DCS 6000

User Manual

Digital Conference System

PS 6000   Power Supply

Danish Interpretation Systems   **DIS**

List of Contents

Important

Compliancy

The equipment has been tested and found to comply with the limits of the following standards for digital devices:

- EN55103-1 (Emission)
- EN55103-2 (Immunity
- EN60065 safety
- UL6500 safety
- FCC rules part 15, class A (Emission)

This device complies with part 15 of the FCC rules. Operation is subject to the following conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in residential, commercial or light industrial environments. The equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the user manual it may cause harmful interference to radio communications.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

Safety

Check that the voltage of your local power supply is within the operating voltage of the unit (100-240V AC). If a voltage conversion is required, consult your DIS dealer or qualified personnel.

Should any liquid or solid object fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it further.

Set the Power switch to OFF if it is not used for several days.

The equipment must be connected to earth

Installation precautions

Allow adequate air circulation to prevent internal heat built-up. Do not place the unit on a surface (rugs, blankets, etc.) that may block the ventilation holes.

Do not install the unit in a location near heat sources such as radiators or air ducts, or in a place exposed to direct sunlight, excessive dust or humidity, mechanical vibration or shock.

To avoid moisture condensations do not install the unit where the temperature may rise rapidly.

When installing the unit inside a 19" rack, observe that the rack is properly ventilated. The maximum allowed temperature inside the rack is 40 °C.

Cleaning & Repacking

To keep the cabinet in its original condition, periodically clean it with a soft cloth. Stubborn stains may be removed with a cloth lightly dampened with a mild detergent solution. Never use organic solvents such as thinners or abrasive cleaners since these will damage the cabinet.

Save the original shipping cardboard box and packing material; they will become handy if you ever have to ship the unit. For maximum protection, re-pack the unit as originally packed from the factory.

Warranty

The unit is minimum covered by 12 months warranty against defects in materials or work-manship.

Description of the DCS 6000 system

Features

The DCS 6000 system has the following main features:

- Fully digital

- Excellent sound quality

- "State of the Art" fully digital integrated interpretation, discussion and voting system offering interpretation, language distribution, conference microphone and voting facilities with attendance check with Chip Card ™.

- New, unique digital DATA and AUDIO bus.

- 39 incoming channels (8 floor channels + 31 interpreted channels) and one Line input.

- 34 distributed channels (3 x floor + 31 interpreted channels)

- The Delegate and Interpreter units are powered and controlled by the CU 6005 Central Unit, which drives up to app. 50 units on 2 chains or by the CU 6010 Central Unit, which drives up to app. 200 units on 4 chains.

- EX 6010 Extension Units or PS 6000 Power Supplies available if more units are required

- A total of 4000 units (delegate and/or interpreter units) can be connected to the system.

- Using screened CAT5 or CAT5e cabling (FTP or STP) ensuring a very cost effective installation and easy set-up of portable systems

- Firmware in Delegate units, Interpreter Units, Central Units etc. upgradeable through serial PC-connection (RS232 or RS422)

- Can be operated with or without a PC.

- Added functionality and comprehensive features provided by SW 6000 software package running on PC

  RS232/RS422 connection on CU 6005/6010 for external operation of the system of a PC or control system such as AMX or Crestron

The SW 6000 is an optional software package, which expands the functionality of the DCS 6000 system. The software runs on standard computer technology (Standard PC with Windows 2000 or XP).

Main features of the SW 6000 are:

- Microphone management

- Mimic panel operation

- Interpretation management

- Voting management

- Message handling

- Agenda handling

- Data stored on SQL data base

- Web interface available for easy links to external databases

- Multi language user interfaces

- Supports different User types with different priorities, user interfaces and control possibilities

- Variety of printing facilities such as speaker's log, voting results, delegates list etc.

System components

The CU 6005/6010 Central Unit supports all available units in the DCS 6000 series:

Central equipment etc.

EX 6010	Extension Unit
PS 6000	Power Supply
AO 6004	Audio Output box
AO 6008	Audio Output box
RP 6004	Repeater for four chains
JB 6002	Junction Box with 2 outputs
JB 6004	Junction Box with 4 outputs

Interpreter equipment

IS 6132P	Interpreter Set
LS 6132P	Interpreter Loudspeaker

Voting equipment

DV 6501F	Voting Unit

Conference equipment and channel selectors

CS 6032FV/H	Channel Selector (flush mounted)
DM 6010P	Conference Unit (portable)
DM 6060P	Conference Unit (portable) with one built-in channel selector
CM/DM 6070P	Conference Unit (portable) with two built-in channel selectors
CM/DM 6090P	Conference Unit (portable) with two built-in channel selectors and XLR microphone connector
CM/DM 6060F	Conference Unit (flush mounted) with one built-in channel selectors
CM/DM 6510F	Conference Unit (flush mounted) with Chip-card and 3 voting buttons
CM/DM 6560F	Conference Unit (flush mounted) with one built-in channel selector, Chip-card and 3 voting buttons
MU 6040C/D	Microphone Unit for use with customised front plate with Loudspeaker, Microphone and Buttons. Available in Delegate (D) and Chairman (C) version
MU 6042D	Dual Microphone Unit for use with FD/FC front plate with Loudspeaker, Microphone and two delegate Buttons
AM 6040	Ambient Noise Microphone

Operating instructions

PS 6000 Power Supply

General description

The PS 6000 Power Supply provides additional Power for the DCS 6000 system.

One CU 6005/6010 Central Unit is needed in each DCS 6000 system; however for expansion of the system the PS 6000 Power Supply is suitable. The PS 6000 consists of:

- One Power Supply

- Control electronic for detecting system power

Features

The main features of the PS 6000 Power Supply are:

- Built in Power Supply for app 60 units (Delegates) or app. 150 Channel Selectors

- One connector for connection to Delegate Units, Interpreter Units etc.

- One connector for connection previous unit (i.e. CU 6005/6010.

- Delayed switching on of power to minimise the total 'switch-on' current on the Mains supply.

- Designed in a small size easy-to-install cabinet.

Connectors

The PS 6000 Power Supply features the following connectors:

❑ *Power connector*
Connection for main power.

❑ *Loop through connectors*
RJ45 connector, 2 pieces

DCS-LAN connectors used for connection to the CU 6005/6010 and for connection to other units with DCS-LAN connectors such as more PS 6000.

❑ *Power LED*
Those green LED light up when Power is available on the connector next to the LED.

System design

There are no settings to be done on the PS 6000 Power Supply.

However it is important to observe, that the unit is only adding power to one of the chains on the CU 6005/6010 Central Unit.

And as so, the specification, which applies the two chain outputs on the CU 6005 Central Unit and to each of the chain outputs on the CU 6010 Central Unit, does also apply to the output on the PS 6000.

And the PS 6000 is NOT a repeater, which means that the maximum cable length in a chain (which without repeater is 200 m) has to be calculated from the last unit with repeater functionality (typically a CU 6005/6010, EX 6010 or RP 6004) to the last unit connected to the PS 6000.

This includes interconnection cables between the units.

Use of PS 6000

The PS 6000 can be inserted at any point in a DCS 6000 chain, where extra power is needed. The PS 6000 is used, when extra power is needed typically, where long feeding cables are needed.

A typical application is to place a PS 6000 in the first Interpreter Booth to compensate for a long feeding cable.

The following schematic shows various ways in how to use the PS 6000 Power Supply:
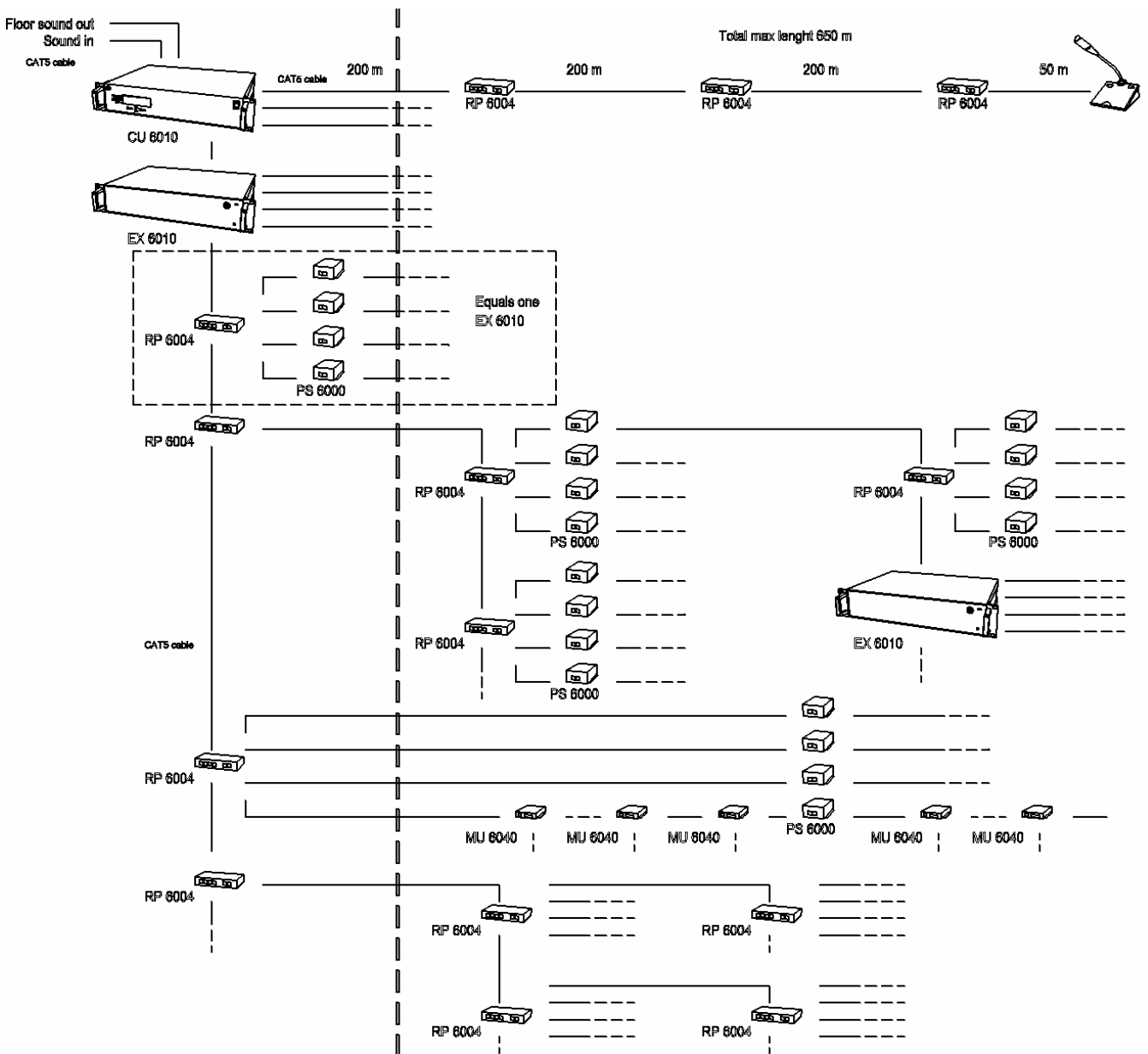
System Setup

General guidelines

Connect the PS 6000 to the various DCS 6000 units using Cat5 or Cat5e FTP or STP <u>screened</u> cables. Please observe the following guidelines:

- Maximum cable length in one chain is 200 m without repeater. This includes interconnection cables between the units. The max. usable cable length depends on the units connected and length of feeding cables etc.

- Maximum cable length in one chain when using repeaters is 650 m.

- Although the output on the PS 6000 have a 125W supply, this 125W power is not all usable with long cables, as there will be a voltage drop in the feeding cable from the PS 6000 to the units connected. If the feeding cables are short and the cables between the units are short, more units can be connected than if the feeding cable is long and/or the cables are long between the units. Please consult the next section (Max. Number of units to be connected)

- If the last unit in one chain is a CS 6032 Channel Selector, this unit has to be terminated with an external termination, as the CS 6032 does not have an internal termination.

It is desirable that the square of the feeding cables especially, but also the interconnection cables are as big as possible to minimize the voltage drop in the cables. Cat 5/Cat5E cables are delivered in various gauges:

The following table is showing the Diameter/square for various AWG types

Type	Diameter	Square
AWG22	0.64 mm	0.32 mm2
AWG23/1	0.57 mm	0.25 mm2
AWG24	0.53 mm	0.22 mm2
AWG26	0.42 mm	0.14 mm2

Max. number of units to be connected

The following tables show the maximum number of units, which can be connected to the two outputs (A1 or A2) on a CU 6005 Central Unit *in total* or to *each* of the four outputs (A1, A2, B1 or B2) on a CU 6010 Central Unit or to *each* output on an EX 6010 Extension Unit or to the output of a PS 6000 Power Supply.

CM/DM 60x0P Chairman/Delegate Units

Length of Feeding Cable Type CAT5 AWG24	Length of inter connecting Cable, Type CAT5 AWG24	Total cable length	Max. number of CM/DM 60x0 pr output
10 m	1 m	51 m	42
30 m	1 m	67 m	38
50 m	1 m	83 m	34
100 m	1 m	123 m	24
150 m	1 m	165 m	16
10 m	2 m	88 m	40
30 m	2 m	98 m	35
50 m	2 m	108 m	30
100 m	2 m	142 m	22
150 m	2 m	180 m	16

CM/DM 60x0P Chairman/Delegate Units & JB 6002 Junction Box

This configuration shows two CM/DM 60x0 Delegate/Chairman Units connected to one JB 6002 Junction Box with 3m cables between each JB 6002. Maximum 5 m cable from JB 6002 to CM/DM 60x0 and max. one CM/DM 60x0 on each output of JB 6002.

Length of Feeding Cable, Type CAT5 AWG24	Length of Cable between each JB 6002, Type CAT5 AWG24	Total cable length	Number of JB 6002	Max. number of DM 60x0
10 m	3 m	61 m	18	36
30 m	3 m	75 m	16	32
50 m	3 m	89 m	14	28
100 m	3 m	127 m	10	20
150 m	3 m	168 m	7	14

CM/DM 6060F/6510F Chairman/Delegate Units

The following tables show the maximum number of units, which can be connected to the two outputs (A1 or A2) on a CU 6005 Central Unit *in total* or to *each* of the four outputs (A1, A2, B1 or B2) on a CU 6010 Central Unit or to *each* output on an EX 6010 Extension Unit or to the output of a PS 6000 Power Supply.

Length of Feeding Cable Type CAT5 AWG24	Length of inter connecting Cable, Type CAT5 AWG24	Total cable length	Max. number of CM/DM 60x0 pr output
10 m	1 m	39 m	30
30 m	1 m	56 m	27
50 m	1 m	73 m	24
100 m	1 m	115 m	16
150 m	1 m	160 m	11
10 m	2 m	64 m	28
30 m	2 m	78 m	25
50 m	2 m	94 m	23
100 m	2 m	130 m	16
150 m	2 m	170 m	11

CM/DM 6560F Chairman/Delegate Units

Length of Feeding Cable Type CAT5 AWG24	Length of inter-connecting Cable, Type CAT5 AWG24	Total cable length	Max. number of CM/DM 60x0 pr output
10 m	1 m	35 m	27
30 m	1 m	53 m	24
50 m	1 m	70 m	21
100 m	1 m	113 m	14
150 m	1 m	159 m	10
10 m	2 m	58 m	25
30 m	2 m	72 m	22
50 m	2 m	88 m	20
100 m	2 m	126 m	14
150 m	2 m	166 m	9

MU 6040 C/D without connected loudspeaker

This table shows the maximum number of MU 6040 Microphone Units, which can be connected. The numbers are with no audio in loudspeaker (no loudspeaker connected to each unit). If loudspeakers are used, then use the figures for CM/DM 60x0 above.

Length of Feeding Cable, Type CAT5 AWG24	Cable length between each MU 6040	Total cable length	Max. number of MU 6040
10 m	2 m	168 m	80
30 m	2 m	178 m	75
50 m	2 m	188 m	70
100 m	2 m	200 m (202 m)	51 (52*)
150 m	2 m	200 m (232 m)	26 (42*)
100 m	1 m	151 m	52
150 m	1 m	191 m	42

Numbers in (') are the number of units, which could have been connected CU/EX, but where the total number of units has been lowered due to the restriction of the maximum length of cable (200 m).

IS 6132P Interpreter Units

This table shows the maximum number of IS 6132P Interpreter Sets, which can be connected. The numbers are with no audio in loudspeaker (no loudspeaker connected to each unit).

If loudspeakers are used, then use the figures for CM/DM 60x0 above.

Note: The number of units is dependant of how many interpreter sets there are per booth (or language), as there only can be one set switched ON per language (channel).

Length of Feeding Cable, Type CAT5 AWG24	Length of inter-connecting Cables, Type CAT5 AWG24	Max. number of units pr output All ON	½ ON	1/3 ON
10m	2 m	54	x	x
30m	2 m	49	57	60
50m	2 m	44	51	x
100m	2 m	35	40	x
150m	2 m	25	30	x

IS 6132P w/JB 6004 and LS 6032

Length of Feeding Cable, Type CAT5 AWG24	Length of cable between booths	Number of booths	Number of IS 6132/ booths	Number of LS 6032/ booths
10 m	5 m	19	4	0
10 m	5 m	12	4	4
30 m	5 m	17	4	0
30 m	5 m	10	4	4
50 m	5 m	15	4	0
50 m	5 m	9	4	4
100 m	5 m	11	4	0
100 m	5 m	7	4	4
150 m	5 m	8	4	0
150 m	5 m	5	4	4

CS 6032F Channel Selector w/back light on

Length of Feeding Cable Type CAT5 AWG24	Length of Inter-connecting cable, Type CAT5 AWG24	Total cable length	Max. number of CS 6032 pr output
30 m	1 m	139 m	110
50 m	1 m	144 m	95
100 m	1 m	184 m	85
150 m	1 m	200 m	51 (67')
10 m	2 m	200 m	96
30 m	2 m	200 m	86 (90')
50 m	2 m	200 m	76 (85')
100 m	2 m	200 m	51 (70')
150 m	2 m	200 m	26 (60')

Numbers in (') are the number of units, which could have been connected to the CU/EX, but where the total number of units has been lowered due to the restriction of the maximum length of cable (200 m).

Appendix

Technical appendix

Cabling

CAT5

The DCS 6000 system uses CAT5, CAT5e or CAT6 FTP or STP cables with screened RJ45 connectors.

EIA 568-B wiring shall be used.

It is important to use only FTP or STP (screened) cables and screened RJ45 connectors and not UTP cable, which is unscreened.

How to wire a CAT5 (EIA 568-B) Cable:

Pin	Function	Connector #1	Connector #2
1	In-going +	ORG/WHT	ORG/WHT
2	In-going -	ORG	ORG
3	+48V	GRN/WHT	GRN/WHT
4	0V	BLU	BLU
5	0V	BLU/WHT	BLU/WHT
6	+48V	GRN	GRN
7	Outgoing -	BRN/WHT	BRN/WHT
8	Outgoing +	BRN	BRN

Note.   If other colour codes are used then the four pairs are connected as follows:

Pair 1:   Pin 1 & 2

Pair 2:   Pin 3 & 6

Pair 3:   Pin 4 & 5

Pair 4:   Pin 7 & 8

The phase of the pairs must be correct and the wiring spec. as stated in CAT5 (EIA 568-B) have to be followed.

Note: CAT6 cables can normally only be terminated in sockets (female) and not in cable plugs.

CAT6 can thus only be used for longer cable draws terminating in wall outlets or patch panels.

Accessories (not supplied)

Cat 5e Connection Cables (AWG24)

EC 6000-..5 Connection Cable 0.5 m......................10 03 12500

EC 6000-01 Connection Cable 1 m.........................10 03 13101

EC 6000-02 Connection Cable 2 m.........................10 03 13201

EC 6000-05 Connection Cable 5 m.........................10 03 13501

EC 6000-10 Connection Cable 10 m.......................10 03 14102

EC 6000-20 Connection Cable 20 m.......................10 03 14202

EC 6000-50 Connection Cable 50 m.......................10 03 14502

Technical specifications

General

Power consumption ....max. 150W

Mains voltage: ....100 - 240V, 50...60Hz

Supply voltage for units.. 48V/125W

Temperature to guarantee specified performance

..............................5 Deg. C. to 40 Deg. C. (35 to 80% humidity)

Storage temperature

.... -20 Deg. C. to 60 Deg. C. (10 to 80% humidity)

Weight...1 kg

Dimensions (W x H x D).................... 100 (125) x 50 x 205 mm

Dimensions in bracket are including the fixing bracket

Accessories supplied ....Main cable

Connectors

DCS-LAN loop through....................................... 2 pieces RJ45

Specifications are subject to change without notice.

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