RCSL : 44 - RT 1079
Date : october 1976
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RC 7000 installation manual

General Information.

Introduction:

This manual contains the physical and electrical specifications of the equipment units included in the RC 7000 hardware line as well as general information for use in planning the installation of the RC 7000 system.

As RC 7000 systems, like all data processing equipment, place certain qualitative demands on the environment, power supply, and so on, information on these matters is included.

Important note:

This manual is intended only for general guidance.

It contains no other information than the ones, which can be given in advance as applicable to all RC 7000 systems. Moreover, the technical data given, while correct at the time of publication, is liable to change without notice. It is therefore essential to consult A/S Regnecentralen or its local representatives before making final plans for installation.

Layout of the machine room:

The following must be considered when planning the room in which the equipment is to be installed.

Determination of proper room size to house the equipment should take into account both space required by the equipment and the general work and access area. Assuming the width of the room is no less than 1/3 of the length, a usefull rule of thumb is that the square meter of the equipment times (x) 5 will give the minimum number of square meter necessary for the proper use of the equipment.

Avoid placing the equipment directly against the wall. Clearance will improve ventilation and prevent heat buildups.

Standard signal cable length:

See page 2.1.

Space for supplies, Data Files and accessories:

Space will be required near the units for some or all of the following: magnetic tape, printer paper, paper tape, a paper tape bin, a paper tape winder, cards and magnetic disc cartridge.

The quantity of supplies and data files in the immediate virinity of the units should be kept to a minimum (current jobs).

A store room for supplies and a data library should be maintained separately, but conveniently close to the machine room.

Light:

The units must not be exposed to direct sunlight.

Noise:

If the installation includes a printer or card reader, the ceiling of the machine room should be constructed with sound absorbing materials.

Dust:

Operations in the machine room should be planned so as to minimize paper handling and other dust producing activities.

Smoking should be completely prohibited.

Flooring:

The floor should not be covered with carpeting, unless it is a good grade of anti-static carpeting that has less than 2kv of static build-up. There is a special instrument that measures static build-up, which your carpet dealer might supply. Anti-static carpeting can be identified by its metal fibers or the clear plastic strands imbedded in the carpet pile. We recommend its use, if carpeting is to be used.

Environmental requirements.

Air conditioning:

Permissible temperature and humidity ranges for the RC 7000 system are determined by the most demanding unit, which will normally be the Disc Unit. A disc itself can be used wiyhin the temperature range 16-32°C, but since the temperature in the immediate vicinity of the disc drive mechanism can rise slightly above the ambient temperature, an upper limit of 27°C is specified for satisfactory operation.

The system as a whole therefore normally requires a temperature in the range 16-27°C and relative humidity in the range 40-60%. An environment within these ranges will also provide the greatest degree of operator comfort. The recommended environment is 20°C and 50% relative humidity.

Changes in temperature should not exceed $\pm$ 1.5°C per hour. If a new machine room is to be equipped, it is strongly recommended that an air conditioning company preferably with specialist experiency in equipping computer rooms is engaged to design and install the air conditioning system.

Cooling capacity:

The air conditioning system should be large enough to absorb the heat produced by the equipment, as indicated on page 3.1., as well as that produced by people, lighting, solar radiation on a worst case basis (for example on a hot sunny day with all the units operating).

Mains power supply:

The user's main responsibility regarding power is to provide a single outlet, with protective ground and a manual isolating switch, in a suitable position relative to the central unit.

Normally the supply must be 3 phase 220V $\pm$ 5 % 50Hz $\pm$ 2Hz, but if the installation does not include a card reader or line printer, then in some cases the supply can be 220V single phase.
Contact A/S Regnecentralen or its local representatives for further information.

The capacity of the supply must provide for the sum of the maximum power consumption of the individual units, as indicated on page 3.1. Normally 16A fuses should be used.

It is also the user's responsibility to see that the electrical installation conforms to local regulations.

Fire precautions:

All data processing equipment, including that in the RC 7000 hardware line, is sensitive to heat, and can be permanently damaged even by the proximity of fire. What is more, magnetic data media are particular sensitive. Prolonged exposure to temperatures over 65°C can distort data on magnetic tapes or disks, while temperature over 120°C will destroy such data completely. Magnetic media and certain types of equipment are also sensitive to smoke.

For these reasons it is advisable to implement special precautions against fire starting in the machine room or spreading from elsewhere in the building.

All furnishings in the machine room should be made of non-flammable material, and the accumulation of paper and other compustible waste material in the machine room should be minimized.

Arrangements should be made to enable the air conditioning installation serving the machine room to be shut off immediately on detection of a fire anywhere in the building.

If, despite all precautions, there should be a fire in the machine room, not only will equipment be damaged but data will also be destroyed. Lost data can be expensive to replace, and can cause heavy operational losses through the delays involved.

Unfortunately, these indirect losses are not normally insurable and must therefore be prevented by effective data security measures.

A fire-proof safe gives good protection for paper tape, but is inadequate to protect data on magnetic media. For security against ordinary operating accidents or physical failures, it is usual to keep 2 additional copies of important magnetic data files, or else a means of regenerating the files which can itself survive a further accident or failure. For securing against fire, it is necessary to keep at least one of the copies or sets of regerating material on entirely separate premises.

Standard signal cable length.

	Mounting	Cable length
Teletype terminal	free standing	2,5 m
Display terminal	table	12 m
Card Reader	table	12 m
Line Printer	table	12 m
Paper Tape Reader	table or cabinet	5 m
Paper Tape Punch	table	5 m
Plotter	table	5 m

The length of the signal cable determines the greatest possible distance between any of the above equipment units and the Central Unit.

It should be borne in mind that some of the cable length will be consumed whenever it is necessary to lead a cable down to the floor from an equipment unit or up from the floor to the Central Unit.

Electrical and Physical Data

	Height	Width	Depth	Heat Dissipation	Maximum Power Consumption
	cm	cm	cm	kcal/h	W
NOVA 2/10 CPU incl. controllers	26.7	*	*	623	725
Teletype	83.0	47.0	47.0	95	110
RC 823 Display	37.8	35.6	52.0	65	75
Card Reader	29.1	50.1	37.6	490	570
Matrix Printer, 100 chars/sec	30.5	58.4	48.3	258	300
Matrix Printer, 165 chars/sec	28.8	69.3	50.3	258	300
Paper Tape Reader, RC 500	13.3	44.0	27.0	86	100
Paper Tape Reader, RC 2000	32.5	52.0	46.5	172	200
Paper Tape Punch	19.1	22.7	48.0	172	200
Plotter, 12-inch drum	25.4	45.7	38.1	301	350
Plotter, 30-inch drum	25.4	101.6	38.1	301	350
Cassette Tape	17.8	*	*	387	450
Fixed Head Disc	31.1	*	*	688	800
Moving Head Disc Adapter (2 dr)	17.8	*	*	198	230
Moving Head Disc Adapter (4 dr)	17.8	*	*	396	460
+ each drive (= 1.2 MW)	17.8	*	*	[1] 240	[1] 280
Magnetic Tape	62.2	*	*	344	400
Cabinet CAB 709	140.0	57.5	80.0	40	46

* For cabinet mounting

[1] Start figures. Run figures are: 60 kcal/h, 70 W