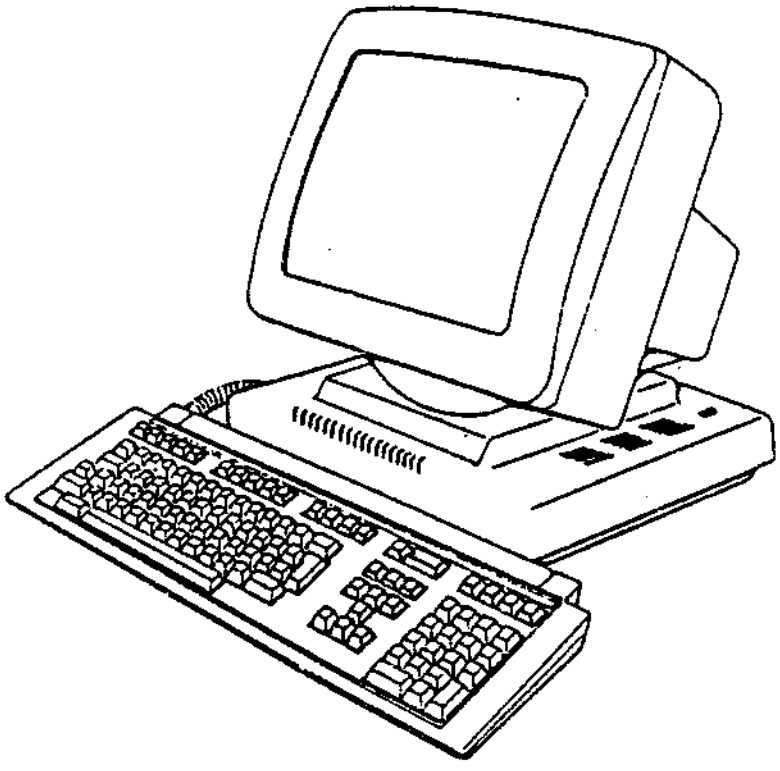


Fig. 5 -20 *WS 685 (X/OS)*

N+ F 14XX KEYBOARD (MOS with or without keys)

VOLTAGE (V)	FREQUENCY (Hz)	ABSORBED POWER AC (W)	DISSIPATED POWER (Kcal/h)	WEIGHT (kg)	OPERATING TEMPERATURE (°C)	RELATIVE HUMIDITY (%)	DUST LEVEL ($mg.m^3$)	VENTILATION (l/s)
5 12		3.36	3	2.4	10 – 40	10 – 95	0.25	

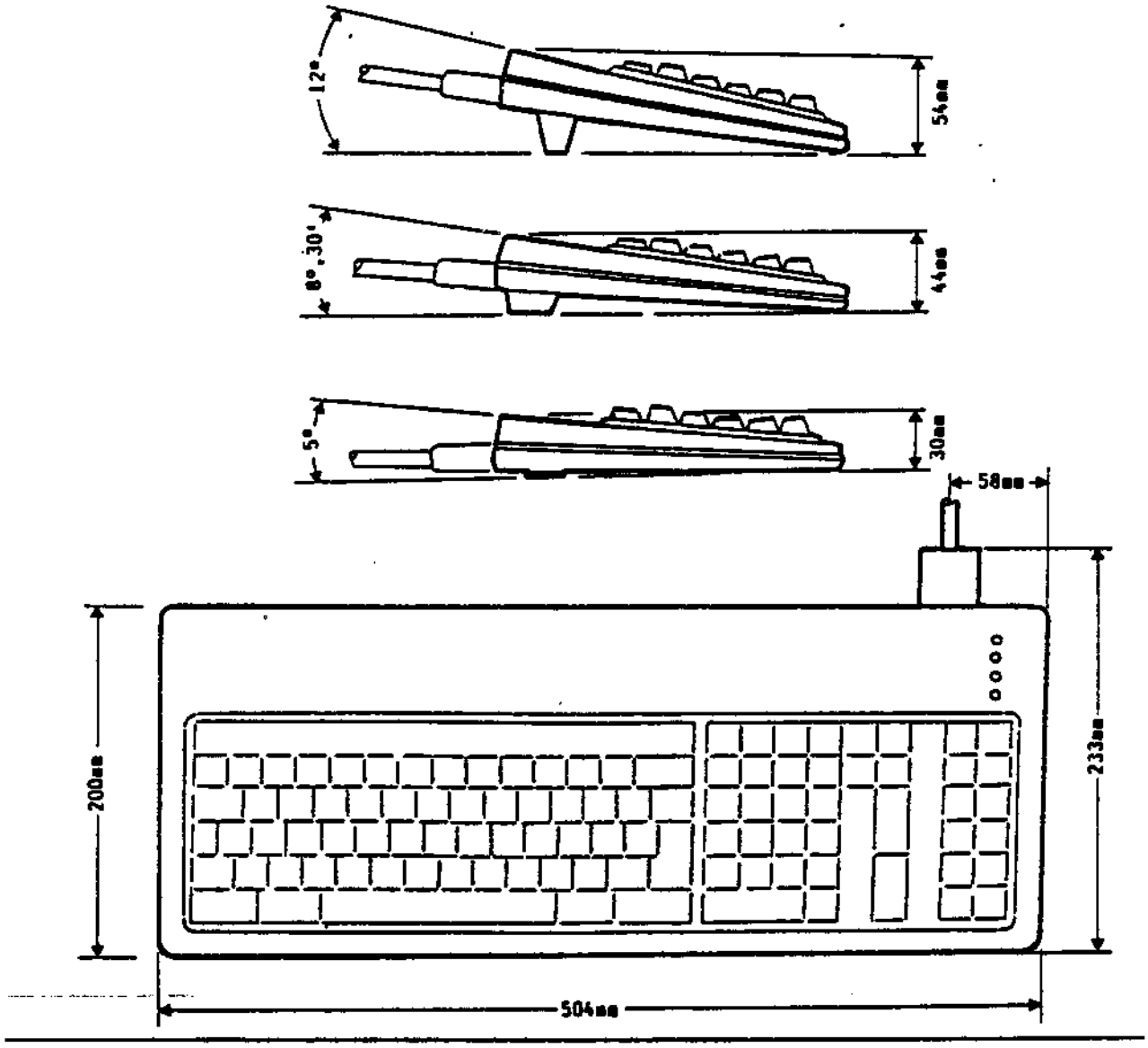


Fig. 5 -21 *N+ F ANK 14XX Keyboard Characteristics and Dimensions*

PIN PAD (PIN 1440) (MOS)

VOLTAGE (V)	FREQUENCY (Hz)	ABSORBED POWER AC (W)	DISSIPATED POWER (Kcal/h)	WEIGHT (kg)	OPERATING TEMPERATURE (°C)	RELATIVE HUMIDITY (%)	DUST LEVEL ($mg.m^3$)	VENTILATION (l/s)
5 12		3.2	2.7	0.25	10 – 40	10 – 95	0.25	

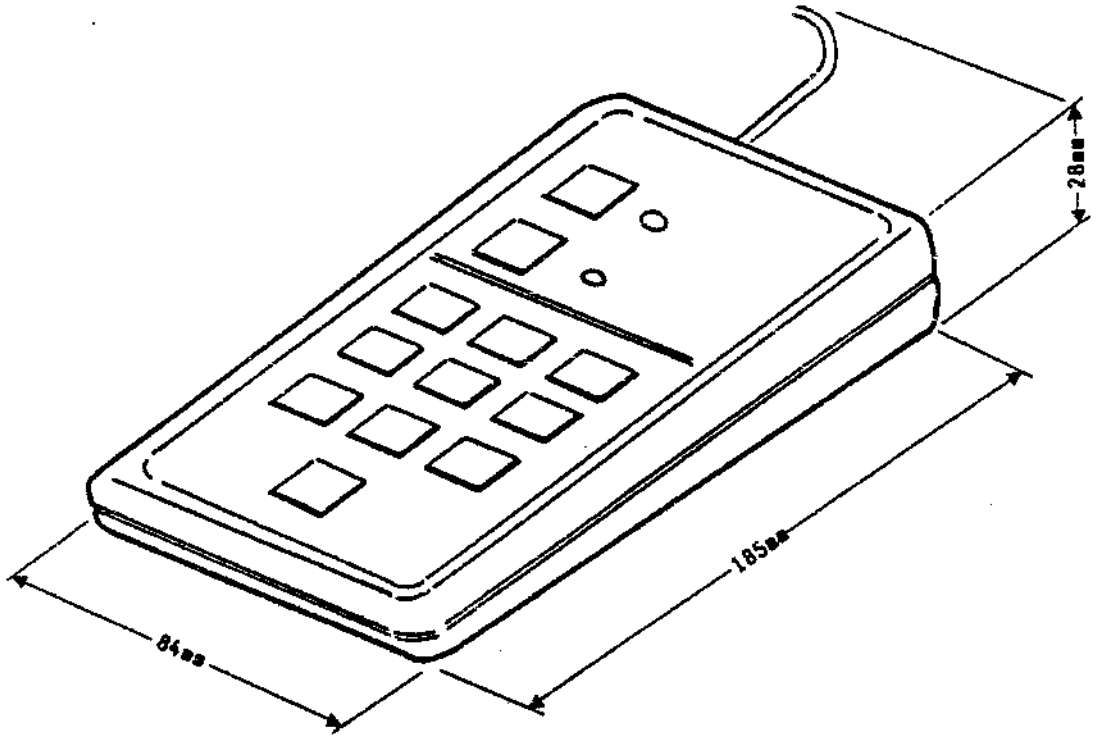


Fig. 5 -22 *PIN PAD Characteristics and Dimensions*

MBR 1932 (MOS)

Manual badge reader.

VOLTAGE (V)	FREQUENCY (Hz)	ABSORBED POWER AC (W)	DISSIPATED POWER (Kcal/h)	WEIGHT (kg)	OPERATING TEMPERATURE (°C)	RELATIVE HUMIDITY (%)	DUST LEVEL ($mg.m^3$)	VENTILATION (l/s)
5		0.71	0.6	0.5	10 ÷ 40	10 ÷ 90	0.25	

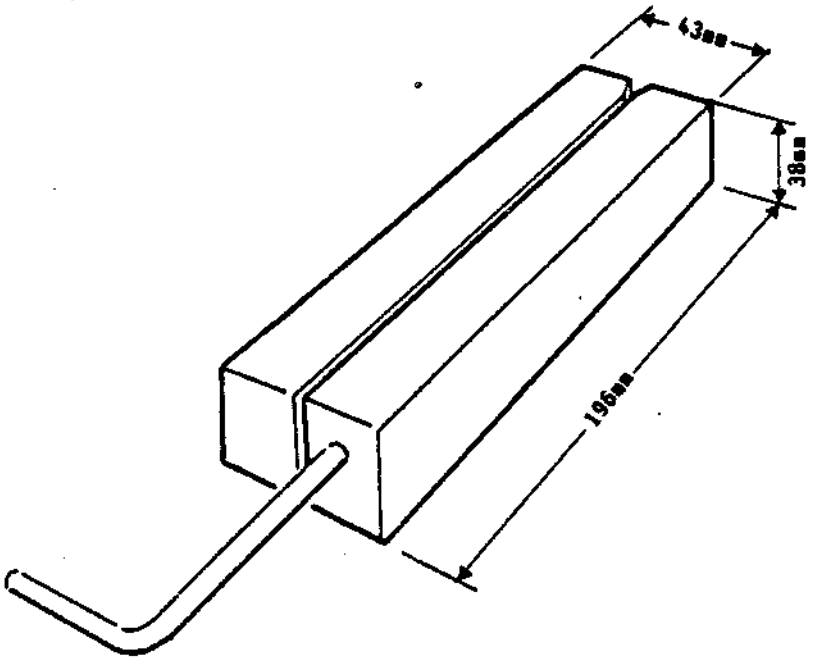


Fig. 5 -23 *MBR 1932 Characteristics and Dimensions*

RE 800

Readermarker.

VOLTAGE (V)	FREQUENCY (Hz)	ABSORBED POWER AC (W)	DISSIPATED POWER (Kcal/h)	WEIGHT (kg)	OPERATING TEMPERATURE (°C)	RELATIVE HUMIDITY (%)	DUST LEVEL ($mg.m^3$)	VENTILATION (l/s)
110 V 220V	50 - 60			7	10 - 40	15 - 80		

DIMENSIONS: 35x24x15.5 cm.

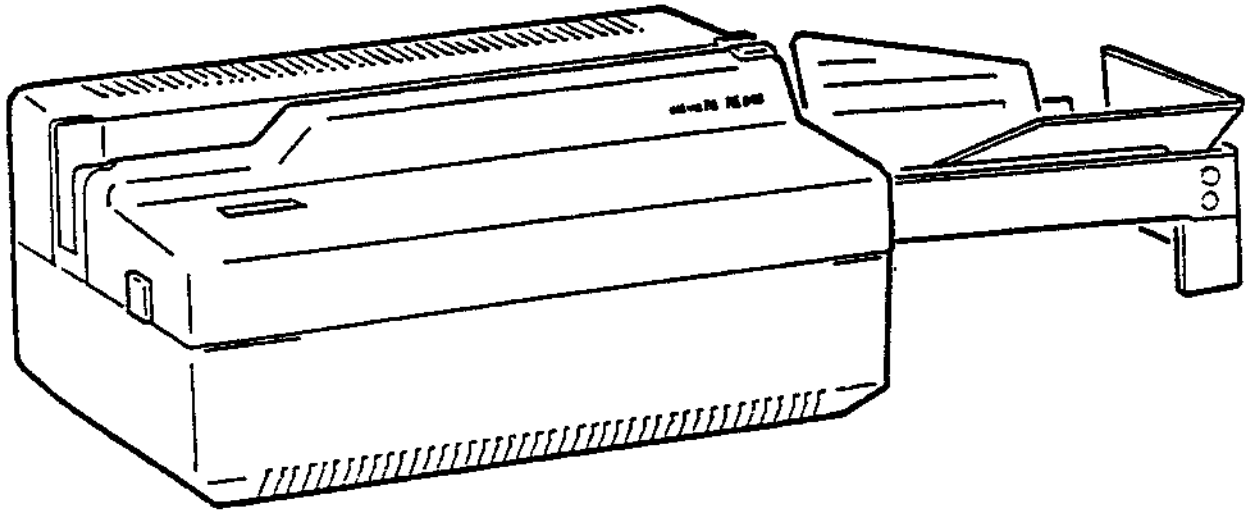


Fig. 5 -24 *RE 800 Characteristics and Dimensions*

RO 800

Motorized reader.

VOLTAGE (V)	FREQUENCY (Hz)	ABSORBED POWER AC (W)	DISSIPATED POWER (Kcal/h)	WEIGHT (kg)	OPERATING TEMPERATURE (°C)	RELATIVE HUMIDITY (%)	DUST LEVEL ($mg.m^3$)	VENTILATION (l/s)
110 V 220V	50 -60	75		5.5	10 - 40	15 - 80		

DIMENSIONS: 35x17x10.5 cm.

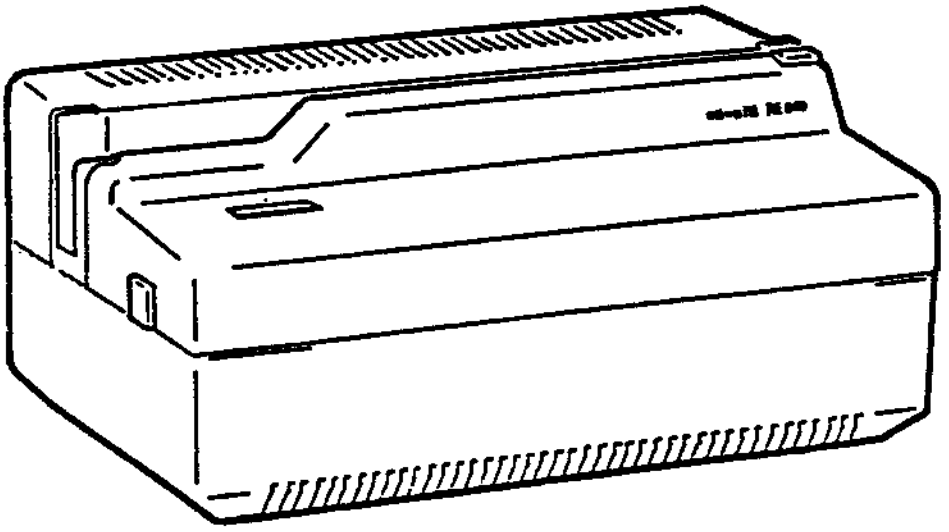


Fig. 5 -25 *RO 800 Characteristics and Dimensions*

RO 200

Motorized reader.

VOLTAGE (V)	FREQUENCY (Hz)	ABSORBED POWER AC (W)	DISSIPATED POWER (Kcal/h)	WEIGHT (kg)	OPERATING TEMPERATURE (°C)	RELATIVE HUMIDITY (%)	DUST LEVEL ($mg.m^3$)	VENTILATION (l/s)
110 V 220V	50-60			4.4	10-40	15-80		

DIMENSIONS: 18.7x30.5x14 cm.

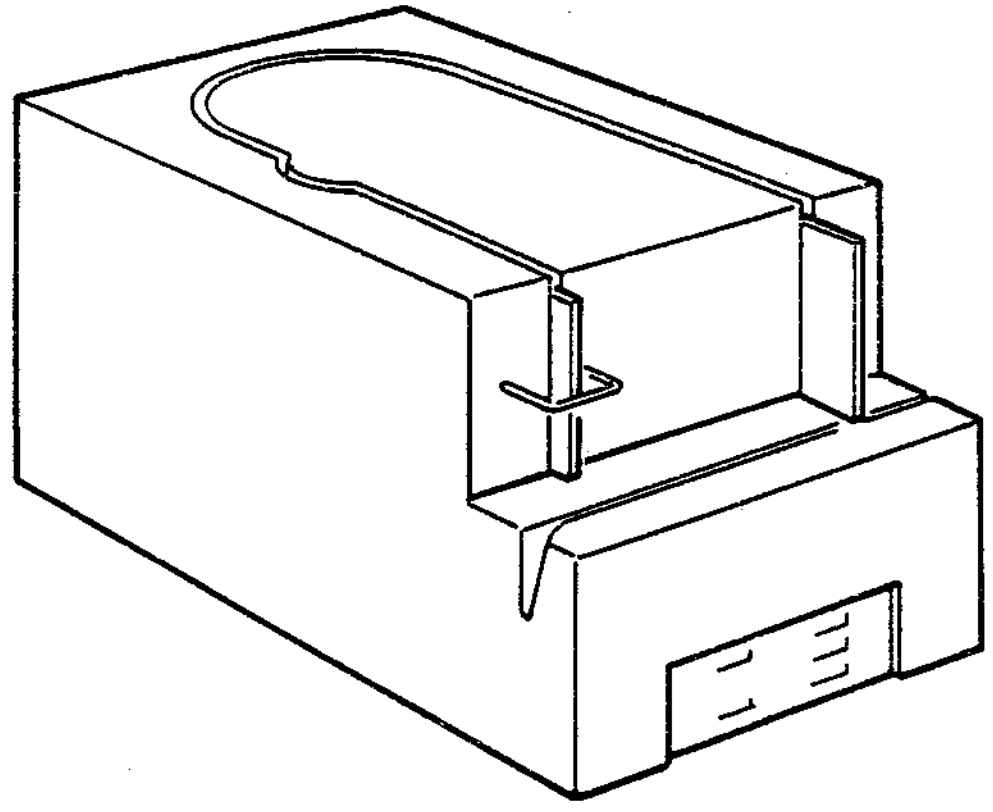
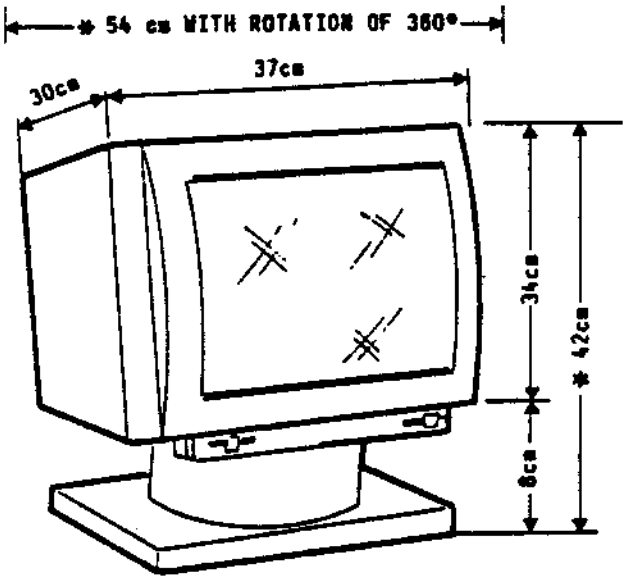


Fig. 5 -26 *RO 200 Characteristics and Dimensions*

VOLTAGE (V)	FREQUENCY (Hz)	ABSORBED POWER AC (W)	DISSIPATED POWER (Kcal/h)	WEIGHT (kg)	OPERATING TEMPERATURE (°C)	RELATIVE HUMIDITY (%)	DUST LEVEL ($mg.m^3$)	VENTILATION (l/s)
110 115 120 220 240	50 – 60	55	47.3		5 - 45	5 -95	0.25	



* Max dimensions with platform balancing.

Fig. 5 -27 *15" VIDEO Overall Dimensions*

Network signal cable output: rear side.
VENTILATION area: if the module is to be installed in a "niche", a space of at least 10 cm must be left.

Workstations.

VOLTAGE (V)	FREQUENCY (Hz)	ABSORBED POWER AC (W)	DISSIPATED POWER (Kcal/h)	WEIGHT (kg)	OPERATING TEMPERATURE (°C)	RELATIVE HUMIDITY (%)	DUST LEVEL ($mg.m^3$)	VENTILATION (l/s)
110 115 120 220 240	50 – 60	55	47.3		5 - 45	5 - 95	0.25	

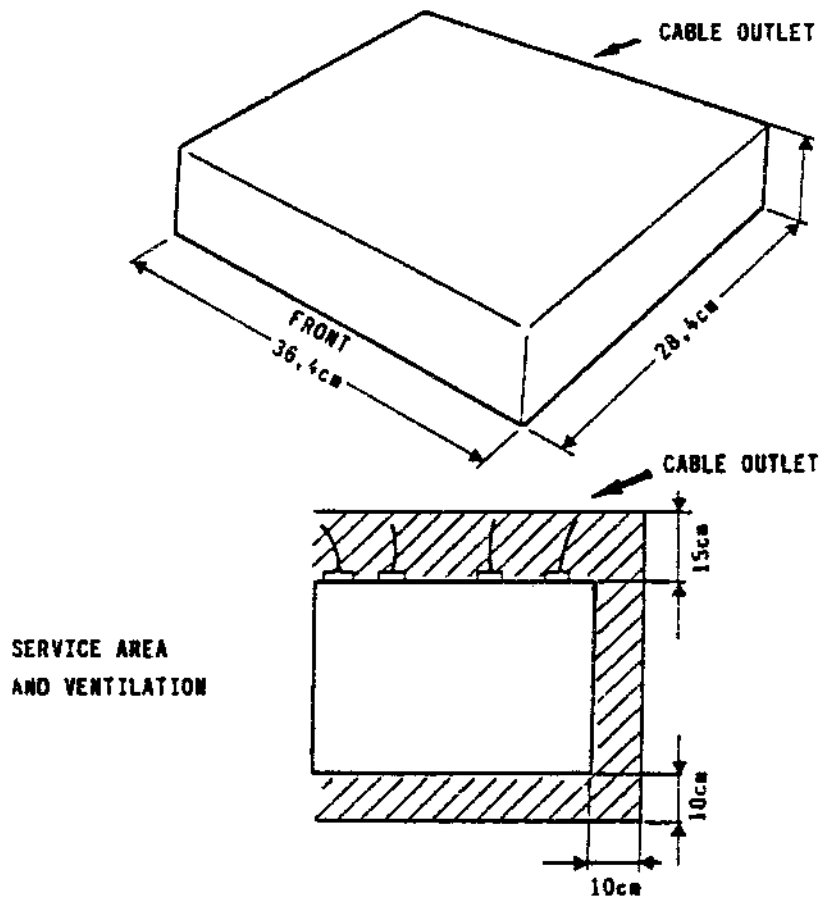


Fig. 5 -28 *ELB 3684 Characteristics - Dimensions - Service Area*

Interface TRANCEIVER between coaxial cable and ETHERNET controller.

VOLTAGE (V)	FREQUENCY (Hz)	ABSORBED POWER AC (W)	DISSIPATED POWER (Kcal/h)	WEIGHT (kg)	OPERATING TEMPERATURE (°C)	RELATIVE HUMIDITY (%)	DUST LEVEL ($mg.m^3$)	VENTILATION (l/s)
110 115 220 240	50 – 60	8.57	7.37	0.48	5 - 50	10 - 95	0.25	

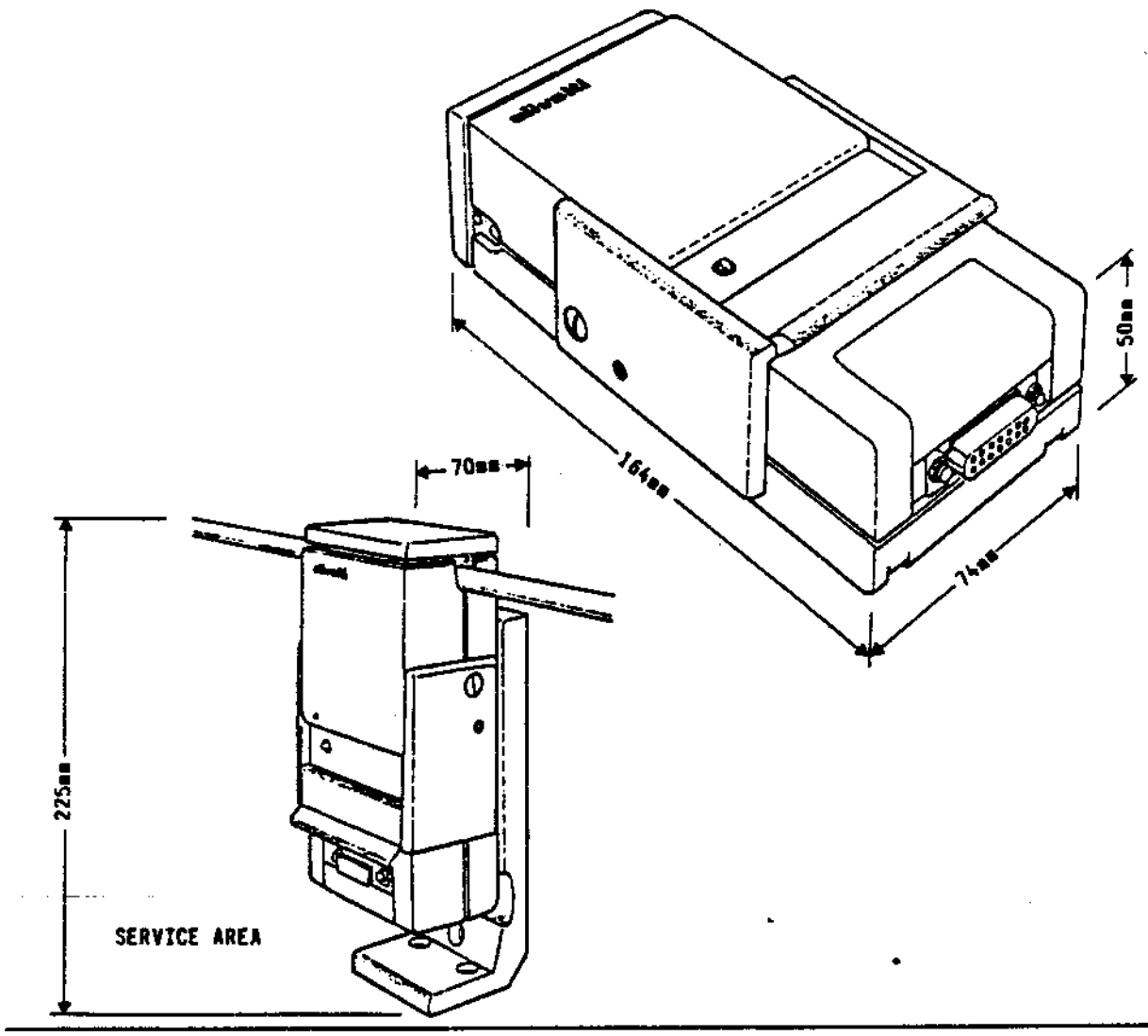


Fig. 5 -29 *TRX2000 Characteristics and Dimensions*

VOLTAGE (V)	FREQUENCY (Hz)	ABSORBED POWER AC (W)	DISSIPATED POWER (Kcal/h)	WEIGHT (kg)	OPERATING TEMPERATURE (°C)	RELATIVE HUMIDITY (%)	DUST LEVEL ($mg.m^3$)	VENTILATION (l/s)
110 115 220 240	50 – 60	140	120	14.5	10 - 40	15 - 85		

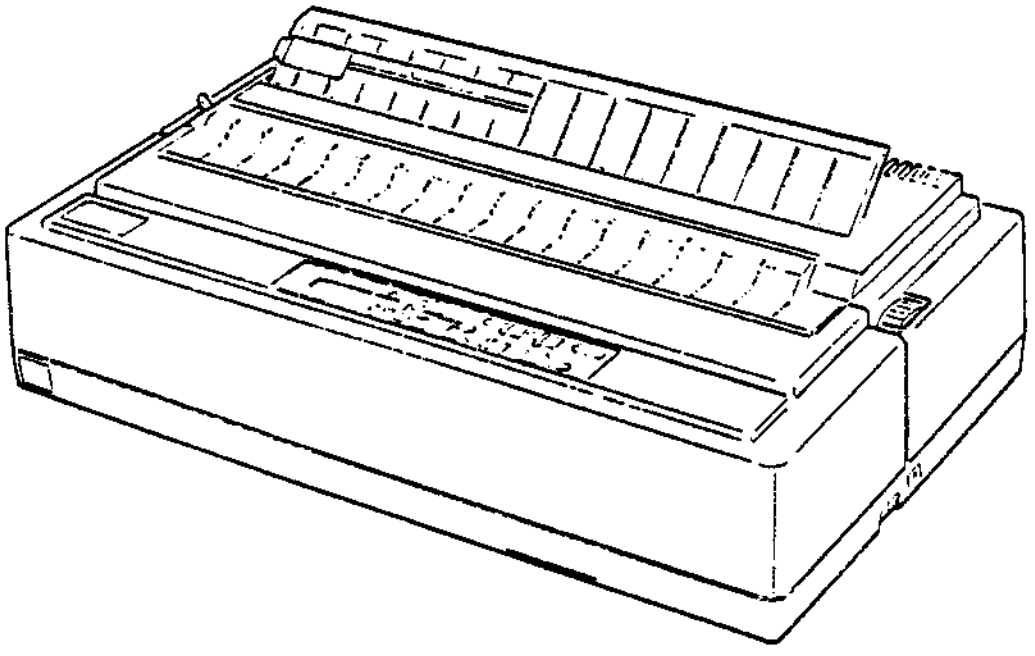


Fig. 5 -*30 DM600 Characteristics*

VOLTAGE (V)	FREQUENCY (Hz)	ABSORBED POWER AC (W)	DISSIPATED POWER (Kcal/h)	WEIGHT (kg)	OPERATING TEMPERATURE (°C)	RELATIVE HUMIDITY (%)	DUST LEVEL ($mg.m^3$)	VENTILATION (l/s)
110 115 220 240	50 – 60	70	60.5	7	15 - 35	15 - 85		

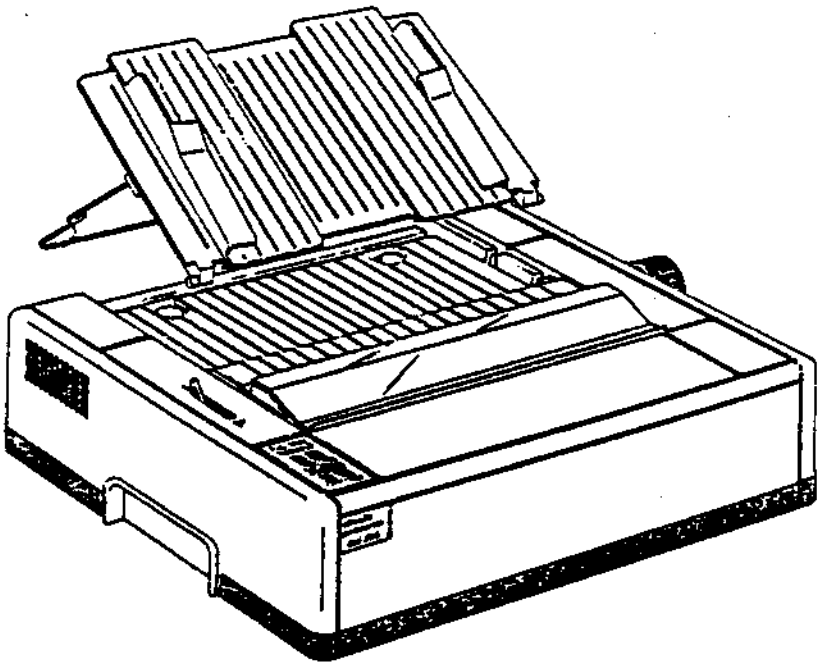


Fig. 5 -31 *DM 286/2 Characteristics*

VOLTAGE (V)	FREQUENCY (Hz)	ABSORBED POWER AC (W)	DISSIPATED POWER (Kcal/h)	WEIGHT (kg)	OPERATING TEMPERATURE (°C)	RELATIVE HUMIDITY (%)	DUST LEVEL ($mg.m^3$)	VENTILATION (l/s)
110 115 220 240	50 – 60	70	60.5	9	15 - 35	15 - 85		

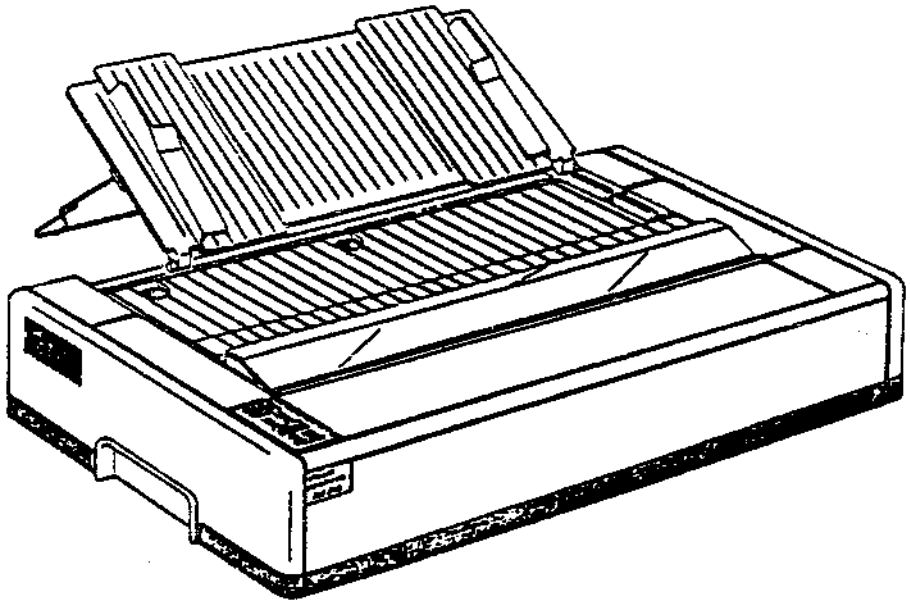


Fig. 5 -32 *DM 296 Characteristics*

VOLTAGE (V)	FREQUENCY (Hz)	ABSORBED POWER AC (W)	DISSIPATED POWER (Kcal/h)	WEIGHT (kg)	OPERATING TEMPERATURE (°C)	RELATIVE HUMIDITY (%)	DUST LEVEL ($mg.m^3$)	VENTILATION (l/s)
110 115 220 240	50 – 60	58		13.5	15 - 40	15 - 85	0.25	

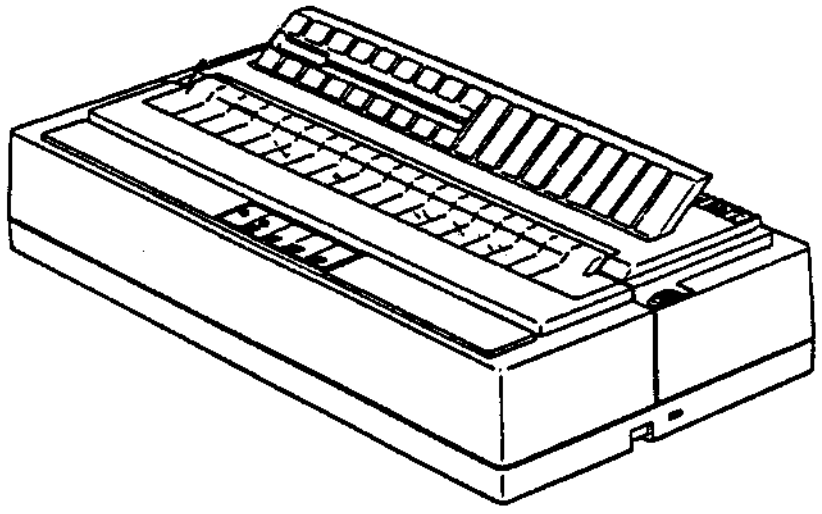


Fig. 5 -33 *DY450 Characteristics*

VOLTAGE (V)	FREQUENCY (Hz)	ABSORBED POWER AC (W)	DISSIPATED POWER (Kcal/h)	WEIGHT (kg)	OPERATING TEMPERATURE (°C)	RELATIVE HUMIDITY (%)	DUST LEVEL ($mg.m^3$)	VENTILATION (l/s)
110 115 220 240	50 – 60	70	60.5	6.5	15 - 35	15 -85		

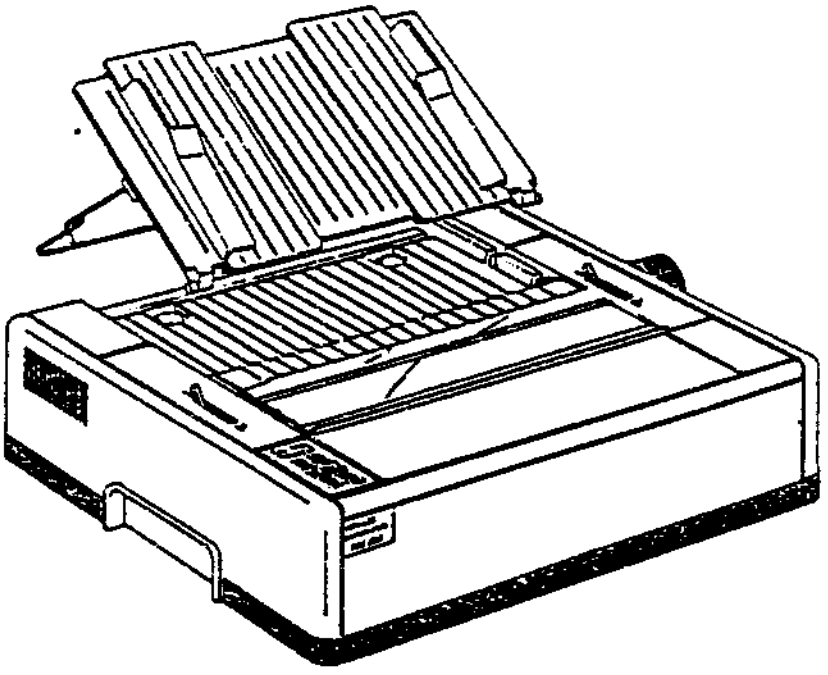


Fig. 5 -34 *DM280 Characteristics*

VOLTAGE (V)	FREQUENCY (Hz)	ABSORBED POWER AC (W)	DISSIPATED POWER (Kcal/h)	WEIGHT (kg)	OPERATING TEMPERATURE (°C)	RELATIVE HUMIDITY (%)	DUST LEVEL ($mg.m^3$)	VENTILATION (l/s)
110 115 220 240	50 – 60	70	60.5	13.5	10 - 40	15 -95	0.25	

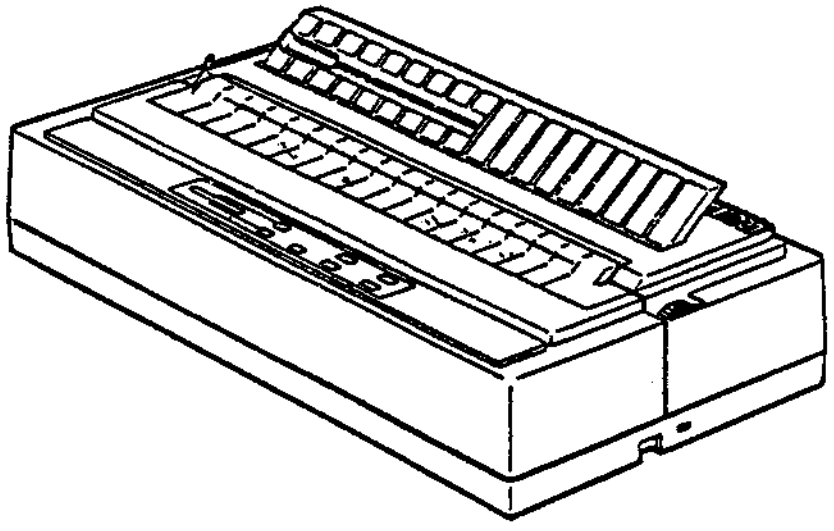


Fig. 5 -*35 DY800/2 Characteristics*

VOLTAGE (V)	FREQUENCY (Hz)	ABSORBED POWER AC (W)	DISSIPATED POWER (Kcal/h)	WEIGHT (kg)	OPERATING TEMPERATURE (°C)	RELATIVE HUMIDITY (%)	DUST LEVEL ($mg.m^3$)	VENTILATION (l/s)
110 115 220 240	50 – 60			16.5	15 - 40	15 - 95	0.25	

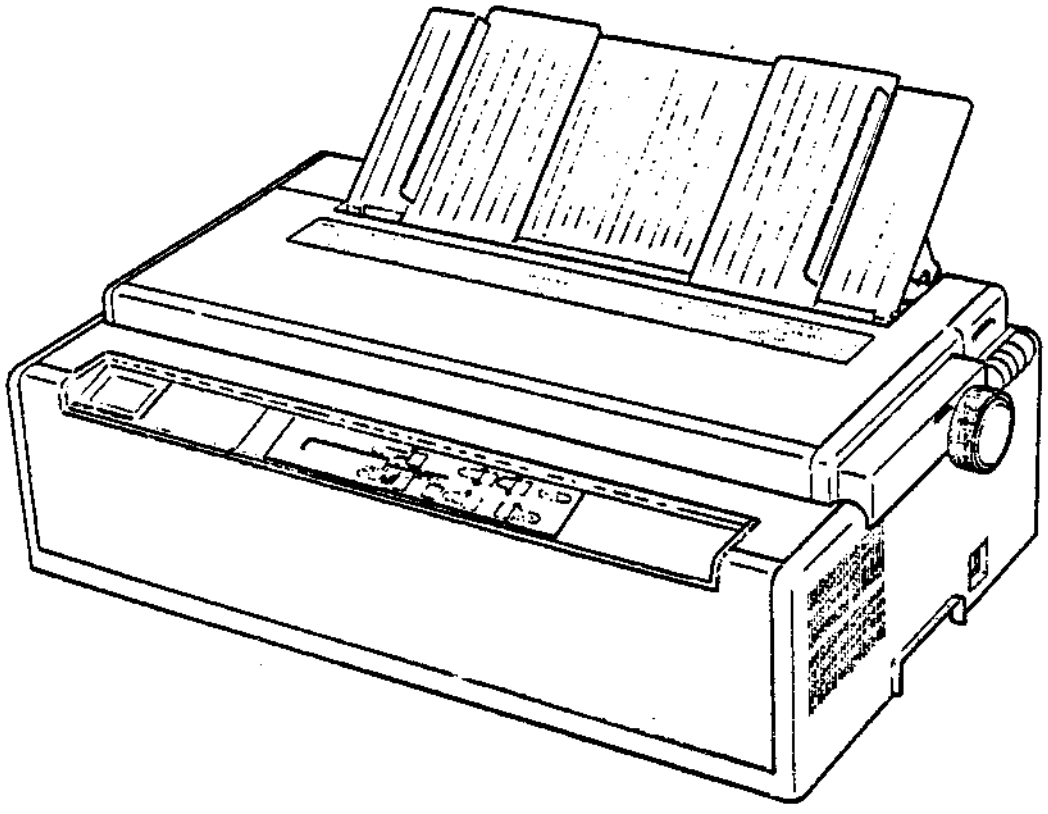


Fig. 5 -36 *DM 400 Characteristics*

Medium-speed parallel printer with character band and 317 lines/minute.

VOLTAGE (V)	FREQUENCY (Hz)	ABSORBED POWER AC (W)	DISSIPATED POWER (Kcal/h)	WEIGHT (kg)	OPERATING TEMPERATURE (°C)	RELATIVE HUMIDITY (%)	DUST LEVEL ($mg.m^3$)	VENTILATION (l/s)
110 115 220 240	50 – 60	250 in star 350	301	70	10 - 30	20 - 80	0.25	

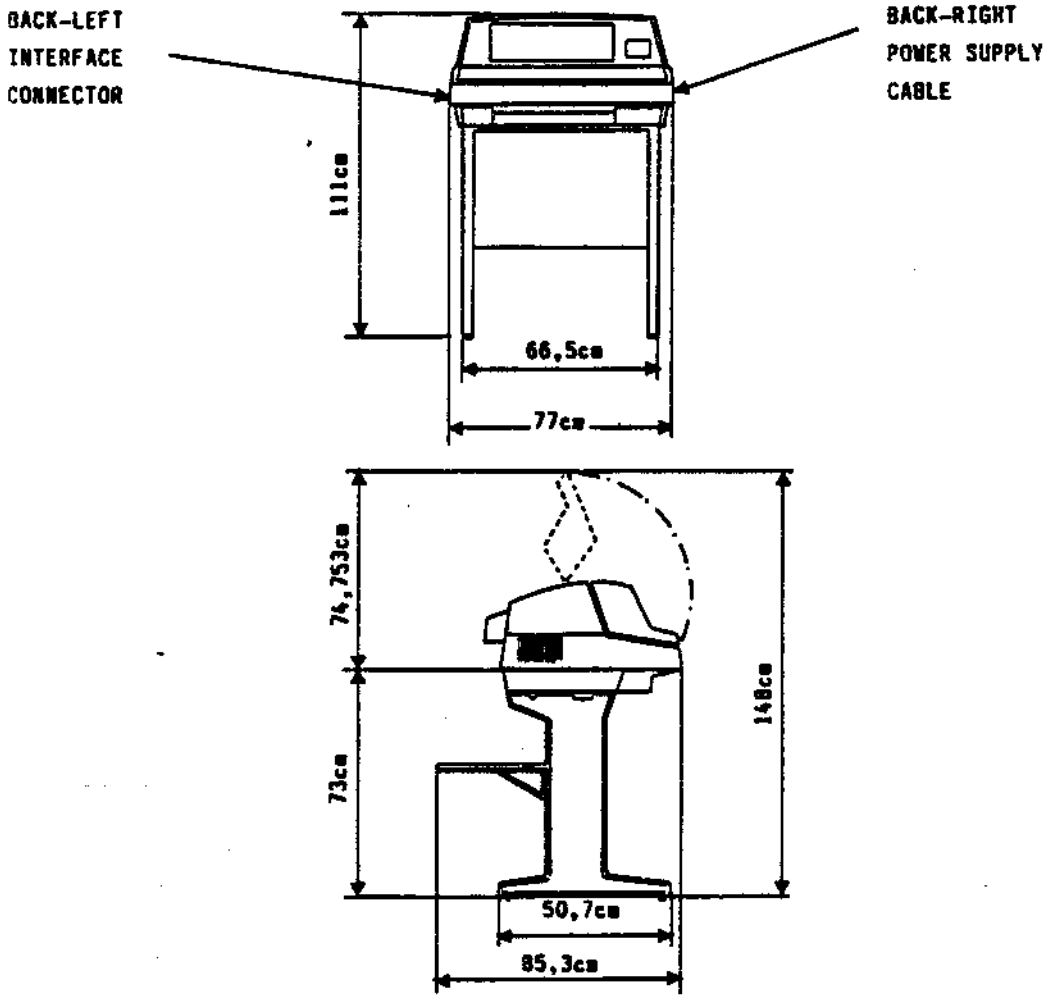


Fig. 5 -37 *PR 3300/3600 Characteristics - Dimensions*

VOLTAGE (V)	FREQUENCY (Hz)	ABSORBED POWER AC (W)	DISSIPATED POWER (Kcal/h)	WEIGHT (kg)	OPERATING TEMPERATURE (°C)	RELATIVE HUMIDITY (%)	DUST LEVEL ($mg.m^3$)	VENTILATION (l/s)
110 115 220 240	45 - 65	1200		60	10 - 40	20 - 80	0.25	

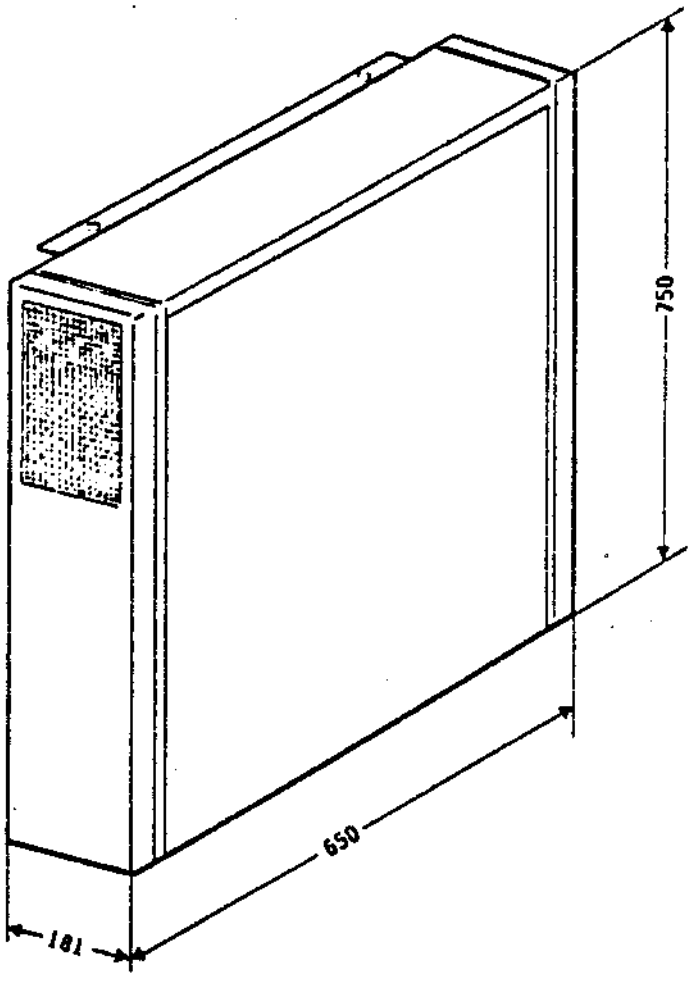


Fig. 5 -38 *UPS 1.2 kW Characteristics and Dimensions*

5.6 CABLE TYPES AND DIMENSIONS

MODULES	CODE No.	PART No.	LENGTH (m)	EXTERNAL DIAMETER	CABLE TYPE	NOTES
SERIAL INTERFACE CABLE FOR MUX	47025 P	CBL 3378 CAV 149	3	8 mm	ONE CHAN.	
SERIAL INTERFACE FOR MUX	47025 P	CBL 3378 CAV 147	3	7,4 mm	ONE CHAN.	
SERIAL INTERFACE CABLE FOR OLICOM PRINTER (INCR.)	53149 A	CBL 8083 CAV 197	5		ONE CHAN.	X/OS
SERIAL INTERFACE CABLE FOR OLICOM MODEM (STRAIGHT)	53149 A	CBL 8083 CAV 198	5		ONE CHAN.	X/OS
SERIAL INTERFACE CABLE FOR OLICOM WS 685	53150 L	CBL 8084	5		ONE CHAN.	X/OS
C.L. CABLE FOR P.C. CONNECTION	51092 P	CBL 7092	10		ONE CHAN.	
C.L. CABLE FOR WS 685 CONNECTION	53151 D	CBL 8088	10		ONE CHAN.	X/OS
ADAPTER CABLE	46524 C	CBL 2661	0,5		ONE CHAN.	
ADAPTER CABLE NON STD 13	46763 V	CBL 3349	0,1		ONE CHAN.	
MODEM EXTENSION CABLE	46762 T	CBL 3358 CAV 14	3 3		ONE CHAN.	
MODEM EXTENSION CABLE	46762 T	CBL 3358 CAV 144	8		ONE CHAN.	
STD 13 CABLE STRAIGHT	53152 F	CBL 8092			ONE CHAN.	
C.L. CABLE FOR ELB 3684	50409 J	CBL 7090	10			MOS

MODULES	CODE No	PART No.	LENGTH (m)	EXTERNAL DIAMETER	CABLE TYPE	NOTES
RS 232 CABLE WITH MALE CONNECTOR PERIPHERAL SIDE	50668 Y	CBL 3679	3		ONE CHAN.	MOS
RS 232 CABLE WITH FEMALE CONNECTOR PERIPHERAL SIDE	46697 Z	CBL 3679 CAV 062	3		ONE CHAN.	M OS
RS 232 CABLE WITH FEMALE CONNECTOR PERIPHERAL SIDE	46697 Z	CBL 2657 CAV 063	6,5		ONE CHAN.	MOS
RS 232 CABLE WITH FEMALE CONNECTOR PERIPHERAL SIDE	46697 Z	CBL 2657 CAV 085	3		ONE CHAN.	MOS
RS 232 CABLE WITH FEMALE CONNECTOR PERIPHERAL SIDE	46698 L	CBL 2658 CAV 065	3		TWO CHAN.	MOS
RS 232 CABLE WITH M. CONNECTOR PERIPHERAL SIDE	50666 B	CBL 3657 CAV 062	2		ONE CHAN.	MOS
RS 232 CABLE WITH MALE CONNECTOR PERIPHERAL SIDE	50666 B	CBL 3657 CAV 063	6,5		ONE CHAN.	MOS
RS 232 CABLE WITH MALE CONNECTOR PERIPHERAL SIDE	50666 B	CBL 3657 CAV 085	3		ONE CHAN.	MOS
RS 232 CABLE WITH MALE CONNECTOR PERIPHERAL SIDE	50667 D	CBL 3658 CAV 065	3		TWO CHAN.	MOS
MRW 1810 CABLE	46699 N	CBL 2660 CAV 067	1,5	0,2 mm	ONE CHAN.	MOS
MBR 1932 CABLE	46699 N	CBL 2659 CAV 068	1,5	6,9 mm	ONE CHAN.	MOS

MODULES	CODE No.	PART No.	LENGTH (m)	EXTERNAL DIAMETER	CABLE TYPE	NOTES
MBR 1932 PIN PAD CABLE	46501 R	CBL 2660	1.5	6.9	TWO CHAN.	MOS
DROP CABLE FOR ETHERNET LINE	47307 U	CBL 3392	10	9.5	ONE CHAN.	
DROP CABLE FOR ETHERNET LINE	47306 T	CBL 3391	5	9.5	ONE CHAN.	
DROP CABLE FOR ETHERNET LINE	47308 Q	CBL 3393	20	9.5	ONE CHAN.	
EXTENSION CABLE FOR DROP-CABLE	47317 W	CBL 3394	30	9.5	ONE CHAN.	
MODEM CABLE FOR LPU3348	336026P	–	3	8	TWO CHAN.	SUPPLIED WITH LCU 3348
CONNECTION CABLE from 8-way MUX to ELB 3684	56321 Y	CBL 8530			ONE CHAN.	MOS

5.7 PRINTER TYPES

The table below contains a list of the certified printers that can be connected to LSX 3000 line systems.

PRINTER		OPERATING ENVIRONMENT		
Model	Standard	MOS rel 1.0	X/OS rel.2.0 (LSX3005/10/20/30/40)	X/OS rel.1.0 (LSX 3070/80)
DM 280	OLIVETTI	•		
DM 280 UNIX	IS–OLIVETTI			
DM 290	OLIVETTI	•		
DM 282	OLIVETTI	•		
DM 282 UNIX	IS–INTERNAT.		•	•
DM 292	OLIVETTI	•		
DM 286	OLIVETTI	•		
DM 286 UNIX	INTERNAT.		•	•
DM 296	OLIVETTI	•		
DM 296 UNIX	INTERNAT.		•	•
DM 250	IS–INTERNAT.		•	•
DM 250 L			•	•
DM 600	OLIVETTI	•		
DM 600	IS			
DM 600 UNIX	INTERNAT.		•	•
DM 600/S	OLIVETTI	•		
DM 600/S UNIX	INTERNAT.		•	•
PG 208 M2	IS NO UNIX	•	•	•
PG 208 M2 UNIX	INTERNAT.		•	•
TH 760/S UNIX	IS–INTERNAT.		•	•
PR 4600		•	•	•
PR 1580		•		
DM 717			•	•
DM 400 1/17,1 SPACE OLIVETTI	•			

PRINTER		OPERATING ENVIRONMENT		
Model	Standard	MOS rel.1.0	X/OS rel.2.0 (LSX 3005/10/20/30/40)	X/OS rel.1.0 (LSX 3070/80)
DM400	IS	*		
DM400 UNIX	INTERNAT.		*	*
PR2845		*		
PR40+ APD100		*		
PR40 MULTI EMULATION		*		
PR24 1/16,6 SPACE		*		
PR24 UNIX	IS-INTERNAT.		*	*
PR24/LUNIX 1/16,6 SPACE	OLIVETTI	*		
PR24/LUNIX 1/17,1 SPACE	IS		*	*
DM400 1/16,6 SPACE	OLIVETTI	*		
DM410 EMUL. 1480 1/16,6 SPACE	OLIVETTI	*		
DM410 UNIX			*	*
DM450	OLIVETTI	*	*	*
DM450 UNIX	INTERNAT.		*	*
DY800 OLIVETTI		*	*	*
DY800	IS			
DY800 UNIX	INTERNAT.		*	*
PR25	OLIVETTI	*		
PR25/L	OLIVETTI	*		

IS = Industry Standard

* = on LSX 3035/45, X/OS rel. 2.1

5.7.1 CERTIFIED PRINTERS THAT CAN BE CONNECTED TO THE WS 685

- DM 282
- DM 286
- DM 296
- DM 250
- DM 250L
- DY 450
- TH 760
- TH 760 S
- PR 24
- PR 24 L

6. WORKSTATIONS

The LSX system workstations (WS) are based on the X/OS and MOS operating system.

The workstations are connected as follows:

6.1 WS BASED ON X/OS OPERATING SYSTEM (For LSX 3020/30/40 LSX 3035/45 LSX 3070/80)

For a distance of up to 5 metres, a direct connection is made between the OLICOM controller and the WS 685 terminal using CBL 8084.

For a distance of up to 13 metres, the connection is made with a Modem extension cable using CBL3358.

For distancees greater than 13 metres, the connection is made via Modem.

To connect WS in current-loop, CBL 8088 is used for a distance of up to 10 metres, via the RS-232 current-loop adaptor (ADT 8076).

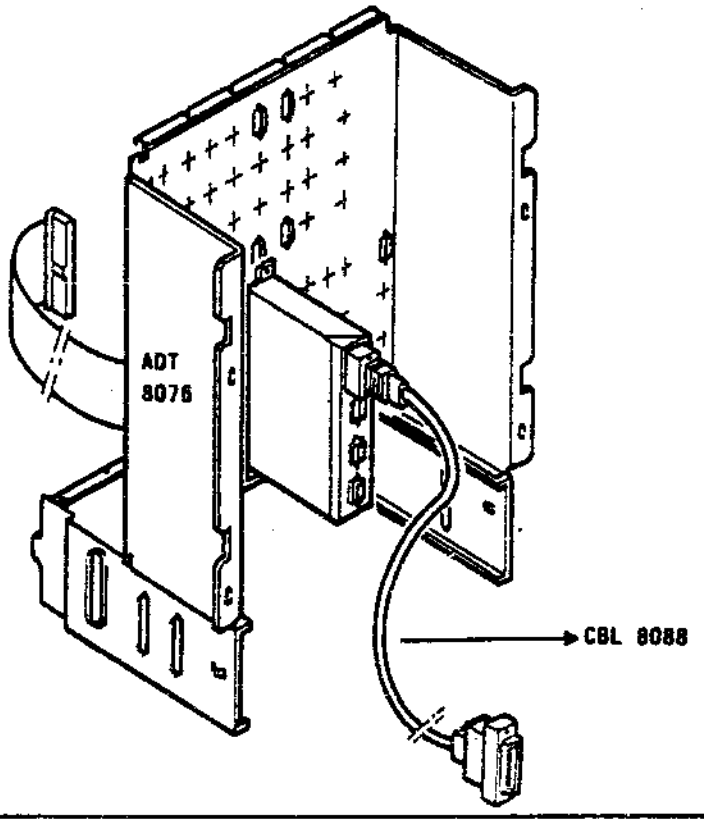


Fig. 6-1 View of the RS-232 Current Loop Holder Frame on SB0 Cabinet

6.2 WS BASED ON X/OS OPERATING SYSTEM (For LSX 3010)

Connection between the system and the WS 685 is made (for a distance of up to 3 metres) using the following modules and cables:

- GO 322 MUX board
- D-BOX
- CBL 3378 CAV 147
- WS685.

In order to reach a distance of 11 metres, the CBL 3358, CAV 143 Modem extension cable is used.

For distances greater than 11 metres, the connection is made via Modem.

6.3 WS BASED ON MOS OPERATING SYSTEM (For LSX 3005)

Connection between WS (ELB 3684 or WS 685/M) and the MUX controller is made using the following cables:

ELB 3684

- D-Box connected to MUX via cable (30 cm)
- CBL 7090 (10 metres) connects ELB 3684 to the D-Box

WS 685

- D-Box connected to MUX via cable (30 cm)
- CBL 3378 (3 metres).

6.4 WS BASED ON MOS OPERATING SYSTEM (For LSX 3020-30-40)

The ELB 3684 box handles the keyboard-screen signals.

It can handle two serial interfaces for the badge-reader and pin-pad.

Connection between ELB 3684 and the system is made in current-loop or RS-232. @BP =

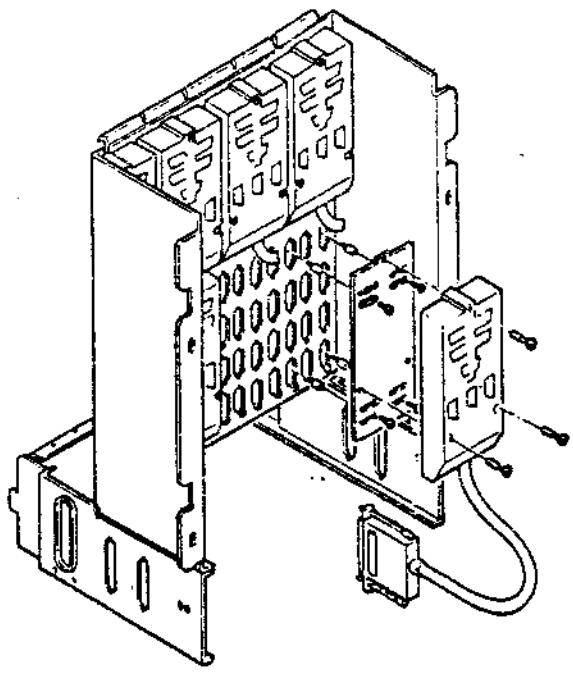


Fig. 6-2 View of the D-Box Holder Frame on SB0 cabinet

WS for LSX 3000 can be connected in remote using statistic ECC-Multiplexers and Modems (GANDALF PIN 9106/0).

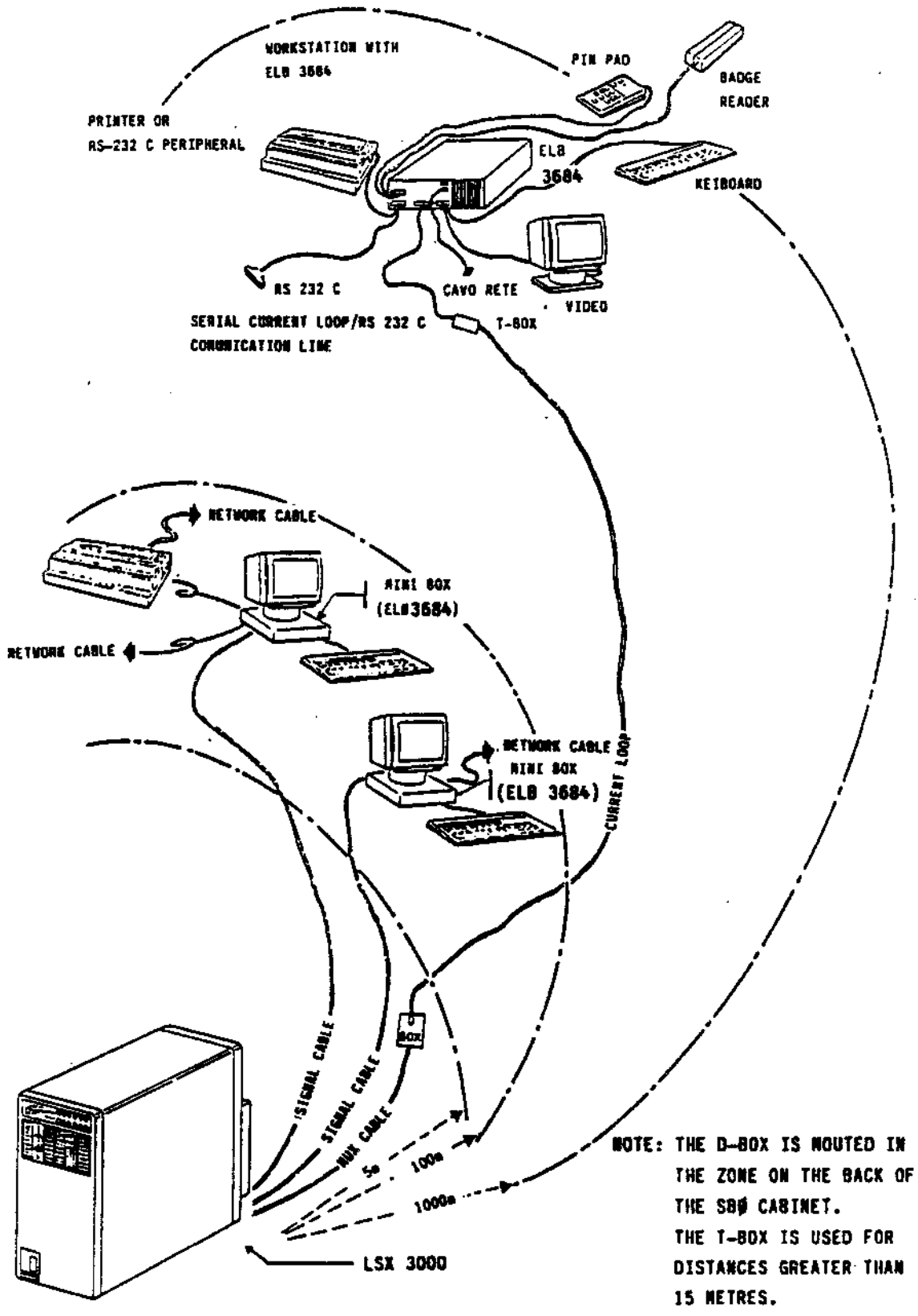


Fig. 6-3 Connection Distances for LSX3000 (MOS) System Workstations

6.5 ACCEPTED USER CONFIGURATIONS

SYSTEM	X/OS	MOS	USERS SIMULTANEOUSLY USING X/OS
LSX 3005/10	16	12	8
LSX 3020	32	16	24
LSX 3030	48	32	40
LSX 3040	64	48	56
LSX 3070	96	–	80
LSX 3060	192	–	140
LSX 3035	48	32	40
LSX 3045	64	48	56

6.6 ACCEPTED CONTROLLER CONFIGURATIONS

a) Number of Mux's possible.

SYSTEM	LSX 3005/10	LSX 3020	LSX 3030	LSX 3040
X/OS	4	–	–	–
MOS	3	4	8	12

b) Number of OLICOMs possible.

SYSTEM	LSX3005/10	LSX 3020	LSX 3030/35	LSX 3040/45	LSX 3070	LSX 3080
X/OS	0	2	3	4	6	12

Note: The calculation of absorbed current must be considered, based on the various maximum configurations allowed.

c) Number of ALC8s possibile.

SYSTEM	LSX3005/10	LSX3020	LSX3030	LSX3035	LSX3040	LSX3045
X/OS	2	4	6	6	8	8
MOS	2	2	4	4	6	6

6.7 WS 685 (X/OS) CONNECTION CABLES

The WS 685 can be connected to the OLICOM controller in the following two ways:

a) RS 232 using the CBL 8084 cable

b) Current loop by mounting the CTR 6850 adapter board on the WS, connecting the RS232/CL ADT 8076 convertor to the OLICOM board and using the CBL 8088 cable.

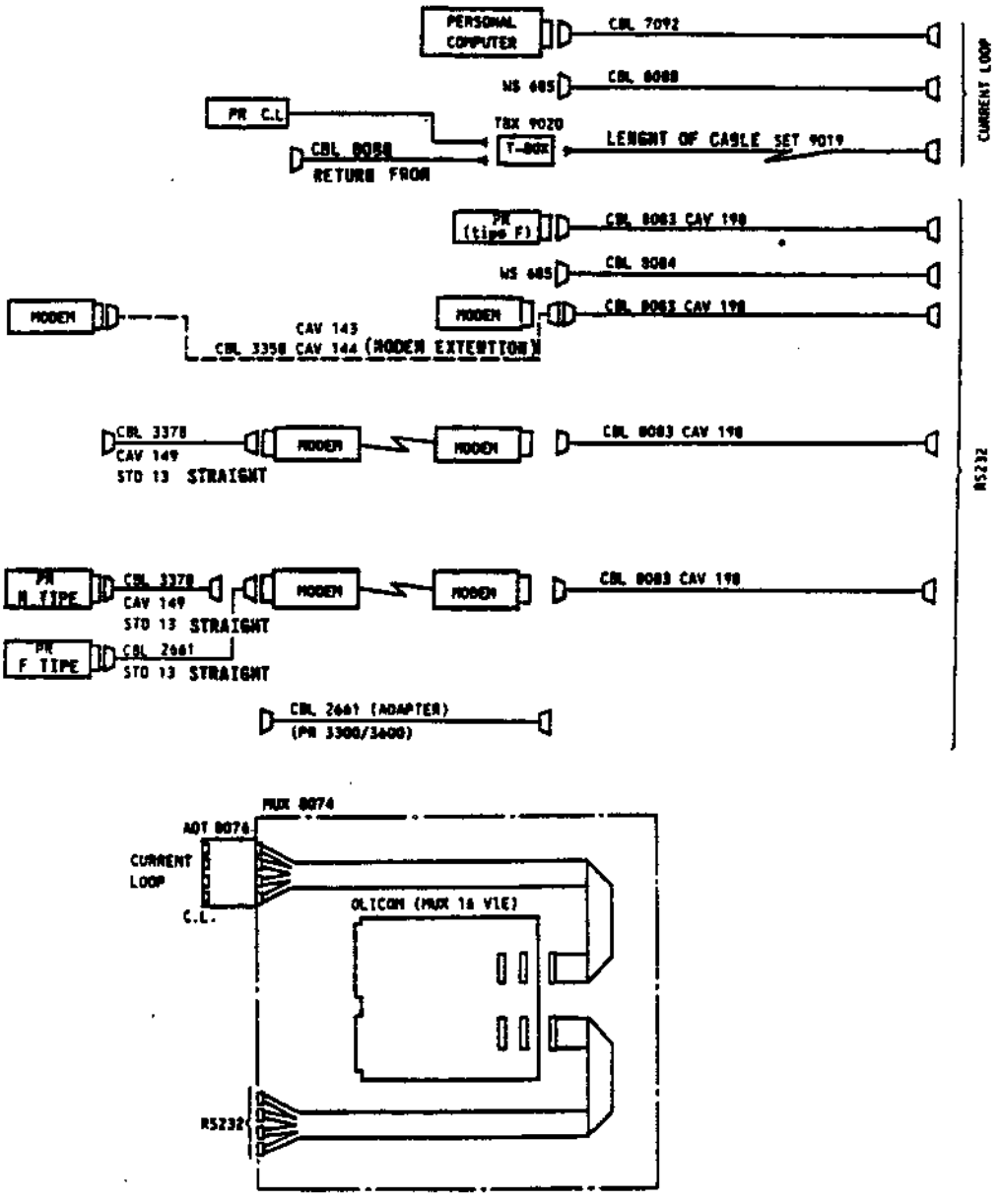


Fig. 6-5 General System Diagram for X/OS Workstation

6.8 D-BOX DISTRIBUTION BOX AND T-BOX INSTALLATION

The D–box is a passive device that connects the multiplexer controller mounted on the system to the various peripherals. In other words, it distributes the connections (RS 232 or current loop) to the peripherals.

It is mounted on a frame (on the back of the SB0 cabinet) and can support up to eight D-BOXES. On LSX 3005/3010 systems this box is installed externally.

The D–box is equipped with a cable about 30 cm in length, with a connector on one end that is inserted into the MUX terminal board. On LSX 3005/3010 systems, this connection cable is 5 metres long.

T-BOX INSTALLATION

The T-BOX is placed at a maximum distance of 10 metres from the ELB 3684 and is fixed to the wall or floor using pressure screws with anchor. The holes for the screws are 4.5 mm in diameter and the distance of their centres is 49 mm.

The T-BOX can only be fixed after lifting the cover and removing the pressing, as illustrated in the figure below.

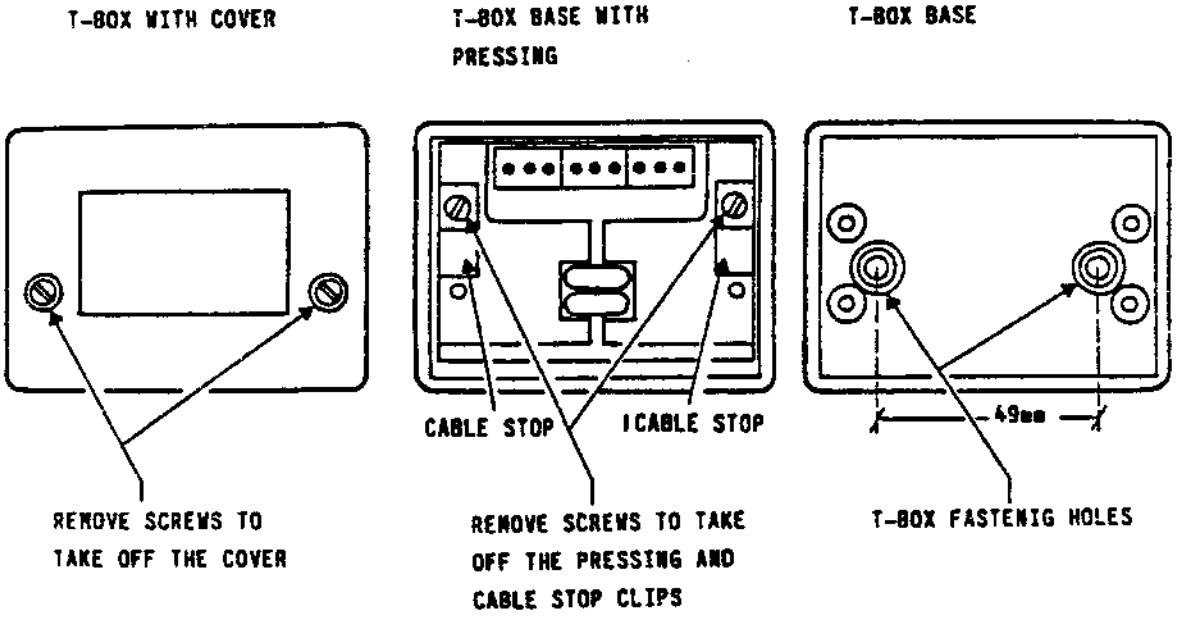


Fig. 6-6 Disassembly of the T-BOX

6.9 ELB 3684 (MOS) CONNECTION CABLES

The ELB 3684 can be connected in either RS232 or C.L. with the following cables:

a) RS232

- CBL2657 connects ELB to DBOX (maximum length 5 m)
- CBL3358 CAV 144 extension cable (8m)

b) Current loop

- CBL7090 (10 m) connects ELB to DBOX.
  For connections of over 10 m, the following must be used:
- T-BOX galvanic separator
- cable available by the metre in 500 m matasse (can be ordered from DRS: code 5731315 Q).
- SET9019 consisting of 50 nine-way male and female connectors (can be ordered from DPDP: code 50695 W).

If junctions with several crop ends? are used, the AMPHENOL connectors described below must be used.

WORKSTATION WITH ELB 3684

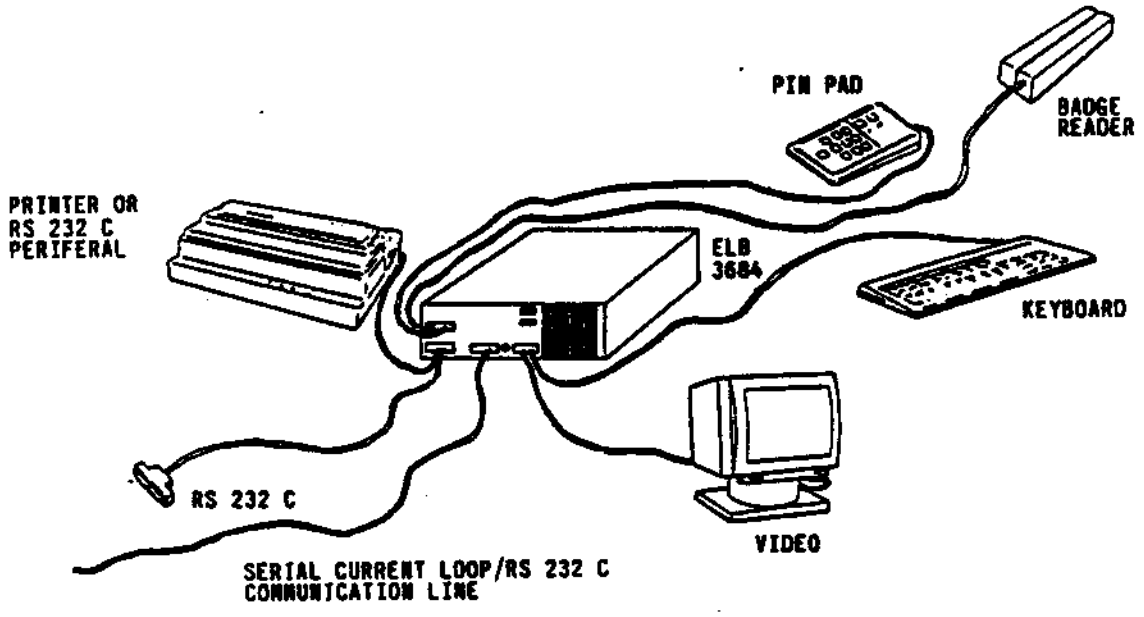


Fig. 6-7 Connection between ELB 3684 and Peripherals

6.10 INSTALLATION OF SIGNAL CABLES FOR WS

These must not be installed near to high capacity electrical equipment that could cause harmful interferences.

The most common generators of interferences are:

- All types of lighting installations
- Power and distribution generators such as: transformers, alternators and motors (conditioners, elevators and ventilators)
- Radio and TV transmitters
- Signal generators, intercommunication devices and alarms.

Cable interference can also depend on the length of lines that run parallel to the source of the interference.

The table below indicates the minimum distance between the cable and the source of the interference.

DISTRIBUTION NETWORK	MINIMUM DISTANCE BETWEEN CABLE AND THE SOURCE OF THE INTERFERENCE
LESS THAN 2 KVA	m 0.10
FROM 2 KVA TO 5 KVA	m 0.30
MORE THAN 5 KVA	m 0.50

In the case of a 90° crossover, a minimum distance of 0.10 metres is allowed. If the cable is installed vertically, it must be anchored to supports (at least one every metre).

IMPORTANT NOTES

1. To enable easy maintenance, the workstation must be installed within view of the system. In addition to the normal operations, this workstation performs system console functions and during the diagnostic phase, it will be sent data on the functioning of the entire system.
2. During WS 685 connections, the alternating power supply to the video is supplied directly by the network. In all other cases it is supplied by the ELB.

EXTERNAL SECTIONS BETWEEN BUILDINGS

Some installations may require some small external sections, in which case the following protections from atmospheric discharges must be provided:

1. Underground passage (channels) for cables (at least 30 cm).
2. Aerial passage for cables in metallic screen tube, connected to earth by the two parts. Metallic section of tube at least 50 mm^2 (tube diameter greater than or equal to 19 mm). Connection to earth with 35mm section cable (as for lightning conductor). Good ohmic continuity at low impedance must be guaranteed for any tube crop ends. The standards normally adopted for waterproof electric systems must be complied with. This also applies to underground cables.

6.10.1 WORKSTATION TOPOLOGY PERFORMED WITH ELB 3684 IN LOCAL AND REMOTE ENVIRONMENT (MOS)

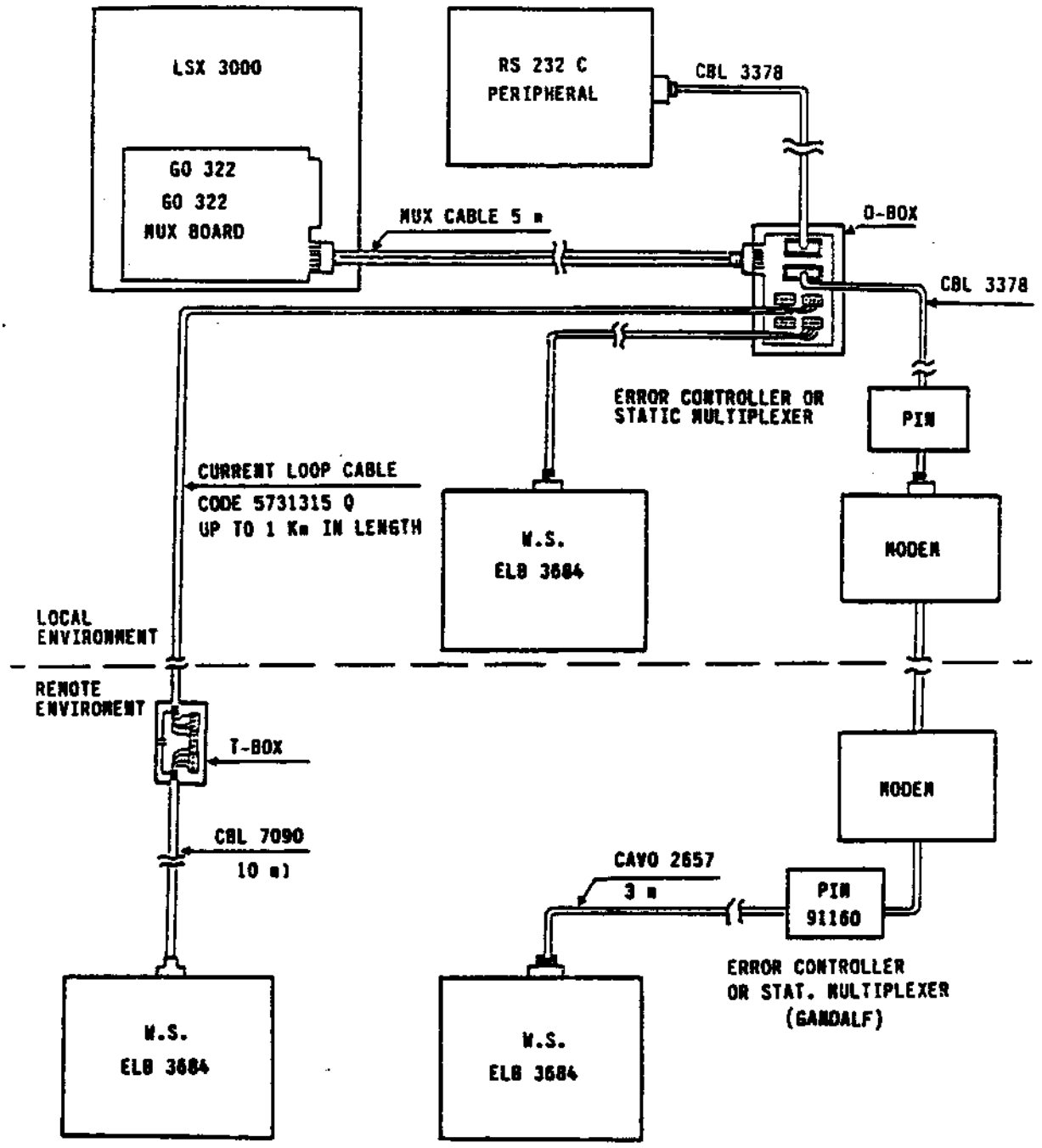


Fig. 6-9 Workstation System Diagram

6.10.2 CURRENT LOOP CABLE (ELB 3684)

DESCRIPTION

The current loop is a flexible screened quadrupole cable made up of four conductors in tin-plated electrolytic copper, that are isolated and inserted in a screened copper braid and a grey isolating sheath.

code	Ind.
5731315 Q	

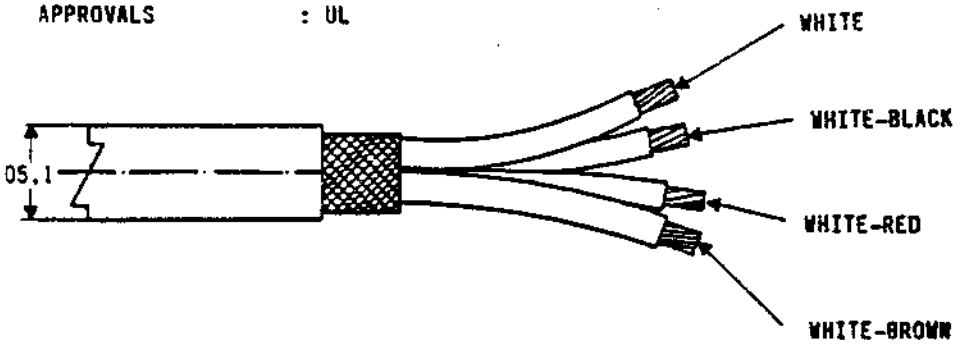
CHARACTERISTICS

ELECTROLYTIC COPPER : Cu - ETP UNI 5649

RESISTIVITY : 0,017094 mm^2/m

STYLE : 2448

APPROVALS : UL



SHOULD THE CURRENT CABLE REQUIRE COUPLING, THE FOLLOWING SOLUTION IS RECOMMANDED:

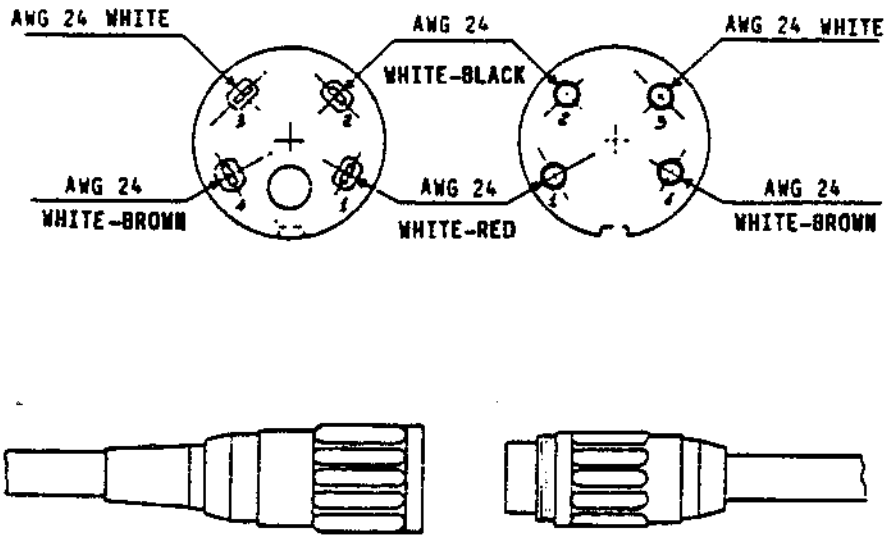


Fig. 6-10 Current Loop Cable

7. LSX 3000 CONNECTION LINES

The systems that make up the LSX 3000 product line were devised with distributed informatics logic and several system connections have been made possible, to obtain extended and powerful configurations.

The following types of connection exist:

1. External line with 2 x V24 controller
2. STARLAN local network
3. ETHERNET local network.

In order for the machines that are connected together to perform well, an accurate analysis must be made a priori, for a correct definition of the system. Particular attention should be paid to the sources of interference listed below:

- Electric lighting installations (especially neon lights)
- Energy distribution and generation systems (e.g. transformers and alternators)
- Air-conditioning motors, elevators and large ventilators
- Radio and TV transmitters
- Signal generators, intercommunication and safety systems
- Influence on the on-line noise level, depending on the length of the path running parallel to the source of the interferences.

The table below indicates the distances that should be kept between the line cable and the source of the interference, in terms of their parallel path.

LENGTH OF PARALLEL SECTION	MINIMUM DISTANCE BETWEEN LINE AND SOURCE OF INTERFERENCE
from 0 to 100 m	0.10 m
more than 100 m	0.30 ÷ 0.50 m

Note: In the case of 90° crossovers between line cable and alternating cable, the minimum distance must be 0.5 m.

In addition, good mechanical protection must be supplied for particularly exposed installation points, e.g. where a cable is extended across a passage subject to any type of traffic. In this case, appropriate channels should be used.

These are recommendations of a general nature and should be followed when laying down all types of trunk-cable. For special cases of particular lines, refer to the chapter concerned.

7.1 EXTERNAL LINES WITH V24 + V24 INTERFACE CONTROLLERS

This type of connection allows for communication between systems that are placed far apart, since they can be connected via a Modem and the telephone network.

The following modules are currently used on LSX 3000 systems:

- LPU 3348, 2 x V24
- LPU 9149

	LSX 3005/ 10	LSX 3020/ 30/40	LSX 3035/ 45	LSX 3070/ 80	NOTES
LPU 3348 2 x 24	•	•			MOS
LPU9149 V24 + X25 (V35 - V36)	•	•	•	•	

The transmitting device connects the controller directly to the Modem and it is supplied with the controller itself.

7.2 CONNECTION OF REMOTE INTERNAL LINES AND EXTERNAL LINES (MOS)

This connection is used when the slave system is more than 4 Km away from the master system. In this case telephone lines with an external Modem are used.

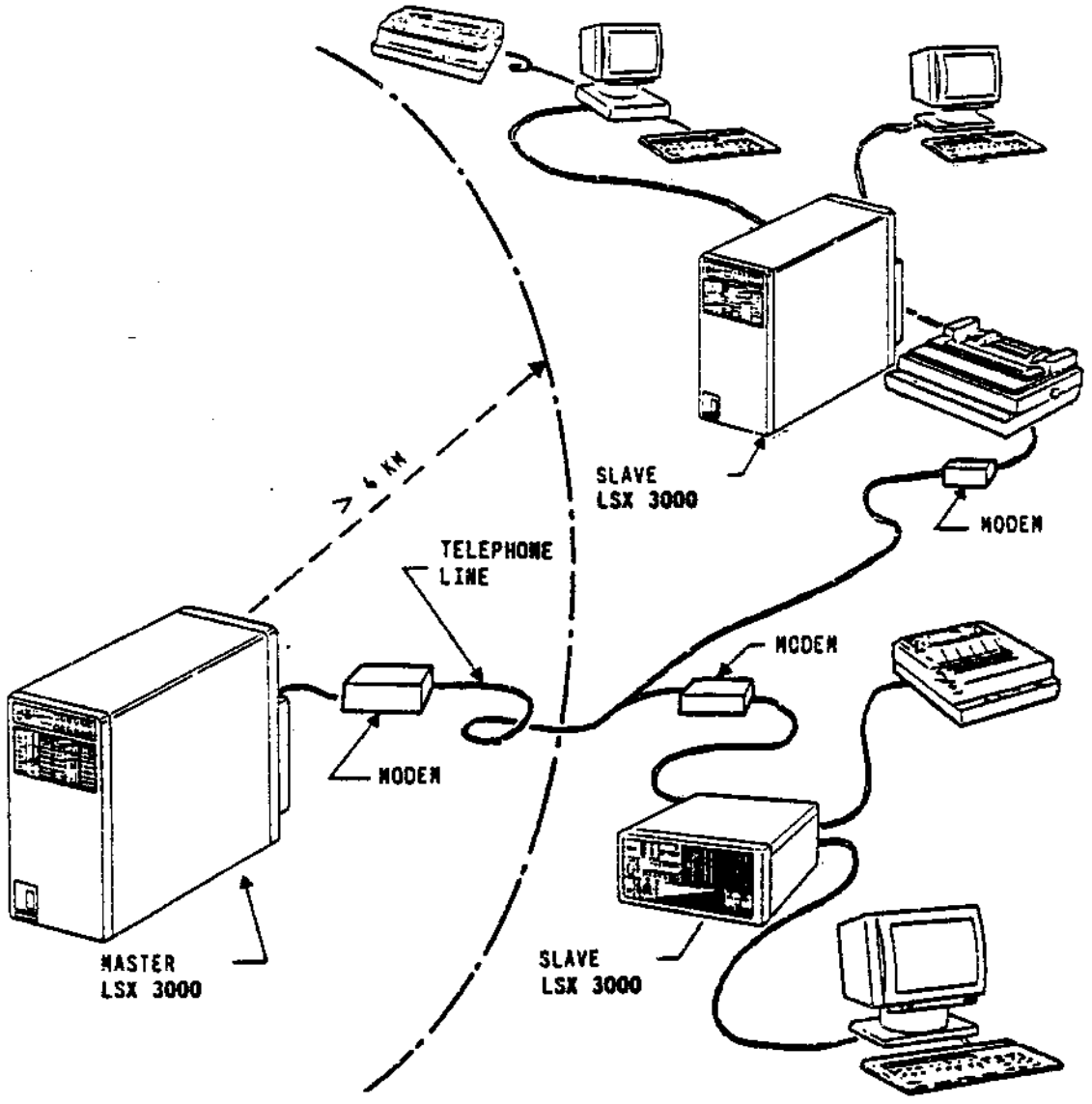


Fig. 7-1 Examples of LSX 3000 External Line Connections

7.3 ETHERNET LOCAL NETWORK

The ETHERNET local network is currently the means of communication with the fastest transmission speed (10 Mbit/s) adopted by LSX systems. The considerable topological flexibility of this network enables installations that satisfy even the most varied customer needs, while continuing to respect the implementation of the adopted standard (IEE 802.3).

For further information, refer to the following documents:

- PSP "LAN Organizational Technical Notes"
  code 3876490 K/02

- NOP "Installation Standards for OLIVETTI LANs"
  code 3876493 U/05B (to be issued shortly)

- NOP "Installation Standards for ETHERNET Local Networks"
  code 3874203 B/18

The following elements are required to develop an ETHERNET network:

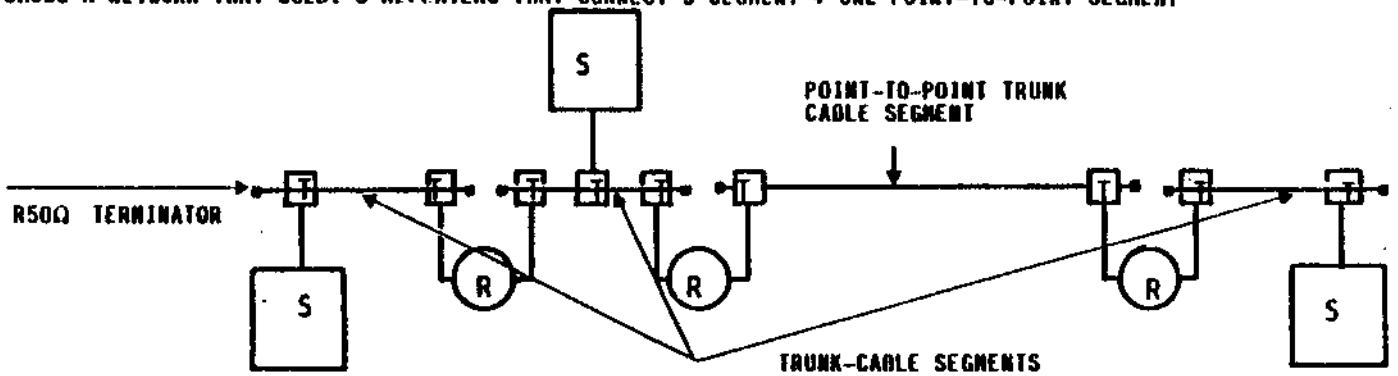
- GO 212/A BOARD (placed in LSX 3000 drawers)
- TRANSCEIVER
- REPEATER
- TERMINATORS
- UNIONS
- TRUNK-CABLE
- DROP-CABLE

7.3.1 NETWORK CONFIGURATIONS

The limitations set by the IEEE 802.3 standard must be respected.

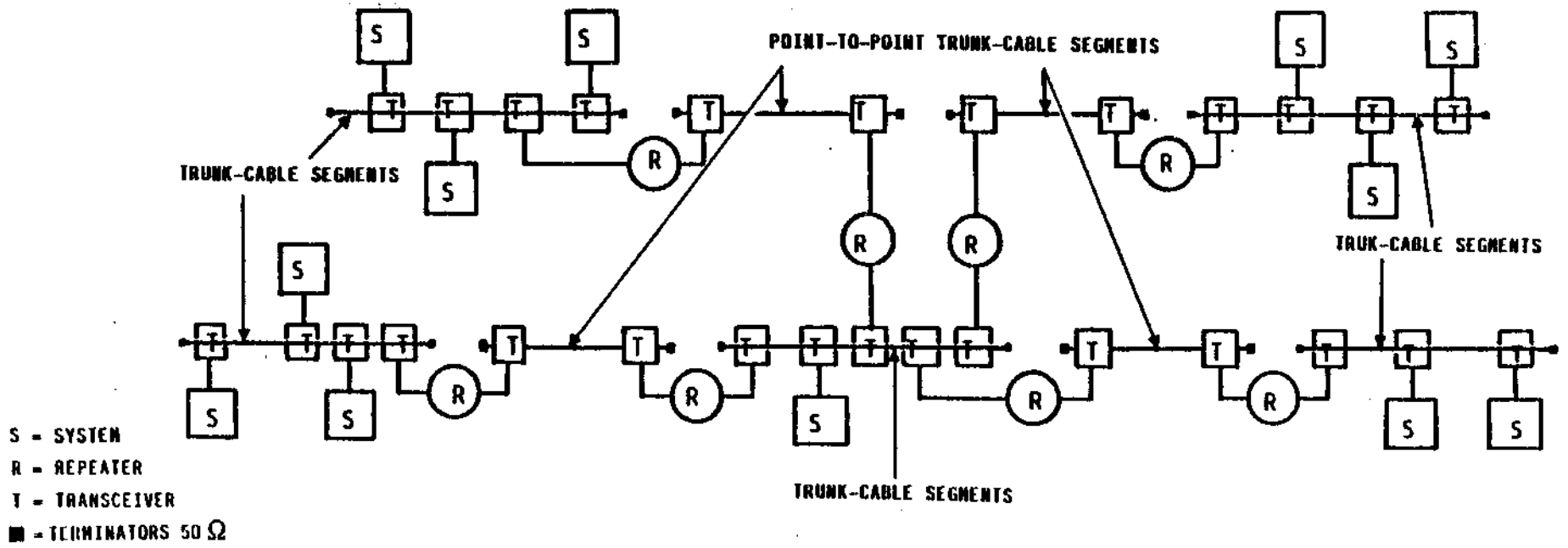
- Trunk-Cable - maximum length of a segment = 500 m.
- A maximum of 5 segments, 4 repeaters and a distance of 2600 m can exist between the two systems, on the condition that 2 of the 5 segments are point-to-point type, i.e. no transceiver is inserted.
- Each segment can support up to 100 transceivers.
- The entire network can support up to 1024 transceivers.
- The TRUNK-CABLE is equipped with special terminators (R=50 ohm incorporated).
- The DROP-CABLE is a transmitting device that connects the transceiver to the system at a maximum distance of 50 m.
- The TRANSCEIVER is connected to the trunk-cable, to obtain the node used to access the system that is to be connected to the network.
- The REPEATER regenerates the signals and enables several segments to be connected. It is inserted in sections higher than 500 m.

THE FOLLING DIAGRAM SHOWS A NETWORK THAT USED: 3 REPEATERS THAT CONNECT 3 SEGMENT + ONE POINT-TO-POINT SEGMENT



COMPLEX NETWORK TOPOLOGY

NOTE THE CONNECTIONS BETWEEN 3 TRUNK-CABLE SEGMENTS INTERRUPTED WITH 2 POIN-TO-POINT SEGMENTS



7.3.2 ETHERNET NETWORK CABLES (LCU 3323)

COAXIAL CABLE

The trunk-cable used for ETHERNET type networks must have precise characteristics.
Contrary to the cables used for traditional lines, this cable is coaxial and therefore enables faster data transmission (10 Mbit/s).

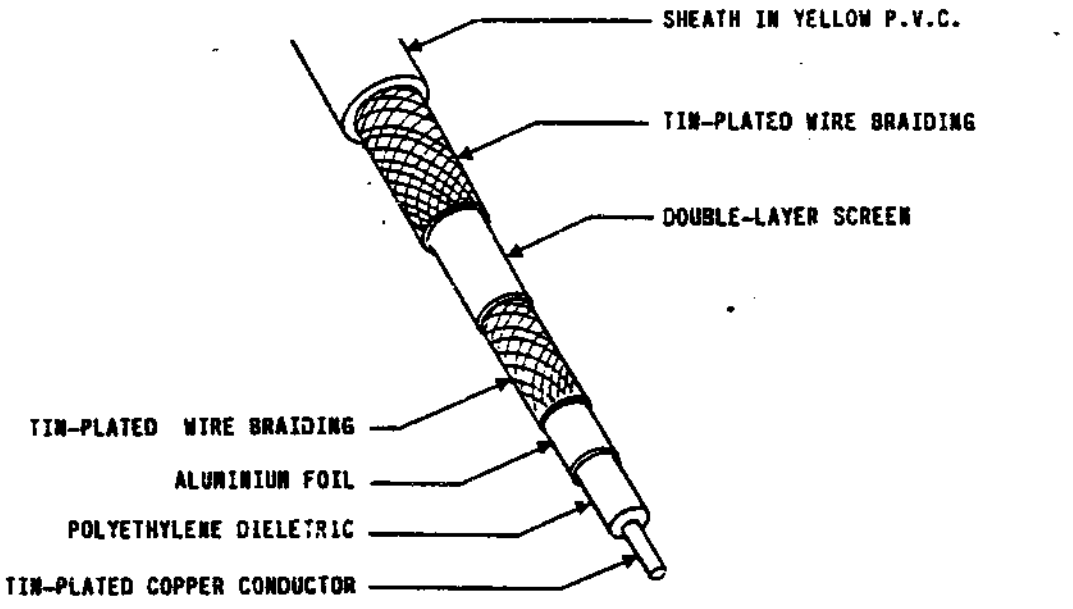


Fig. 7-2 Coaxial Cable Composition

COAXIAL CABLE CHARACTERISTICS

- ETHERNET type
- Characteristic impedance: 50 ohm – 2 ohm
- Attenuation at 10 MHz: 1.7 dB/100 metres
- Attenuation at 5 MHz: 1.2 dB/100 metres
- Capacity: 85 pF/m . Expanded dielectric in polyethylene.
- Unique central conductor: 2.16 ~ 0.013 mm in diameter (red copper)
- External diameter: 10.3 mm
- Braiding: double (red copper).

DROP-CABLE (CBL 3391/2/3/4)

This type of cable is used to connect the trunk-cable to the LSX 3000 unit (LSX 3000 TRANSCEIVER).

The Drop-Cable is a cable screened by torques that are individually twisted with alluminium foil.
The external screen must be isolated from the screens of the internal torques. All the torques are covered in polyethylene.

DROP-CABLECHARACTERISTICS

- Three AGW 22 torques:
  colour: blue/green, yellow/orange, white/black.
- One AGW 20 torque: colour: violet/grey.
- Continuity wire: plied tin-plated copper AGW 20
- Total screen: 90% coverage
- Total sheath: colour grey Olivetti - 0 + 10 max
- Impedance: 78 ohm
- Speed factor: 66%

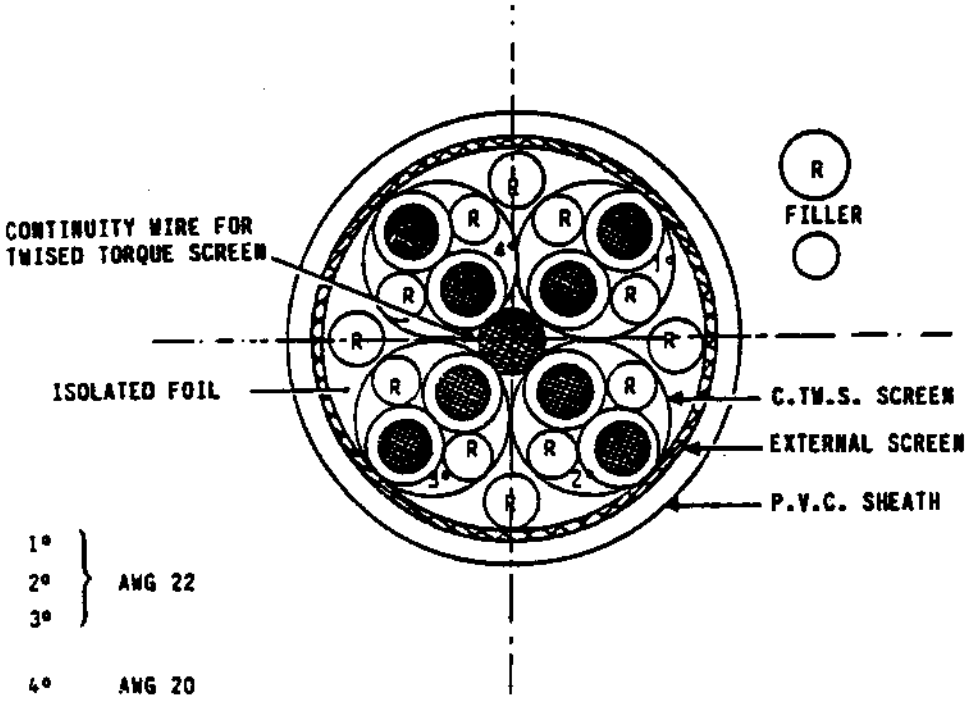


Fig. 7-13 Drop-Cable Description

7.4 STARLAN LOCAL NETWORK

The STARLAN local network supplies a transmission speed of 1 Mbit/s.

A STARLAN network consists of the following elements:

GO 435 BOARD (located in LSX drawer)

C-BOX

TELEPHONE DUPLEX CABLE

HUB

The connection between the GO 435 and C-BOX is made using the cable supplied with the C-BOX.

The C-BOX is connected to the HUB using the telephone duplex cable (max. 250 m).

The HUB is connected to the PC using the telephone duplex cable (max 250 m).

For further information refer to the following documents:

- PSP "LAN Organizational Technical Notes"
  code 3876490 K/02
- NOP "Installation Standards for OLIVETTI LANs"
  code 3876493 U/05B (to be issued shortly)

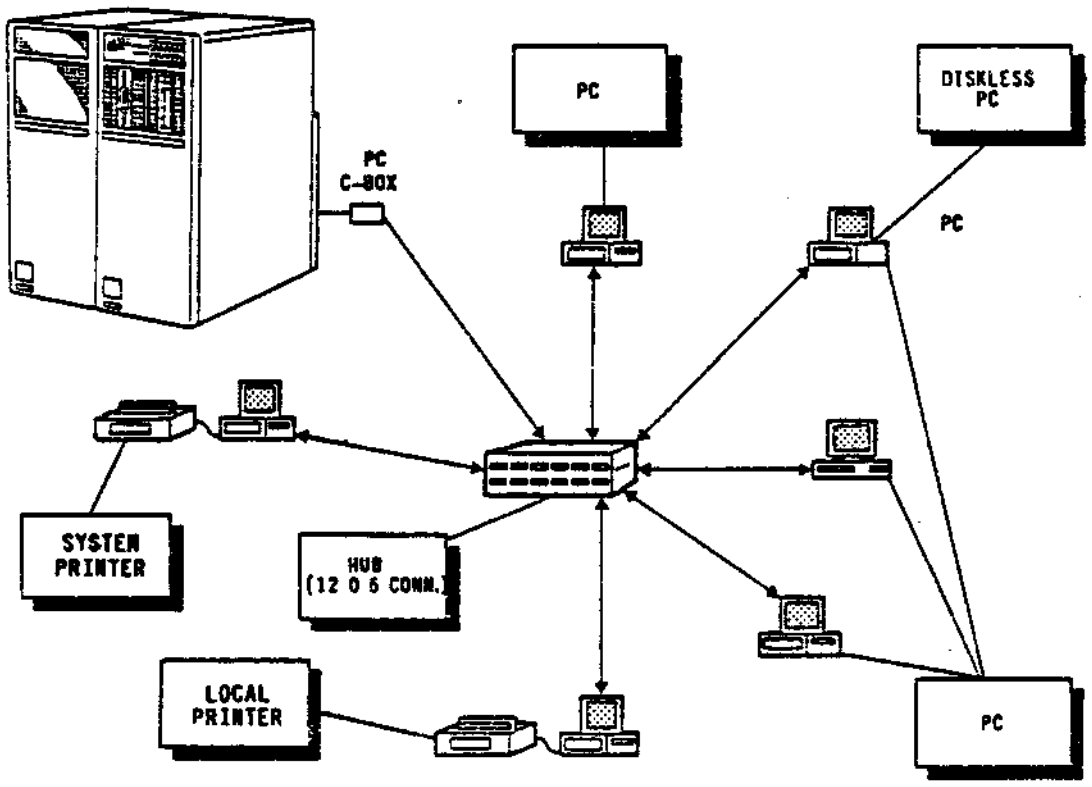


Fig. 7-4 Network Configuration

7.4.1 HUB NCB 9106 – NCB 9112

Two types of HUB are available (HUB6 and HUB12) that are used to connect 6 or 12 systems or HUBs.

These devices are powered by external power supplies that supply 12 V DC and 12 V AC, depending on the type of HUB (12 V DC for HUB6 and 12 V AC for HUB12).

As a result, the HUB must be placed close to an AC power supply socket.

To prevent random disconnections of the network, the HUBs should be installed in easily accessible places, or in dedicated closed cupboards with a dedicated AC socket.

The HUB dimensions and their power supplies are given below.

"HUB"CHARACTERISTICS

- Environmental conditions: Temperature between 0 and 43 °C.
  Relative humidity between 5% and 95 % (uncondensed).
- Dimensions: 32 cm x 120 cm x 8 cm
- Absorptions: HUB6 = max 7 watts
  HUB12 = max 15 watts
- Power Supply: HUB6 = 12 V cc
  HUB12 = 12 V ca

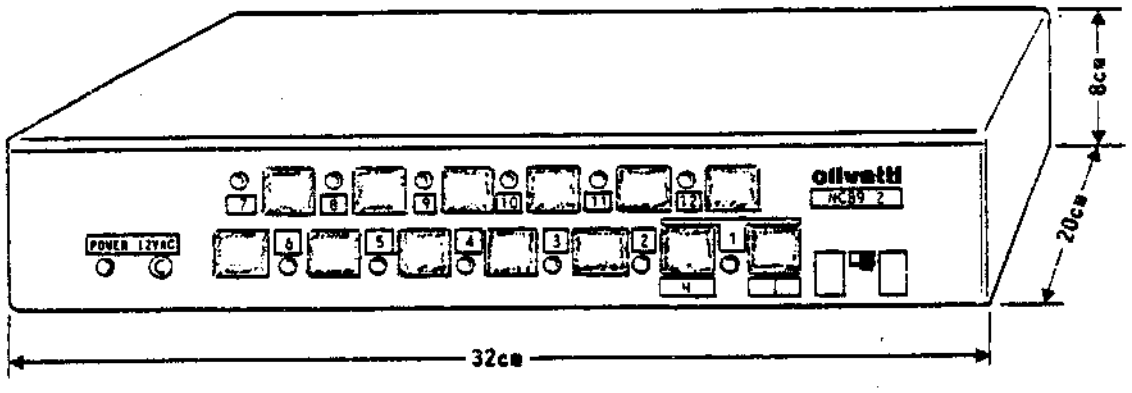


Fig. 7-5 HUB 12 Dimensions

220/240 V Power Supply for HUB 12

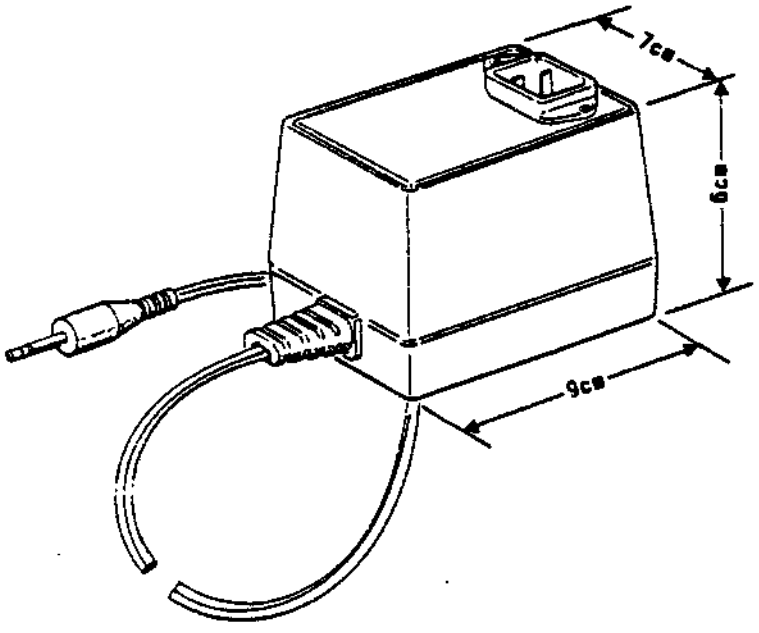


Fig. 7-6 Power Supply Dimensions for HUB 12 (220/240 V)

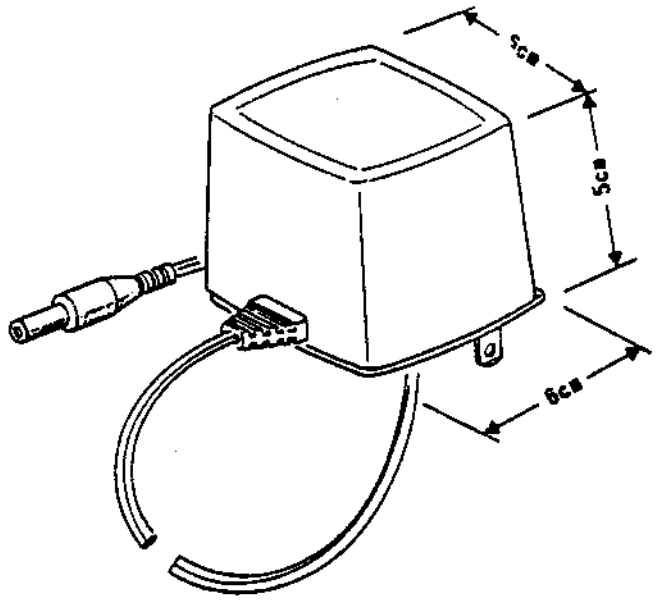


Fig. 7-7 Power Supply Dimensions for HUB 12 (110/115 V)

HUB 6

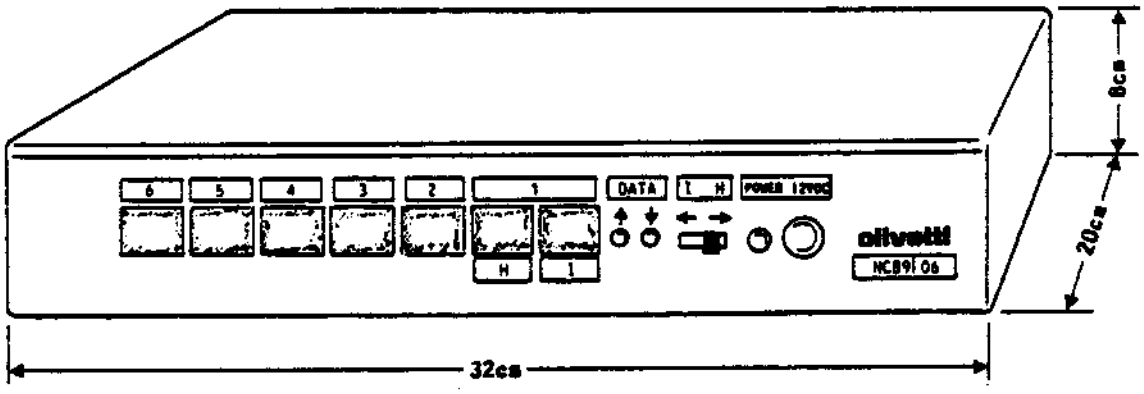


Fig. 7-8 HUB6 Dimensions

220/240 V Power Supply for HUB6

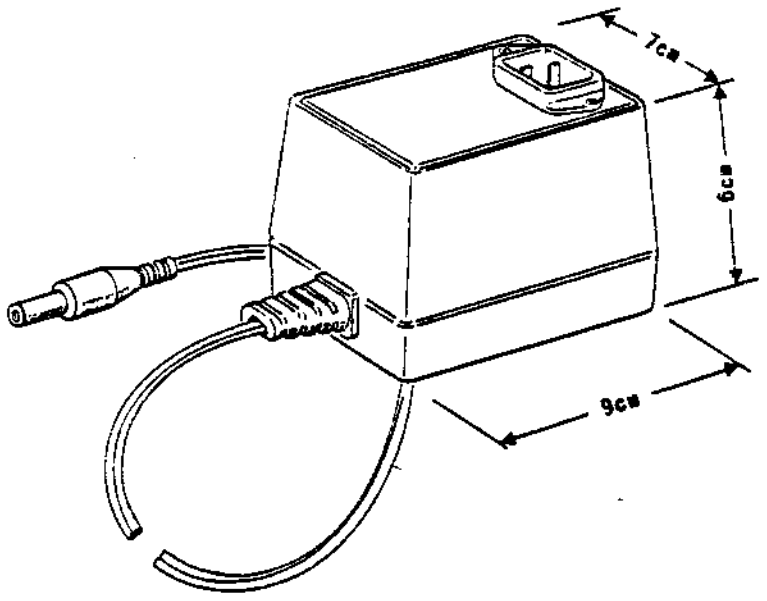


Fig. 7-9 Power Supply Dimensions for HUB6 (220/240 V)

110/115 V Power Supply for HUB6

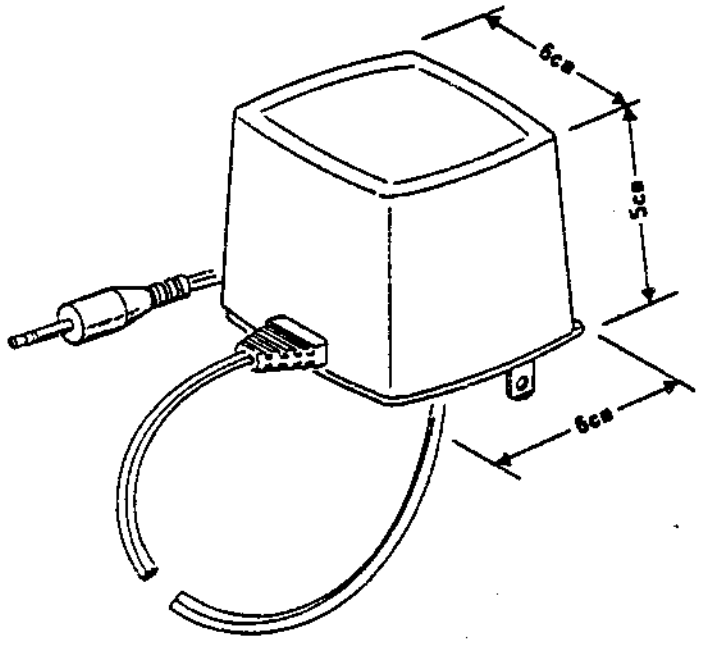


Fig. 7-10 Power Supply Dimensions for HUB6 (110/115 V)

DROP-CABLE

The drop cable consists of a rubber-sheathed cable, terminated with two twisted torques with 8-way plugs. The drop cable is available in the following lengths:

2 metres – CBL9101
7.5 metres – CBL9104 / also present in commercial module of the board

30 metres – CBL9102
100 metres – CBL9103

TRUNK-CABLE

The trunk-cable consists of two twisted wire torques, one for each transmission direction.
Figure 6 shows the IEEE standard pin out used in an 8-pin standard telephone connector.

The two transmission wires must constitute one twisted torque and the two reception wires must constitute the other twisted torque. This guarantees a good level of protection from interferences caused by frequency radios.
Nearly all the telephone cables are used for the trunk-cable, as long as they comply with the technical characteristics established in the IEE 802.3 standard, i.e.:

- Dual telephone duplex cable, twisted and unscreened
- AWG 26/AWG 24/AWG 22/ (section of each individual conductor)
- External diameter of individual conductor: 0.9 mm maximum
- Bottom line attenuation no higher than 6.5 DB, at a frequency of 1 Mhz
- Insulating material in PVC (other insulating material is allowed; clearly the use of better insulation improves performance).

A cable that corresponds to the above characteristics can be used for systems connected via HUB12 (12-way HUB) and systems connected via HUB6 (6-way HUB) and the following distances can be reached:

AWG 26 - 210 m AWG 24 - 230 m AWG 22 - 250 m

Note: These distances are moderate, as it is assumed that drop-cables will be connected to the ends of the cables that worsen the connection.

A.C. Network Distances

If the drop-cable or trunk-cable runs parallel to the electricity supply cable, a distance of at least 30 cm must be left.

If the section where the cables run parallel does not exceed 5 metres, a distance of 2 cm can be left.

If the section where the cables run parallel does not exceed 20 metres, a distance of 4 cm can be left.

If the trunk-cable or drop-cable crossover the electricity supply cable at 90 degrees, a distance of at least 2 cm must be left.

The above applies to cases where the electricity supply cables do not carry more than 10-20 KVA.

The HUB must be placed at a distance of 30 cm from the power cables.

If it is not possible to keep to these distances, the LAN cables must be installed in metallic pipes and the HUB must be placed in a metallic cupboard. Pipes and cupboards must be earthed at one point, in accordance with the dedicated earthing standards common to all networks that use a screened cable.

Remember that local network cables should NEVER be inserted in the same AC network channel.

Note: For details on the data referred to the individual network boards, refer to the documentation of the individual product.

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UPDATING STATUS

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