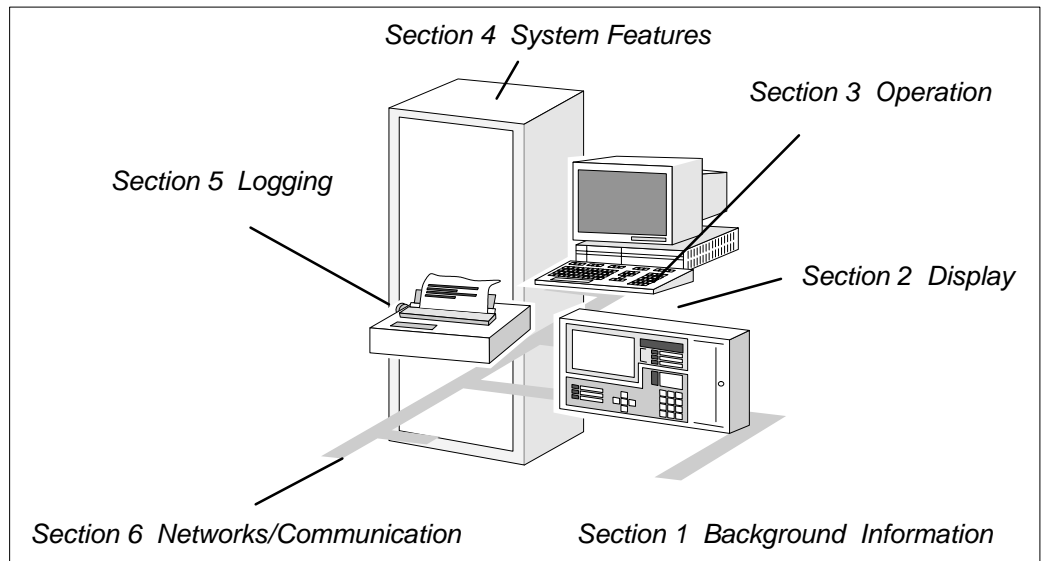


System Summary of Danger Management System DMS 7000



System Summary

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Foreword

This reference document was compiled from information contained in the existing DMS7000 documentation and is not intended to replace any specific existing document, but to provide a working framework for sales/project engineering personnel.

After passing through the basic DMS7000 training course, a sales engineer should, with the additional information contained in this document, be in a position to conduct first contact discussions with prospective customers in a competent and confident manner.

Structure/Use

To fulfill the primary function as a **reference document**, a fixed structure has been maintained wherever possible. Each facet/feature is briefly described under the following headings:

- SW-Version
- Description
- Functions
- System Limits
- Display/Operation
- HW-Requirements
- SW-Configuration
- References

Updating

The structure of the document has been chosen to allow **supplementary data sheets** describing new functions to be added at any time and to accommodate the replacement of individual data-sheets where SW-modifications make this necessary.

In particular it is hoped that the concentration of information on a single data-sheet will assist in speeding up the information transfer process with amendments being distributed **before** the official SW-Release.

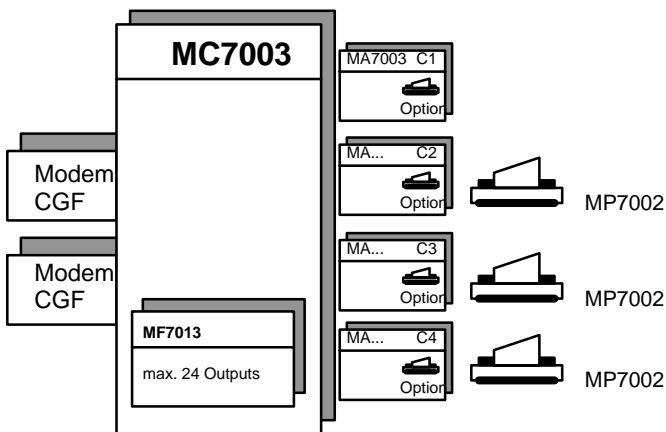
1. Background Information

Section	Feature	SW-Release
1.1	DMS7000 Family	
1.2	Selection Criteria	
1.3	Standard Functions	
1.4	System Capacity	

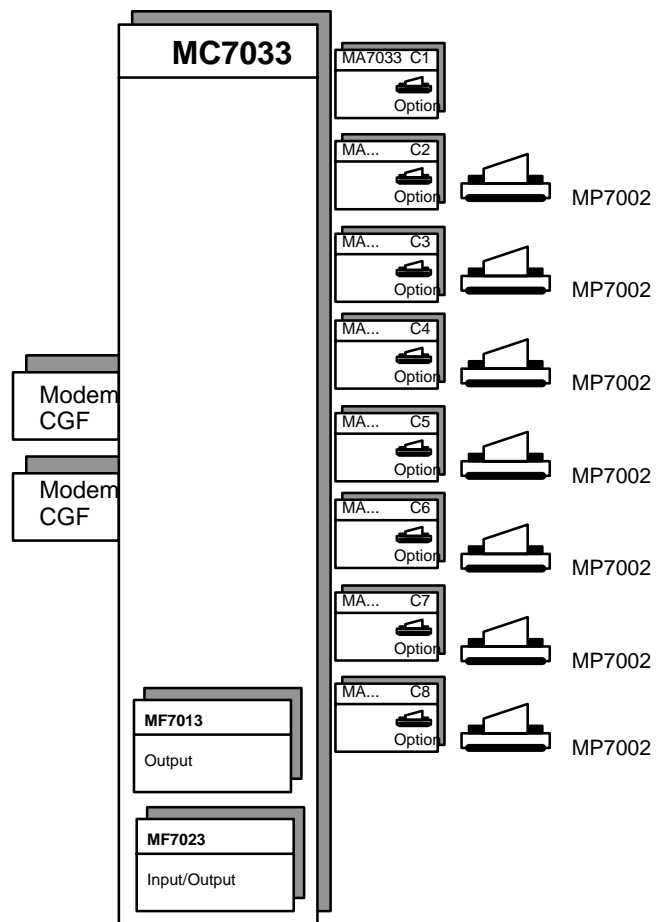
The DMS7000 family consists of the following members:

- MT7003** MC7003 processor and MA7003 system console (with LCD-monochrome display) plus 3 additional ports for system consoles or MP7002 printers (optional keyboard plugs directly into system console)
- MT7033** MC7033 processor and MA7033 system console (with colour monitor) plus 7 additional ports for system consoles or MP7002 printers light-pen and keyboard plug directly into operator console
- MT7023** central processor and system console (MA7033) in same housing (tower) operator console, colour monitor, mouse and MP7002 printer (light-pen and keyboard plug directly into operator console)

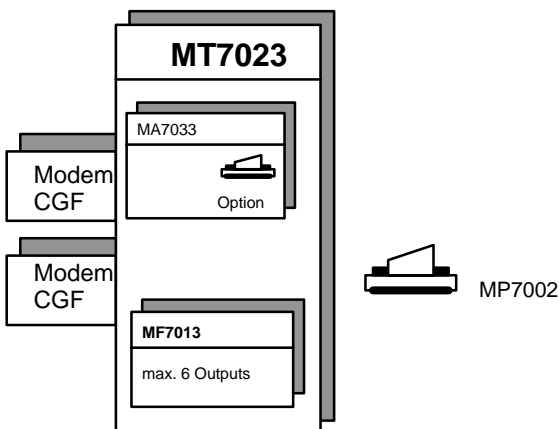
Terminal System MT7003



Terminal System MT7033



Terminal System MT7023



MA... choice of either MA7003, (MA7013) or MA7033

Symbolic representation used for system configuration

Selection Criteria

To simplify selection of the most suitable member of the DMS7000 family for the particular application it is helpful to answer the following questions:

display type	Must the display be both text and graphic or is a text display adequate? a. text only b. text + graphic	MT7003 MT7023 or MT7033
no. of terminals/printers	How many system consoles and printers must be provided? a. one system console and one printer only b. ≤ 4 system consoles/printers c. ≤ 8 system consoles/printers	MT7023 MT7003 MT7033
MUX inputs	Are MUX-inputs required? a. yes b. no	MT7033 (or MF7033) any MT70xx
no. of DMX-outputs	How many DMUX-outputs are required? a. ≤ 6 b. ≤ 12 c. ≤ 192 d. ≤ 576	MT7023 (incl. MF7013) MT7003 (incl. MF7013) MT7033 (incl. MF7023) MF7033
hard disk	Is the installation so large that a hard disk is required or is this a customer requirement (for security reasons or due to the duration of the booting phase etc.)? a. yes b. no	MT7023 or MT7033 MT7003

The answers to these questions provide a basis for constructive negotiations with the prospective customer in finding the optimal solution for his application. In certain cases the answers may suggest contradictory solutions. For example, if a customer only requires text-display but absolutely needs a number of MUX-inputs then he must still have an MT7033 system.

Selection Table

Above data presented in tabular form:

		MT7003	MT7023	MT7033
Display	text only	x	x	x
	graphic + text		x	x
Consoles Printers	1 system console and 1 printer only		x	
	≤ 4 system consoles/printers	x		
	≤ 8 system consoles/printers			x
DMUX	≤ 6 outputs		x	
	≤ 12 outputs	x		
	≤ 192 outputs			x

Standard Functions

As the same system software is used by all family members the only discrepancies result from hardware differences. All functions listed below are available throughout the DMS7000 family although restrictions due to shortage of disk or memory space cannot be excluded.

basic operations:

- Acknowledgement of alarms or trouble messages
- Resetting of alarms in satellite control units (if user has necessary authorisation level)
- Switching zones or elements OFF/ON/TEST
- Switching organisation day/night (present/not-present)
- Switching control elements ON/OFF
- Menu selection
- Password modification

extended operations

- Search Paths (Address Types)
- Macros

on-line editors

- SYSEDIT
- Text editing
- Password allocation
- Language selection
- Date/time correction
- History Printout/Display
- Backup (creates backup copy of system disk)
- Macro
- Tree Editor

System Capacity

For project engineering purposes it is necessary to estimate both the RAM-requirements and the disk drive requirements of the system.

RAM:

available RAM

Basic RAM on E2H081 processor board = 2MBytes
- this may be extended in 2MByte blocks up to a max. of 14MBytes

system requirements

System itself requires approx. 1MByte

site data requirements

Site data requirements may be estimated from the following:

- node 250 Bytes
- intervention text 750 Bytes
- picture 5000 Bytes
- MF-entry 64 Bytes

Example:

The following system could be realised with only 2 additional RAM blocks (total RAM = 6MBytes)

- no. of nodes 8000
- no. of intervention texts 1000
- no. of pictures 300
- no. of MF-entries 200

Disk space:

available disk space

- a HD-floppy disk has a capacity of 1.44MBytes
- a hard disk with 32 MBytes of addressable memory may be employed in a MT7023 or MT7033 system

system requirements

System programs require approx. 700kBytes

site data requirements

Site data requirements may be estimated from the following:

- node 60 Bytes
- intervention text 750 Bytes
- picture 4500 Bytes
- dynamic symbol 16 Bytes
- MF-entry 175 Bytes

Example:

The following system could be realised with a single 1.44MB floppy disk

- no. of nodes 1000
- no. of intervention texts 100
- no. of pictures 50 1)
- no. of MF-entries 200

References

System Terminal MT7000 e1018 User Handbook Section 2

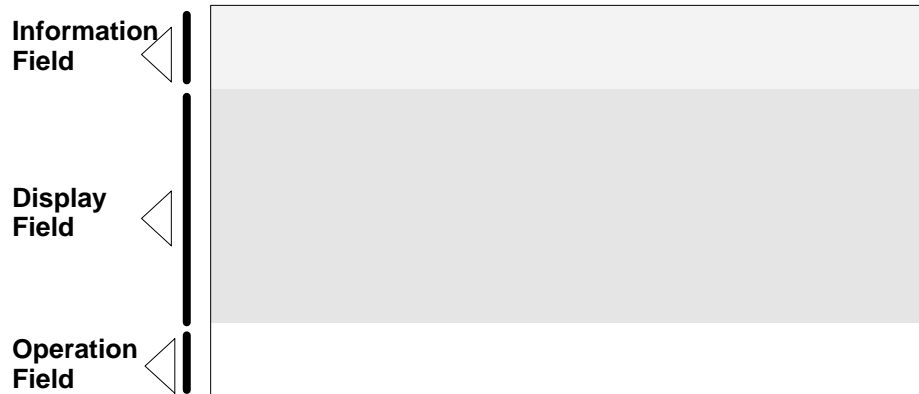
Note: 1) valid for MA7033/MT7023 systems (in MT7003 systems this space is available for extra nodes, intervention texts etc.)

2. Display

Section	Feature	SW-Release
2.1	General Description	
2.2	Text Display	
2.3	Graphic Display	

Display Format

The clear screen organisation is consistent throughout the DMS7000 family. It is split vertically into three sections:



information field

- currently active menu
- current sector and level in tree
- status line
- time/date

display field

Text (spontaneous or requested information)
Graphic (requested picture of site-section)

operation field

currently available commands according to:
- user authorisation level
- current level in tree

Notes

In the MA7033/MT7023 the upper and lower fields remain the same for both text and graphic display-modes.

event display

Spontaneous events are **always** displayed in TEXT-mode first.

If the operator wishes to see the stored picture containing the corresponding symbol, he must then call GRAPHIC-mode (if this is available and if he has the required authorisation).

Description

Event Messages are displayed in a standard 2-line text format.

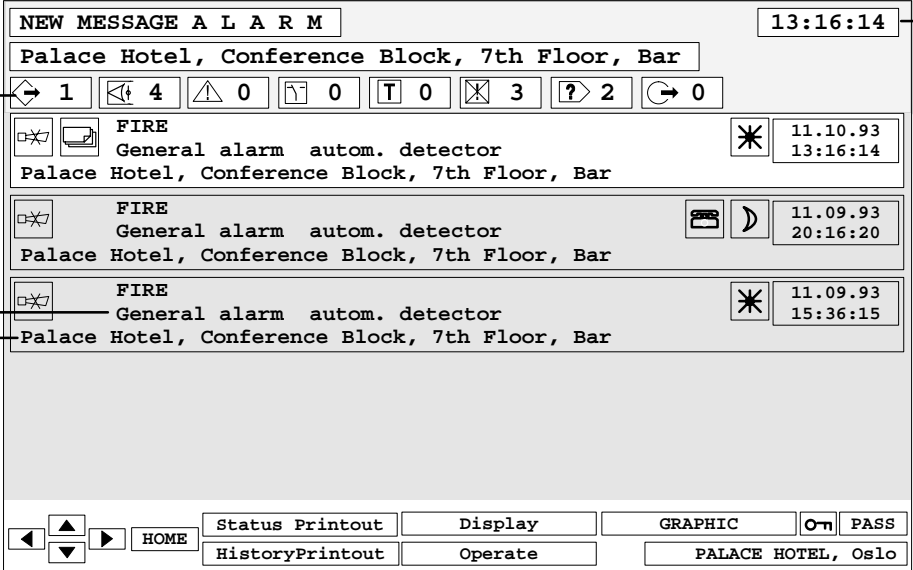
standard text

The upper line is the Cerberus standard text derived from the message telegram and answers the question **"WHAT"**. This text file may be configured as a country standard, although customer specific modifications are not supported. It comprises: **Sector, Message type, Detector type**.

site-specific text

The lower line is put together from the 5 **level names** of the site-tree (which are specified using the Tree Editor SWE10003) and answers the question **"WHERE"**. It comprises for example: **Location, Building, Floor, Room, Element**.

data or time alternate



or short text instead of symbols

standard text

site-specific text

Functions

- Spontaneous message display
- Browsing through tree to view status of specific element/zone

System Limits

Site-specific (customer-defined) text:

- max. no. of characters per line 66
- max. no. of characters per level 35

Display/Operation









On the colour monitor of an MA7033/MT7023 the background colour of the 2-line message indicates the message type:

- red **Alarm** eg general internal alarms
- yellow **Trouble** eg power supply fault
- lilac **Active** eg control contact active
- white **Status** eg zone OFF

The first alarm may be displayed flashing → specified in local system editor of MA70xx. Spontaneous messages are **always** displayed in TEXT-mode.

symbols

A number of symbols are also used to simplify the display:

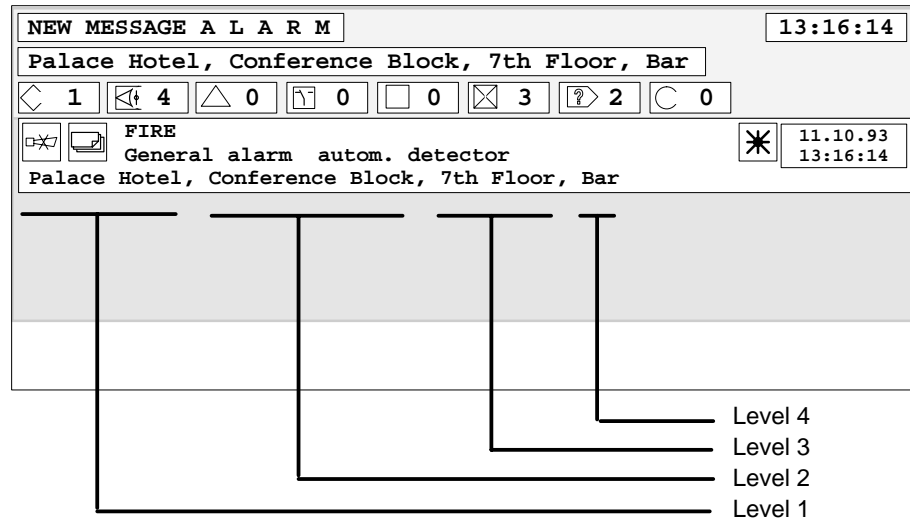
-  acknowledged message
-  unacknowledged message
-  satellite control unit in day operation
-  satellite control unit in manned "present" operation (Intrusion)
-  satellite control unit in night operation
-  satellite control unit in un-manned "not present" operation (Intrusion)
-  remote transmission activated
-  intervention text available

HW-Requirements

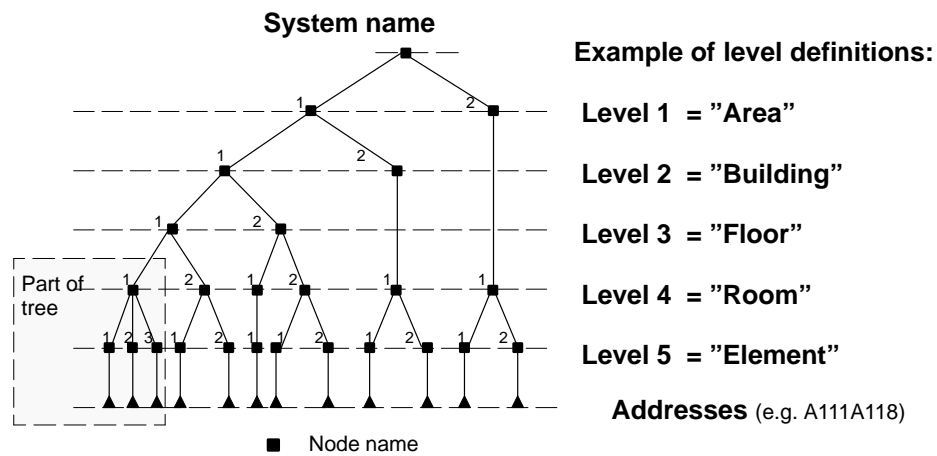
- a. MA7003 with monochrome LCD B2Q210 or
- b. MA7033/MT7023 with colour monitor B2Q050

SW-Configuration

Site-specific text is defined in the Tree Editor SWE100-03 with the help of a Service-PC. Text modifications may also be made directly on the site-hardware using the on-line Text-Editor.



The "Level", "Address types" and "Tree text" may be specified using the Editor SWE100-03



References

- | | | |
|-------------------------|-------|---------------------------|
| System Terminal | e1018 | MT7000 Handbook Section 2 |
| MT7003 Operating Guide | e869a | MT7000 Handbook Section 6 |
| SWE100-03 User Handbook | e821 | MT7000 Handbook Section 7 |

Notes

none

Applications

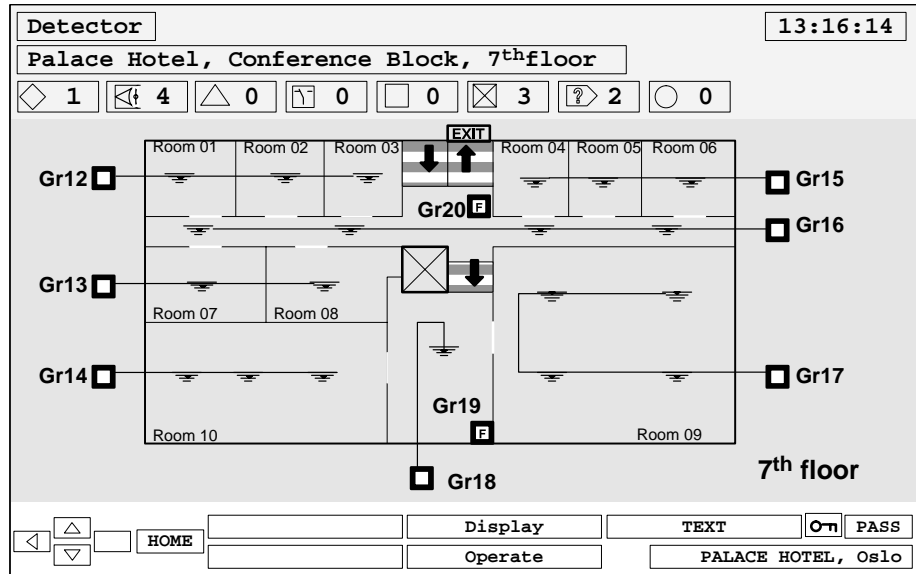
see below

Customer Advantages

- No costly graphic generation required.
- No colour monitor required.
- System may be realised using an MT7003.

Description

A picture should be created for each node of the site-tree and includes all nodes and/or elements which are directly subordinate to it. Dynamic symbols are used to represent individual data-points (detector elements etc.) and signal the current status of the relevant element (or zone). Elements may also be operated on by selecting the symbol with the light-pen (or mouse), then picking out the required operation from the subsequently presented menu. The graphic representation of a part of the site may be displayed on request.



Functions

Pictorial representation of site.

System Limits

1 x Floppy-Disk Drive 1.44 MBytes	100 pictures
1 x Hard-Disk Drive	ca 1000 pictures (limited by 14 MByte RAM-Memory)

Display/Operation

The picture (containing floor/room/element etc.) corresponding to the currently displayed text may be called up by "clicking" **Graphic** in the operation field. The availability of graphics at a particular Port or for a particular Authorisation Level can be specified via the Masking System.

status line

The current values of the status counters are permanently displayed in a Status Line in the Information Field. These eight counters reflect the following:

- Alarms
- Warnings
- Troubles
- Active Signals
- Zones in Test-Mode
- Zones/Elements OFF
- Miscellaneous
- Detectors in Drift (optional)

The counter values take Port Mask definitions into account and only include messages from those sections of the tree which are not masked for that particular port.




The local MA70xx editor allows either the entire status line to be suppressed or the drift counter **only** to be suppressed.

symbols

The current status of the detectors is indicated by the background colour of the associated dynamic symbol:

- | | | |
|----------------|----------------|----------------------------|
| -red | Alarm | eg general internal alarm |
| -yellow | Trouble | eg power supply fault |
| -yellow | Warning | eg sprinkler valve |
| -lilac | Active | eg detector contact active |
| -white | Status | eg zone OFF |
| -gr/ye | Status | eg detector in drift |

Further symbol attributes used to enhance the readability of the display:

- white **day operation (present)**
- light blue **night operation (not present)**
- dark blue **undefined state**
- flashing **message not acknowledged**
- not flashing **message acknowledged**
- crossed through  Zone OFF, detector element OFF or detector address OFF
- flashing  /  Zone/detecor in test-mode

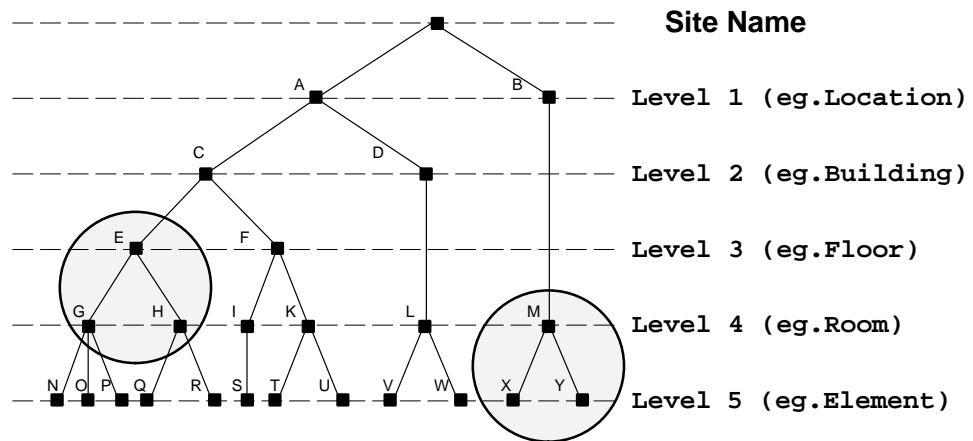
HW-Requirements

MA7033 (or MT7023):
 a. Colour Monitor 15" B3R060 (standard) **or**
 b. Colour Monitor 21" B3R040 (on request)

SW-Configuration

Each picture represents a node in the site-tree together with all the subsidiary nodes or elements which are directly connected to it.

- eg. a. Nodes: E, G, H (E = picture; G and H = symbols)
 b. Nodes: M, X, Y (M = picture; X and Y = symbols)



system data
 generating graphics

Disk drive where graphic files (.GLB and .INX) are located is specified in SYSEDIT

Pictures may be created using the Cerberus SW-Tools GraphEDT/GraphED7 which run under the GEM-Operating System.

Requirements:

- PC, GraphEDT/GraphED7 and SW-Key
- GEM SW-licence (required by all users)
- graphic tablet (plus digitizer mouse) or PC-mouse only

importing graphics

Commercially available SW-package "HiJaak"

- allows conversion from many file formats (AutoCAD etc.) into the GEM-files required by DMS7000.

References

GraphEDT User Handbook	e901a	MT7000 Handbook Section 7
System Terminal	e1018	MT7000 Handbook Section 2
Operating Guide MA7013	e960	MT7000 Handbook Section 6

Notes

- Pictures cannot be edited on the site equipment.
- Hard-copy printout is not available as a standard option. The connection of a video-printer is technically possible though this is **not** supported by Cerberus AG.

Applications

Indispensible in large multi-disciplinary systems (fire, intrusion, techn. surveillance etc)

Customer Advantages

- easier to comprehend and requires less local knowledge of site
- shorter operator training
- reduced interpretation errors.
- reduced possibility of incorrect commands being initiated.
- offers comfortable operation with light-pen or mouse.

3. Operation

Section	Feature	SW-Release
3.1	General Description	
3.2	MA7003	
3.3	MA7033/MT7023	

Terminal Types

Within the DMS7000-Family two types of operator console are available:

- MA7003 LCD-Panel for text display only
- MA7033 colour monitor suitable for text **and** graphic display.

Operation

All operations listed in "General Functions" may be carried out on all DMS7000 Terminals. Operations fall into three categories:

reacting to events

Acknowledgement or Resetting of spontaneous events

guided operation

Only those operations are presented to the operator which are:

- a. possible (eg OFF only when element is ON) and
- b. accessible via the currently active password (Authorisation Level)

sending commands

Operations on specific objects (detectors or zones)
 These are carried out by first selecting the relevant object then selecting the required operation from the subsequently presented menu.
 Selection is achieved with the help of a pointing device:

MA7003	cursor
MA 7023/33	light-pen or mouse

general "housekeeping"

Housekeeping operations
 These operations (initiating a shift printout, making a system backup, modifying an intervention text etc.) are mainly called up from the Editor menu screen and may require the use of a QUERTY-keyboard (eg for text entry).

available commands

ACKNOWLEDGE	switch off horn in satellite control unit
RESET	reset alarm (investigation complete)
ZONE ON	switch on selected alarm zone
ZONE OFF	switch off selected alarm zone
Detection device ON	activate selected alarm element
Detection device OFF	deactivate selected alarm element: alarm zone remains active
ACTIVE	activate selected control contact
INACTIVE	deactivate selected control contact

Masking

The flexible masking system used in the DMS7000 allows operations to be restricted for a particular user-group in three separate ways, depending on:

- which terminal (port) is being used
- what user profile (Authorisation Level) is allocated to the password being used
- what part of the tree may be seen/operated on

This masking system is described in more detail in Section 4.

Port Masking

Selected sectors may not be seen/operated on from specified terminals.

Authorisation Level Mask.

Selected operations may not be carried out by specified user groups

Tree Masking

Selected sections of the site-tree remain "hidden":

- to specified user groups at all terminals or
- to all users at specified terminals.

References

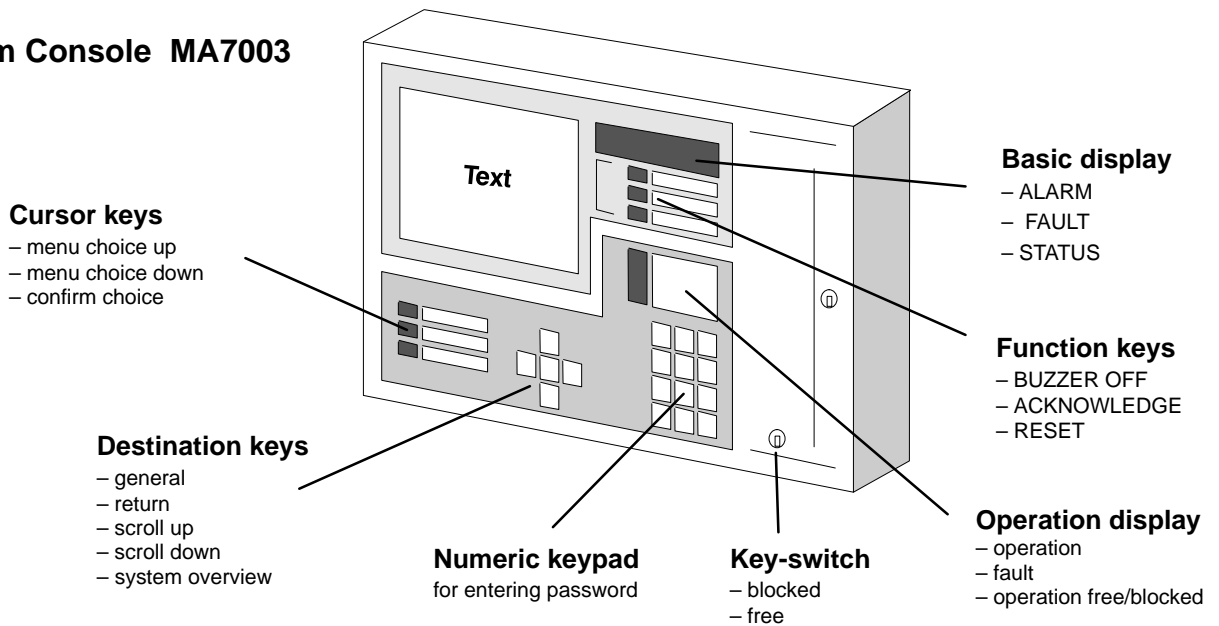
MT7003 Operating Guide e869a	MT7000 Handbook Section 6
MT7023 Operating Guide e1081	MT7000 Handbook Section 6

Notes

If operator is browsing through the tree pages when an event occurs the procedure varies according to the status of the event (and the programming of the system masks with the high level editor access code). With the standard setting the procedure is as follows:

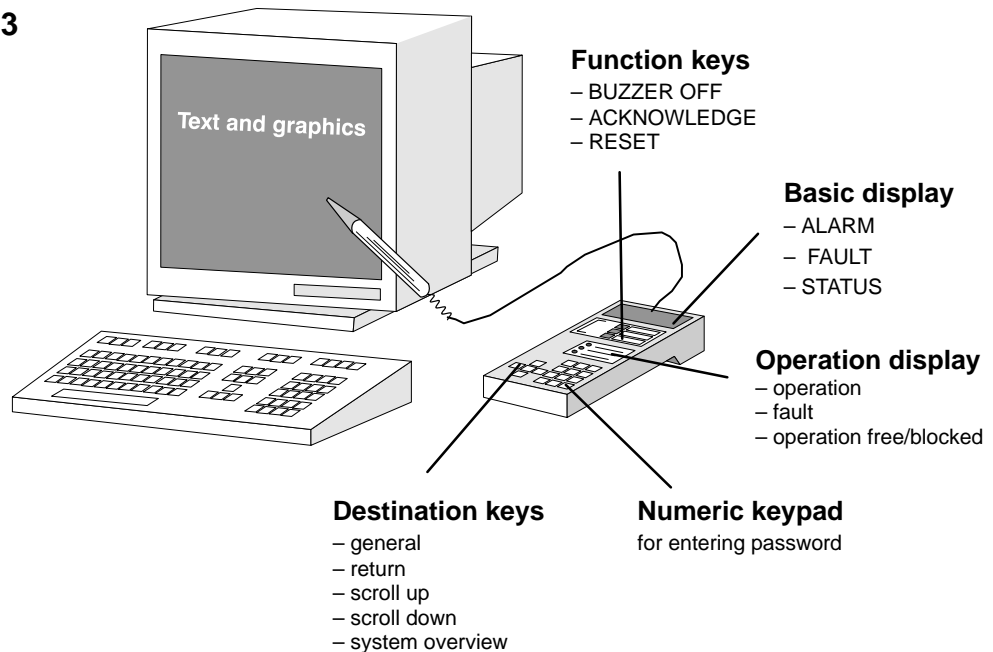
Alarm	Text message is spontaneously displayed (with red background)
others	"New Message" box appears in the Information Field

If operator is using an on-line editor the "New Message" indicator is always used.

System Console MA7003


Functions	All operations listed in "General Functions".	
System Limits	Text display only.	
Display/Operation	Password entry: via keypad Buzzer off: switches off the internal buzzer Acknowledge / Reset: "Alarm" or "Trouble" conditions displayed by flashing LED and internal buzzer. Alarms may only be acknowledged or reset if authorisation mask allocated to the currently active password permits The operation relates to the uppermost message currently displayed on the monitor screen.	
LCD-display	Menu selection via cursor keys. Operating Panel keys operate on data-point referred to by uppermost message currently displayed on the monitor screen.	
status line	The status line is for information purposes only : selection operations via the individual counters are not possible,	
HW-Requirements	Operating Panel Option:	B3Q 260. QUERTY-keyboard.
SW-Configuration	Port and Authorisation Levels Tree-related masking	MASKEDIT Tree Editor SWE100-03
References	Operating Handbook	MA7003 e869a
Notes	none	
Applications	<ul style="list-style-type: none"> ▪ Small systems where text output is sufficiently clear or where the system is passive ie operator intervention only in emergency situations (limited switching ON/OFF of zones/detectors or operating of technical equipment). ▪ Installations where fire-brigade plans are readily available.see "Text Display" 	
Customer Advantages	<ul style="list-style-type: none"> ▪ inexpensive ▪ suitable for wall-mounting 	

System Console MA7033 (or MT7023)



Functions

All operations listed in "General Functions".

System Limits

not applicable

Display/Operation

Password entry: via keypad
 Buzzer off: switches off the internal buzzer
 Acknowledge / Reset: "Alarm" or "Trouble" conditions displayed by flashing LED and internal buzzer.
 Alarms may only be acknowledged or reset if authorisation mask allocated to the currently active password permits.
 The operation always relates to the uppermost message currently displayed on the monitor screen.

monitor

Menu selection using light-pen (or mouse). Each picture is a graphic representation of a part of the site and contains a number of dynamic symbols representing the individual detector elements or zones. These may be selected by "clicking" them with the light-pen (or mouse). A menu is then displayed showing the possible operations in the current context. The operation can then be selected by "clicking" the relevant menu-point on the screen.

HW-Requirements

Operating Panel	B3Q 260
Colour Monitor 15"	B3R 060
Light-pen	B3Q 290
Options:	QUERTY-keyboard (E/F/G) serial mouse

SW-Configuration

Port and Authorisation Levels	MASKEDIT
Tree-related masking	Tree Editor SWE10003

References

Operating Handbook	MA7033	e1081
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Notes

none

Applications

see "Graphic Display"

Customer Advantages

see "Graphic Display"

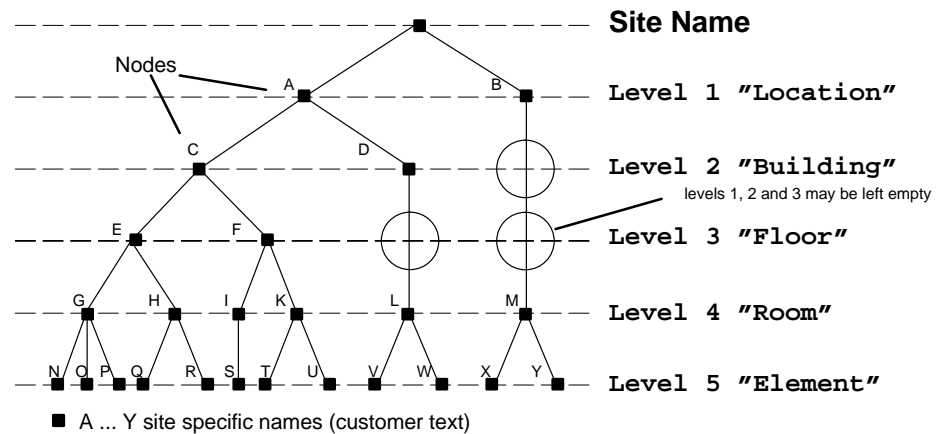
4. DMS7000 Features

Section	Feature	SW-Release
4.1	Tree Structure	
4.2	System Access	
4.3	Masking System	
4.4	Address Types	
4.5	Catalogue of Alarm Causes	
4.6	Intervention Texts	
4.7	System Backup	
4.8	Macro Commands	

Description

All systems must be organised in a tree-like structure. This is built up on the basis of the geographical layout of the site.

All elements which are to be displayed on the monitor screen and either react to changes in their status or be operated on via light-pen etc. **must** be included in the tree.



Functions

The tree structure forms the basis for normal system operation. It determines both flexibility and quality of the system.

site-specific text

The lower line of the message text is put together from the names given during system configuration to the 5 levels of the site-tree (see section "Text Display")

graphic generation

The graphic plans are based on the site-tree. Each plan represents a single node **plus** all subsidiary nodes or elements connected to it. (see section "Graphic Display")

masking

Any branch of the tree (down to individual elements) may be disabled/hidden for a specified terminal/printer port or for a specified user group (Authorisation Level).

global operations

Selected operations may be disabled for specified display/operation levels:
eg. elements may not be switched OFF at level 1, 2 and 3, although they may be switched ON from level 3 (see section "Masking System")

System Limits

see Section 1.4 "Estimating System Capacity"

Display/Operation

Although the tree cannot be displayed directly on the monitor screen, it determines **what** is displayed and controls operator movement. The operator must always move up and down the branches; he cannot skip from one branch to another eg. from node L to M, although he may go directly to the top of the tree (HOME) at any time.

HW-Requirements

The size of the tree (number of data-points etc.) may influence the choice of disk-drive.

SW-Configuration

Tree structure and branch-masking is defined in the Tree Editor (SWE100-03) and documented using the "Node Name Definition" forms.

References

System Terminal MT7000	e1018	User Handbook MT7000 Section 2
Tree Editor SWE100-03	e821	User Handbook MT7000 Section 7

Notes

none

Applications

The tree is used for the following purposes:

- operating on areas of site (room, floor, building etc.) with a single operation
- restricting operation of parts of the installation to particular user groups
- restricting operation of parts of the installation to specified terminals

Customer Advantages

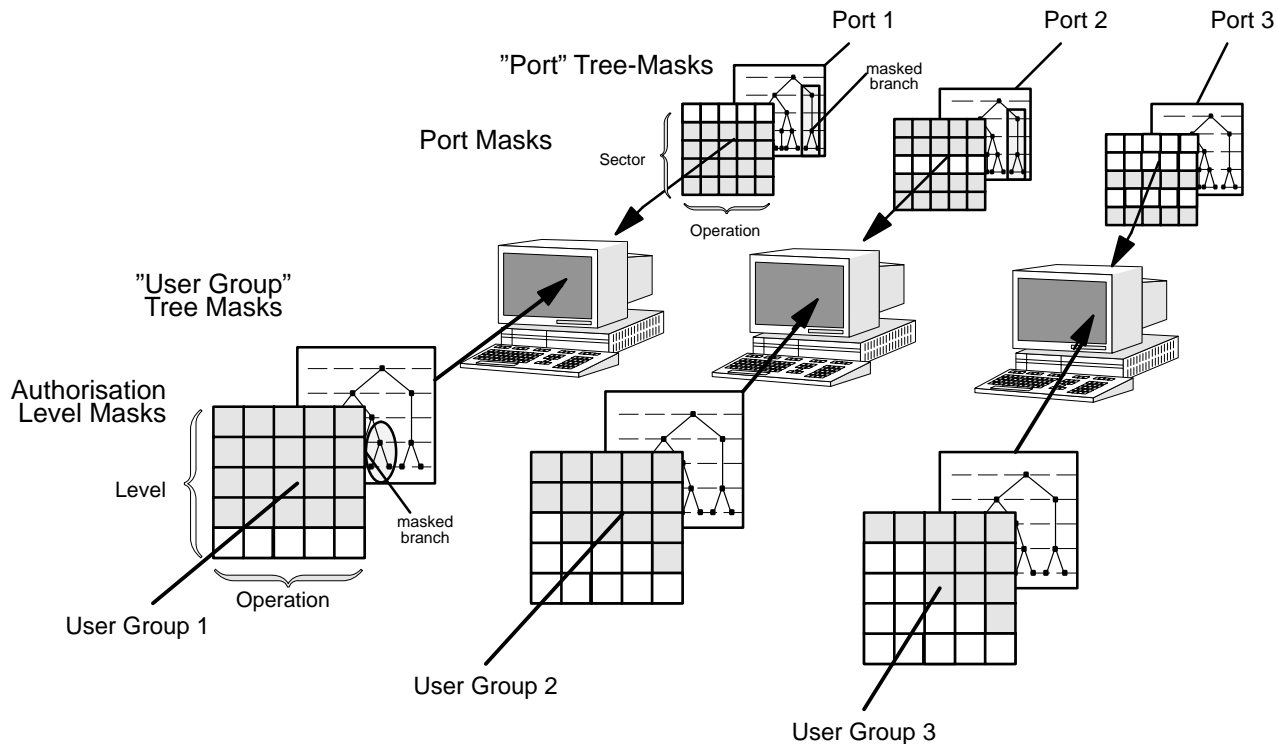
The site may be split into manageably sized parts.

Description	System access is controlled in two ways: a. by key switches on the consoles b. by a password system										
Functions	<p>Key switches:</p> <ul style="list-style-type: none"> ▪ operation is disabled when key is removed ▪ screen either dark or in display mode only (programmable in local terminal editor) ▪ additional key switch on MA7033 (or MT7023) cuts off 5V power supply for service purposes <p>Password Access On entering his personal password on the console or terminal keyboard a user is granted access to a range of operations specified in the Authorisation Level Mask.</p> <p>Password-timeout If no operations are performed at the terminal during a specified "timeout-period" the identifier in the password box is removed from the screen and the password must be re-entered.</p>										
System limits	<p>Passwords:</p> <table border="0"> <tr> <td>max. number of passwords</td> <td style="text-align: right;">32</td> </tr> </table> <p>A password consists of a 2-figure index number (01 .. 32) followed by personal code:</p> <table border="0"> <tr> <td>personal code</td> <td style="text-align: right;">min. 4 numerals (0 .. 9)</td> </tr> <tr> <td></td> <td style="text-align: right;">max.8 numerals (0 .. 9)</td> </tr> </table> <p>User-groups</p> <table border="0"> <tr> <td>max. number of Authorisation Levels</td> <td style="text-align: right;">15</td> </tr> </table> <p>Password-timeout</p> <table border="0"> <tr> <td>specified in local system editor</td> <td style="text-align: right;">max.12 hours</td> </tr> </table>	max. number of passwords	32	personal code	min. 4 numerals (0 .. 9)		max.8 numerals (0 .. 9)	max. number of Authorisation Levels	15	specified in local system editor	max.12 hours
max. number of passwords	32										
personal code	min. 4 numerals (0 .. 9)										
	max.8 numerals (0 .. 9)										
max. number of Authorisation Levels	15										
specified in local system editor	max.12 hours										
Display/Operation	<p>A 4-character identifier is allocated to each password holder. On password entry the relevant identifier is displayed in the bottom right-hand corner of the monitor screen until either the password-timeout elapses or the user "logs out" by hitting the <Enter> key.</p> <p>All users may modify their own password. This procedure may be started by selecting the editor menu option "Modify password" or, on an MA7033/MT7023, by "clicking" the key symbol with the light-pen or mouse.</p>										
HW-Requirements	none										
SW-Configuration	User profiles are defined in MASKEDIT. Password allocation is carried out in the Password Editor PWEDIT.										
References	<ul style="list-style-type: none"> ▪ System Terminal MT7000 e1018 User Handbook MT7000 Section 2 ▪ Tree Editor SWE100-03 e821 User Handbook MT7000 Section 7 										
Notes	none										
Applications	system security										
Customer Advantages	<ul style="list-style-type: none"> ▪ Tailored operation profile for each category of users ▪ Security provided by individual password allocation. 										

Description

Operation may be tailored to customer requirements by specifying the following:

- what is available at each terminal-port
- what operations a user-group may perform
 - on what **parts** of the site-tree
 - in which sectors
 - at what **levels** in the site-tree



Functions

The following sets of masks are available:

Port Masks

A set of permissible operations may be defined for each terminal-port:

- **sector dependent** operations may be specified for all danger sectors (Fire, Extinguishing, Intrusion etc)
- **level dependent** operations may be specified for all tree-levels (Location, Building, Floor etc.)

It is recommended that only selected sectors (eg. Fire, Intrusion, Technical Surveillance) be hidden from specified terminal ports.

Authorisation Level Masks

A set of permissible operations may be defined for each user-group:

- **sector dependent** operations may be specified for all danger sectors (Fire, Extinguishing, Intrusion etc)
- **level dependent** operations may be specified for all tree-levels (Location, Building, Floor etc.)

Tree-related Masks

Any branch of the tree (down to individual elements) may be disabled/hidden for a specified terminal-port or for a specified user group.

- "Port" Tree-Masks may be visualised as being on the processor side of the terminal port and behind the Port Masks.
- "User-Group" Tree-Masks may be visualised as being carried by the user and behind the Authorisation Level Masks.


System Limits

not applicable

Display/Operation	<p>The masks are treated like a stack of punched cards held up to the light, where light may only pass through at points where every card has a hole: similarly an operation is only available when it is not disabled on any of the masks. Operations which are excluded from a particular terminal-port cannot be accessed by any user-group at that terminal even with the highest Authorisation Level.</p> <p>The Operate Menu presented to a user contains only those operations which he is permitted to use. If he selects an object upon which he is not allowed to operate then the key symbol flashes, indicating that a password with a higher Authorisation Level is required.</p>									
HW-Requirements	not applicable									
SW-Configuration	Port Mask	MASKEDIT								
	User-Group Mask	MASKEDIT								
	Tree-related Masks	Tree Editor SWE100-03								
References	System Terminal MT7000	e1018 User Handbook MT7000 Section 2								
	Tree Editor SWE100-03	e821 User Handbook MT7000 Section 7								
Notes	<p>The mask editors have a set of default parameters, which allows a standard system to be configured quickly and reliably. Careful consideration should be given before modifying these default values to meet customer requirements.</p> <p>The following strategy is strongly recommended:</p> <p>Port Masks</p> <table border="0"> <tr> <td>sector-dependent mask</td> <td>all operations enabled for required sectors only</td> </tr> <tr> <td>level-dependent mask</td> <td>all operations enabled at all levels</td> </tr> </table> <p>Authorisation Level Masks</p> <table border="0"> <tr> <td>sector-dependent mask</td> <td>selected operations enabled for selected sectors</td> </tr> <tr> <td>level-dependent mask</td> <td>selected operations enabled at selected levels</td> </tr> </table>		sector-dependent mask	all operations enabled for required sectors only	level-dependent mask	all operations enabled at all levels	sector-dependent mask	selected operations enabled for selected sectors	level-dependent mask	selected operations enabled at selected levels
sector-dependent mask	all operations enabled for required sectors only									
level-dependent mask	all operations enabled at all levels									
sector-dependent mask	selected operations enabled for selected sectors									
level-dependent mask	selected operations enabled at selected levels									
Applications	<ul style="list-style-type: none"> ▪ Sectors "FIRE" and "INTRUSION" only accessible on dedicated terminal-ports. ▪ User operation tailored according to their specific requirements 									
Customer Advantages	This powerful and extremely flexible masking system permits a system to be precisely tailored to customer requirements.									

Description	An Address Type may be allocated to each element (detector, contact etc). These address types can then be used as "search paths" to locate groups of elements for collective operations.
Functions	The eight Address Types have pre-defined names (General, Organisation, Remote Transmission, Lock-Up Check.. etc). All of these except the "General" type may be redefined according to customer requirements. The allocation of Address Types is optional and may be completely omitted or used for particular elements only.
System Limits	No. of freely definable address types: 7
Display/Operation	The address types are presented on the right-hand half of the Summary Overview. The operator must first pre-select a particular address type with the light-pen (or mouse). He may then progress through the site-tree in the normal way, however only those elements of the selected address type will be seen. According to the tree-structure and his authorisation level he will then be able to carry out the required operation on a number of elements with a single command.
HW-Requirements	none
SW-Configuration	Allocation of Address Types and editing of the type names themselves is carried out in the Tree Editor SWE100-03.
References	Tree Editor SWE100-03 e821 User Handbook MT7000 Section 7
Notes	none
Applications	Global switching of "organisation" from DAY -> NIGHT or vice versa.
Customer Advantages	<ul style="list-style-type: none">▪ simplified selection of element-families▪ customer definable names

Description	When resetting an Alarm the operator can enter the cause of the alarm, selected from a pre-defined catalogue of possible causes. This information is stored together with the alarm message itself and may be used for analysis purposes at a later date (see History Printout).
Functions	This is an optional feature which must be activated on each system console (local system editor) as required.
System Limits	Standard set of alarm causes: <ul style="list-style-type: none">- genuine alarm- deceptive alarm- malfunction alarm- operator error alarm- false activation- nuisance alarm This list is stored in the "standard-text" file <site-name>.F0x (where x = language code).
Display/Operation	When resetting an Alarm at the system console, the operator will be presented with the catalogue of alarm causes . He must then either select the appropriate cause with the light-pen (or mouse) or if the cause is not known he must select not definable . Only then will the alarm be reset.
HW-Requirements	none
SW-Configuration	Activated in local system editor of MA70xx.
References	Operating Guide MA7003 e969a User Handbook MT7000 Section 6 Operating Guide MA7033 e1081 User Handbook MT7000 Section 6
Notes	As this catalogue of alarm causes is stored in a text file on the site-disk it is possible to modify it using a normal text editor. However it should be remembered that during a System Upgrade this file will be replaced with the new standard text file and these modifications will be lost.
Applications	Analysis of system operation to determine the frequency of particular alarm causes.
Customer Advantages	Provides a source of information for system management purposes: <ul style="list-style-type: none">▪ service requirements▪ detector reliability▪ detector suitability

Description	A freely definable text may be assigned to any event. When this event occurs the associated text is printed out on the specified printer(s).
Functions	<p>The specified Intervention Text can be printed in one (or more) of the following cases:</p> <ul style="list-style-type: none">▪ ALARM▪ TROUBLE▪ STATUS <p>In systems with DAY/NIGHT organisation this may also be specified as an additional criterion.</p>
System Limits	<ul style="list-style-type: none">▪ max length of Intervention Text 10 lines of 70 characters each▪ each Intervention Text requires 750 Bytes of RAM and 750 Bytes of disk-space.
Display/Operation	If a data point (or node) has an Intervention Text allocated to it, then the symbol  is displayed by the side of the message. The text may be displayed by "clicking" this symbol with the light-pen (or mouse).
HW-Requirements	Printer connected to one of the MC70xx printer-ports (or to an MA70xx).
SW-Configuration	<ul style="list-style-type: none">▪ Printer-Port(s) for Intervention Text logging are defined in SYSEDIT (Port Definitions)▪ port enabled for Intervention Orders in Form 2 of MASKEDIT (Port-Mask).▪ text specified in Tree Editor▪ allocation to event type (when text should be printed) is specified in Tree Editor▪ presence of Intervention Text is documented on the "Node Name Definitions" form
References	<ul style="list-style-type: none">▪ System Terminal MT7000 e1018 User Manual MT7000 Section 4▪ Operating Guide MA7013 e960 User Manual MT7000 Section 6
Notes	If a data point does not have an Intervention Text directly allocated to it, then the text from the next higher node in the tree will be printed. This search procedure is continued until either an Intervention Text is encountered or the top level of the tree is reached (only one Intervention Text is printed).
Applications	Intervention orders provide assistance to the operating personnel in emergency operations. They may contain the telephone numbers of organisations to be alerted or detailed intervention procedures (or warning messages) for the fire brigade etc.
Customer Advantages	<ul style="list-style-type: none">▪ quick and reliable reaction of operator personnel in emergency situations▪ avoids extensive training programs etc.▪ operator interchangeability without risk.

Description	A backup copy of the system disk may be created at any time. This procedure runs in a background mode and has no effect on normal system operation.
Functions	The backup operation was specifically designed for hard-disk systems (as formerly a backup copy could only be created by a service technician with supplementary special-purpose hardware). The backup function may also be used for systems with floppy-disk drives in systems where all system data is contained on a single disk. The backup procedure copies all files from disk-drive 0 to disk-drive 1 (if there is no history disk in the configuration) or to disk-drive 3 (if there is a history disk).
System Limits	All site-specific system data-files must be present on disk-drive 0 (otherwise a complete backup is not possible).
Display/Operation	The backup procedure may be started from the Editor menu. A menu-screen keeps the user informed about progress and reports the successful completion of the backup operation. On an MA7033/MT7023, this menu-screen may be closed to continue normal operation and be re-opened at any time simply by "clicking" the screen-closer symbol in the status-line.
HW-Requirements	The destination disk-drive must be of the same type as the system disk-drive.
SW-Configuration	The backup function must be specified in SYSEEDIT. Access to the backup function must be granted to the relevant user-groups in form 7 of MASKEDIT.
References	System Terminal MT7000 e1018 User Handbook MT7000 Section 2
Notes	A backup should be performed at regular intervals and immediately following any extensive text-modifications etc. The system is so configured that it always looks for the start-up files (AUTOBOOT.SYS etc.) on disk-drive 0. If the system is equipped with hard-disk drives (system disk and backup disk) the hardware address-programming must be corrected when (in an emergency) the backup-disk should be used as the new system-disk.
Applications	see below
Customer Advantages	<ul style="list-style-type: none">▪ Problems with the site-disk (or its disk drive) may be quickly corrected.▪ No loss of critical data.▪ No PC required to create backup disks.

Description	A Macro Command is a freely definable set of standard DMS7000 operator commands, which may be initiated by a single operation.						
Functions	Macros may be defined by the operator himself or by his supervisor in an on-line editor. These Macros may subsequently be used like normal DMS7000 commands.						
System Limits	<table><tr><td>Max. no. of Macro Commands</td><td>512</td></tr><tr><td>Max. no. of command-lines per Macro</td><td>limited only by available RAM</td></tr><tr><td>Max. no. of characters in Macro name</td><td>30</td></tr></table>	Max. no. of Macro Commands	512	Max. no. of command-lines per Macro	limited only by available RAM	Max. no. of characters in Macro name	30
Max. no. of Macro Commands	512						
Max. no. of command-lines per Macro	limited only by available RAM						
Max. no. of characters in Macro name	30						
Display/Operation							
defining Macro's	The operator (or supervisor) must first select Macro Editor with the light-pen (or mouse) from the Editor Screen. This on-line editor allows him to either edit an existing macro or define a new one. For a new Macro, he must specify a 4-digit code number and (optionally) give the Macro a name. He can then proceed to put together a series of DMS7000 commands either by defining the technical addresses of the elements he wants to operate on or by defining the path through the site-tree (in a similar manner to the History Editor).						
using pre-defined Macro's	A Macro may be selected in one of two ways: <ol style="list-style-type: none">On selecting Macro from the Operating Field, the operator is presented with a list of available Macro Commands – both the 4-digit code and the macro name are displayed. He may then select the required Macro with the light-pen (or mouse).He may choose to type in the 4-digit code directly without consulting the list first.						
HW-Requirements	none						
SW-Configuration	<ul style="list-style-type: none">The Macro Editor is called from the editor screen and the required Authorisation Level must be specified in MASKEDIT (Form 7).The ability to display the list of available Macro's (default = enabled) is specified in the Frame Change Mask of MASKEDIT (Form 6).						
References	ONLINE Editor e870a						
Notes	An operator may only use those Macros containing commands which he would normally be able to carry out (ie. for which his Authorisation Level is sufficient). On calling up the Macro menu he is presented only with those macros which are available to him. This mask-check on all commands contained in the Macros is only performed during a system restart!						
Applications	In a security system such as a bank, it is often necessary to be able to switch pre-determined "sets" of detectors ON or OFF as the situation demands. Macro Commands allow this to be done quickly and easily without errors.						
Customer Advantages	<ul style="list-style-type: none">powerful, flexible tool for simplifying complex switching routineserror-free operation of standard procedurespre-defined operation sequences reduce operator-training requirements						

5. Logging

Section	Feature	SW-Release
5.1	Event Logging	
5.2	Intervention Orders	
5.3	History Printout	
5.4	Status Printout	

Description	All events (status changes) are automatically printed as they occur, together with the time of their occurrence
Functions	<p>The types of event (messages) to be included in the log can be selected from the following:</p> <ul style="list-style-type: none">▪ ALARM▪ TROUBLE▪ WARNING▪ ACTIVE▪ STATUS▪ OFF▪ TEST▪ DRIFT
System Limits	not applicable
Display/Operation	If any events are selected to be logged on an MA70xx terminal printer, then <u>all</u> messages will be automatically displayed on the corresponding monitor.
HW-Requirements	Printer connected to one of the MC70xx printer-ports (or to an MA70xx).
SW-Configuration	<ul style="list-style-type: none">▪ Printer-Port defined in SYSEDIT.▪ Types of message to be printed are specified in Form 2 of MASKEDIT (Port-Mask).
References	<ul style="list-style-type: none">▪ System Terminal MT7000 e1018 User Manual MT7000 Section 4
Notes	none
Applications	Log book for daily site operation.
Customer Advantages	The log book function can be a useful control organ in a large organisation (or in sensitive security environments) and may be specifically required by the fire authorities in certain countries.

Description	An Intervention Text may be assigned to a particular event or range of events (i.e. at a higher level in the site-tree). On the occurrence of such an event the relevant Intervention Text will be printed out on the specified printer(s). This text normally contains specific instructions for the Operator, Service Personnel or the Fire Department etc.
Functions	<p>The specified Intervention Text can be printed in one (or more) of the following cases:</p> <ul style="list-style-type: none">▪ ALARM▪ TROUBLE▪ STATUS <p>In systems with DAY/NIGHT organisation this may also be specified as an additional criterion.</p>
System Limits	<ul style="list-style-type: none">▪ max length of Intervention Text 10 lines of 70 characters each▪ each Intervention Text requires 750 Bytes of RAM and 750 Bytes of disk-space.
Display/Operation	Printout occurs automatically. See Section 4.5 (Intervention Texts) for Display etc.
HW-Requirements	Printer connected to one of the MC70xx printer-ports (or to an MA70xx).
SW-Configuration	See Section 4.5 (Intervention Texts).
References	<ul style="list-style-type: none">▪ System Terminal MT7000 e1018 User Manual MT7000 Section 4▪ Operating Guide MA7013 e960 User Manual MT7000 Section 6
Notes	If a data point does not have an Intervention Text directly allocated to it, then the text from the next higher node in the tree will be printed. This search procedure is continued until either an Intervention Text is encountered or the top level of the tree is reached (only one Intervention Text is printed).
Applications	Intervention orders provide assistance to the operating personnel in emergency operations. They may contain the telephone numbers of organisations to be alerted or detailed intervention procedures (or warning messages) for the fire brigade etc.
Customer Advantages	<ul style="list-style-type: none">▪ quick and reliable reaction of operator personnel in emergency situations▪ avoids extensive training programs etc.▪ operator interchangeability without risk.

Description	<p>All event data is stored chronologically in RAM or on disk (option) At any time, a printout can be requested for a specified period of time, a specific type of event or a particular section of the site.</p> <p>There are two possible ways of requesting a history log:</p> <ul style="list-style-type: none">▪ via History Printout in operating field of standard screen▪ via History Editor on the editor screen								
Functions	<p>Standard features via History Printout in Operating Field:</p> <table><thead><tr><th>Time Period</th><th>Event Type</th></tr></thead><tbody><tr><td><ul style="list-style-type: none">▪ since midnight▪ last 2 hours▪ last 24 hours▪ shift log▪ all stored events</td><td><ul style="list-style-type: none">▪ ALARM▪ TROUBLE▪ WARNING▪ ACTIVE▪ OFF▪ TEST</td></tr></tbody></table> <p>Additional features available with History Editor:</p> <table><thead><tr><th>Time Period</th><th>Event Type</th></tr></thead><tbody><tr><td><ul style="list-style-type: none">▪ selected time span: from "time A" to "time B"▪ a particular day▪ display on monitor instead of printout</td><td><ul style="list-style-type: none">▪ address type▪ alarm cause▪ selected path (branch of site-tree)▪ sector</td></tr></tbody></table>	Time Period	Event Type	<ul style="list-style-type: none">▪ since midnight▪ last 2 hours▪ last 24 hours▪ shift log▪ all stored events	<ul style="list-style-type: none">▪ ALARM▪ TROUBLE▪ WARNING▪ ACTIVE▪ OFF▪ TEST	Time Period	Event Type	<ul style="list-style-type: none">▪ selected time span: from "time A" to "time B"▪ a particular day▪ display on monitor instead of printout	<ul style="list-style-type: none">▪ address type▪ alarm cause▪ selected path (branch of site-tree)▪ sector
Time Period	Event Type								
<ul style="list-style-type: none">▪ since midnight▪ last 2 hours▪ last 24 hours▪ shift log▪ all stored events	<ul style="list-style-type: none">▪ ALARM▪ TROUBLE▪ WARNING▪ ACTIVE▪ OFF▪ TEST								
Time Period	Event Type								
<ul style="list-style-type: none">▪ selected time span: from "time A" to "time B"▪ a particular day▪ display on monitor instead of printout	<ul style="list-style-type: none">▪ address type▪ alarm cause▪ selected path (branch of site-tree)▪ sector								
System Limits	<p>Up to approx 2000 events are stored in RAM (FIFO principle). If more events should be stored, an additional floppy-drive can be installed. The events are then periodically copied to the diskette in blocks of 10 (max. capacity of HD-disk= 56,000 events).</p>								
Display/Operation	<p>The history log may also be displayed on the monitor screen (History Editor).</p>								
HW-Requirements	<ul style="list-style-type: none">▪ Printer connected to the MA70xx printer-interface▪ Option: History disk drive								
SW-Configuration	<ul style="list-style-type: none">▪ History disk drive specified in SYSEDIT▪ access to History Editor specified in Form 7 of MASKEDIT (Port/Access Level)								
References	<ul style="list-style-type: none">▪ System Terminal MT7000 e1018 MT7000 Handbook Section 4▪ Operating Guide MA7013 e960 MT7000 Handbook Section 6								
Notes	<p>The history disk may only be analysed on the site hardware. This is because the messages are not stored as text strings, but contain references to the site tree-files.</p>								
Applications	<ul style="list-style-type: none">▪ Hard-copy reports at the end of operator shifts▪ fault localisation (Trouble messages in a particular area over a specified period of time)▪ site statistics								
Customer Advantages	<ul style="list-style-type: none">▪ highly flexible on-line editor▪ large number of stored events permits extensive data-analyses over long time-periods								

Description	A printout of the current status of a specified site-section may be requested at any time.
Functions	The extent of the Status Printout can be limited as follows: <ul style="list-style-type: none">▪ select required section of site-tree▪ select Status Printout from Operating Field of standard screen▪ status of all data points <u>below</u> level indicated in Information Field will be printed
System Limits	not applicable
Display/Operation	Selection via Status Printout in Operating Field of standard screen.
HW-Requirements	Printer connected to MA70xx printer-interface.
SW-Configuration	<ul style="list-style-type: none">▪ Standard function▪ no configuration required
References	Operating Guide MA7013 e960 MT7000 Handbook Section 6
Notes	Care should be taken to limit the range of a Status Printout (as described above): starting the printout from the uppermost level can waste a lot of paper unnecessarily.
Applications	Site procedure may require hard-copy confirmation of the system status at the end of operator shifts or after certain parts of the system have been temporarily switched off for welding work etc.
Customer Advantages	easy to use status-logging utility

6. Networks/Communication

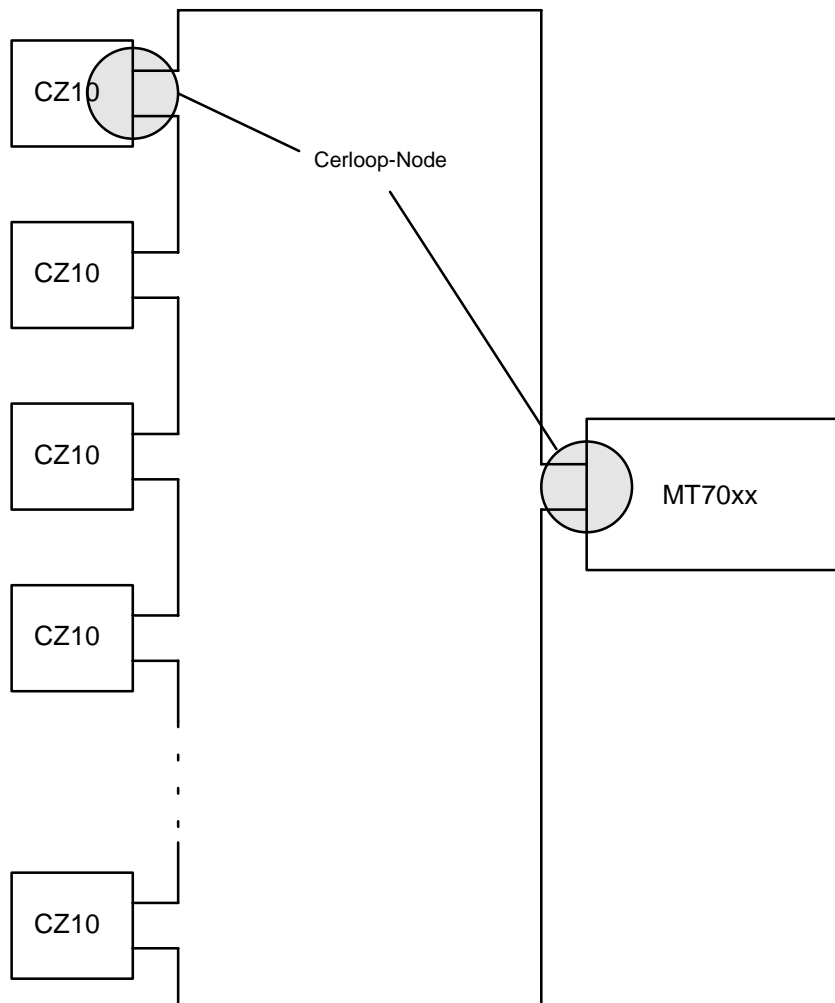
Section	Feature	SW-Release
6.1	Standard Network Configurations	
6.2	System Redundancy	
6.3	Interface to non-Cerberus Acquisition Equipment	
6.4	Gateway to non-Cerberus Evaluation Equipment	

Description

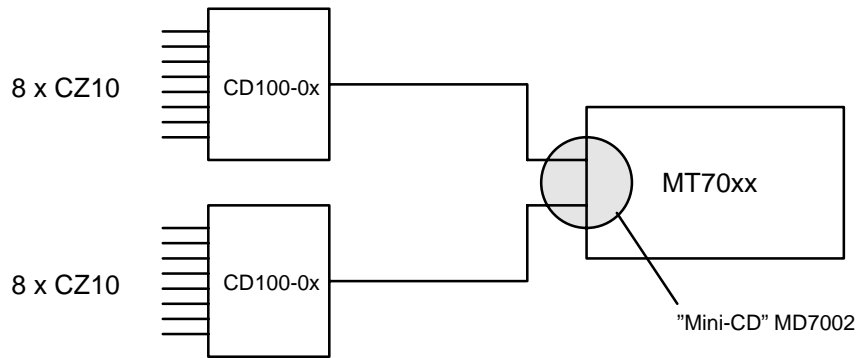
Two types of network are provided by Cerberus AG which allow an optimal configuration to be realised for all site-topographies:

- CERLOOP for loop configurations
- CERBAN for star configurations

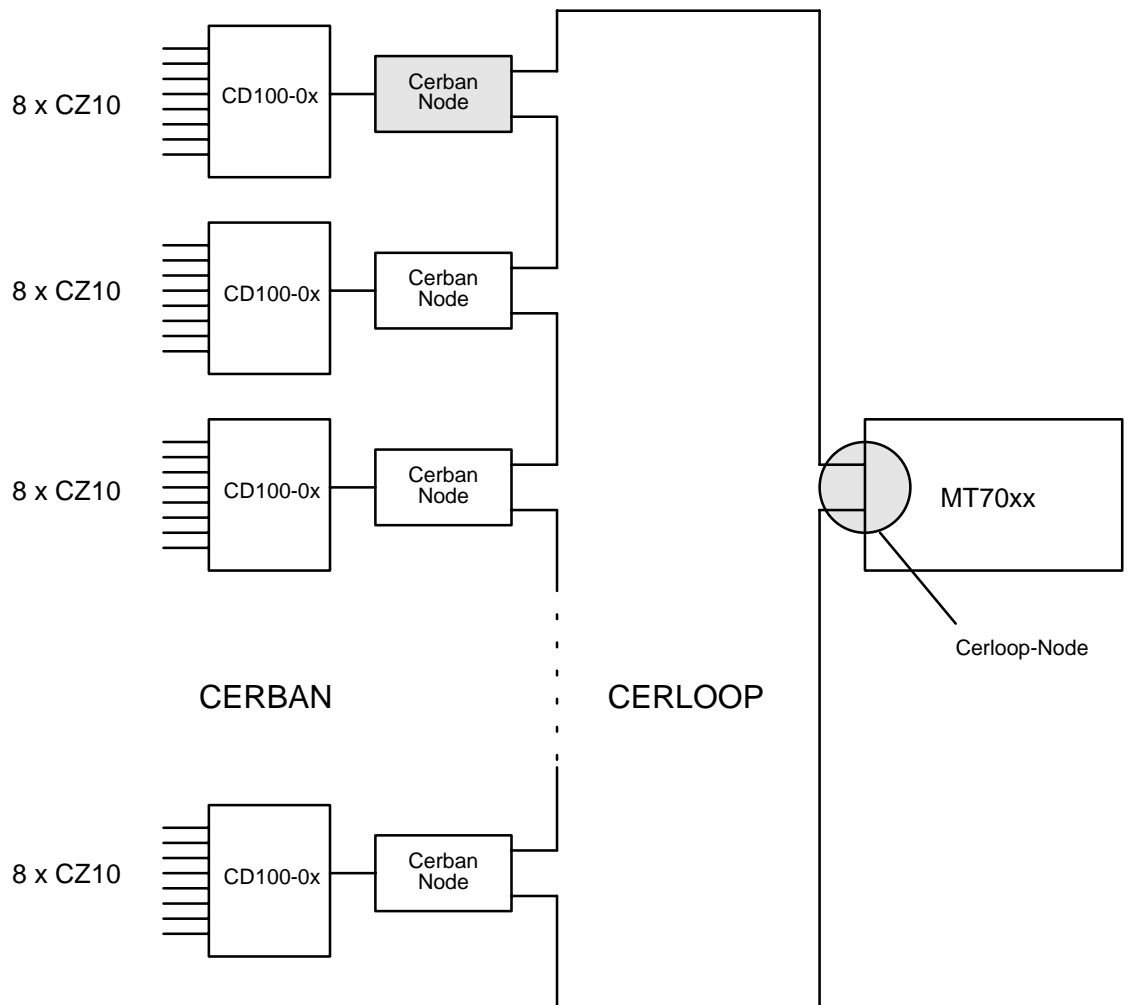
Standard CERLOOP-Network



Standard CERBAN-Network (max. configuration)



Mixed CERBAN / CERLOOP Network



Functions	not applicable		
System Limits			
standard CERLOOP	max number of control units	64	
	Baud rate	2400 Baud	
standard CERBAN	max number of control units	16	
	Baud rate	600 Baud	(300 for older control unit)
mixed CERBAN/CERLOOP	max number of control units	64	
	Baud rate CERBAN section	600 Baud	(300 for older control unit)
	Baud rate CERLOOP section	2400 Baud	
Display/Operation	<ul style="list-style-type: none"> ▪ no display ▪ operation automatic 		
HW-Requirements			
Cerban-Node	communication unit	K1H060	
	modem	K1D081	
		K1D121	
Cerloop-Node	communication unit	E1H130	in MT70xx
		K1H021	in control units
	modem	K1D081	
		K1D121	
"Mini-CD" MD7002	communication unit	E1H121	
	modem	K1D081	
		K1D121	
wiring	PSK/FSK	2-wire twisted-pair	
	V28	2 x 2-wire twisted-pair	
SW-Configuration	not applicable		
References	System Standard	AH 0.1	Section 3
Notes	none		
Applications	not applicable		
Customer Advantages	<ul style="list-style-type: none"> ▪ optimal configuration for site-topography 		

Description	System redundancy can be built into a DMS7000 system in a number of ways:
network	The data-handling procedure employed in CERLOOP permits the loop to be cut in any one place with no reduction in network functionality
hot standby	Two (or more) MT70xx's may be connected into a CERLOOP network with exactly the same site-tree and mask-configurations. There is no hierarchy-organisation between these units and operation may be performed from either; if one unit fails the other may be used without interruption and with no loss of data.
control unit autonomy	All control units (CZ10/CZ12/CZ4 etc) are designed as stand-alone equipment which are able to fulfill all functions even when the network to the supervisory command station is interrupted. Remote transmission of Alarms to the relevant emergency services (fire brigade, police etc.) is normally activated directly from the control units themselves.
emergency power supply	The battery power supply (a standard feature in all equipment) ensures non-interruptible power to all processing units for a time-duration specified during the project design phase (eg. from 12 to 48 hours).
Functions	not applicable
System Limits	not applicable
Display/Operation	not applicable
HW-Requirements	not applicable
SW-Configuration	not applicable
References	none
Notes	none
Applications	see below
Customer Advantages	<ul style="list-style-type: none">▪ high system availability▪ resistance against technical breakdowns or malicious attacks

Description

individual I/O's

Integration of non-Cerberus equipment may be realised in the following ways:

via CZ10 etc.

normal inputs or control outputs of a satellite control-unit (Sector E) may be used to interface with individual sensors or actors of a "foreign" system.

large numbers of I/O

via MM7033

the emulation functions contained in this autonomous MUX/DMUX control unit (built in a standard 19" rack) allows complete integration of incoming signals into the Cerberus concept.

Functions

CZ10

Potential-free input connections and output relay contacts.

MM7033

see "MF/MM7000 Summary"

System Limits

CZ10

- max. number of elements 96

MM7033

- full PLC-functionality (see Summary MF/MM7000)
- sum of all inputs/outputs 576 (max. 12 MUX/DMUX units)
- system capacity: 20,000 load factors (see PLC-Function Handbook)

Display/Operation

- no display
- operation automatic

HW-Requirements

CZ10

- relay board

MM7033

A complete MM7033 is contained a 19" enclosure and comprises the following units:

- MPU-board E2H081
- comm.unit E1H130
- modem K1D081
- 1..12 MUX-boards E2A041
- 1..12 DMUX-boards E2A032

Options:

- relay board B1G040 (48 relays max. 30V_{DC}/100mA)
- line supervision B1G030 (12 lines → 24 MUX-inputs)

SW-Configuration

CZ10

- CZ10-connection standard programming procedure in CZ10
- DMS7000 Tree Editor SWE100-03

MM7033

- Table Editor SWE700FT
- Logic Editor (not yet available)

References

- Equipment Description e988 System Handbook MF/MM7000
- PLC-Function Handbook e999 System Handbook MF/MM7000

Notes

none

Applications

see below

Customer Advantages

MM7033

- process image based devices ensure correct intervention under all conditions
- PLC-applications may be realised within the DMS-family
- no special adaptations to PLC's from other suppliers
- all engineering controlled by a single supplier
- no problems with responsibility (when trouble-shooting etc.)
- extremely flexible programming tailored to DMS-requirements
- Integrated MF/MM-software is included in purchase price of MC70xx.

Description	The Gateway MK7022 allows "foreign" control systems to be connected into a Cerberus network (CERBAN/CERLOOP).
Functions	<p>The telegram traffic through the Gateway is controlled by a communications processor, while the site-specific "filter" is stored in an on-board EPROM containing the following information.</p> <ul style="list-style-type: none">▪ permitted messages from Cerberus network —> "foreign" system▪ permitted commands from "foreign" system —> Cerberus network
System Limits	not applicable
Display/Operation	<ul style="list-style-type: none">▪ no display▪ operation automatic
HW-Requirements	<p>The MK7022 consists of the following pcb's:</p> <ul style="list-style-type: none">▪ comm. unit K1H021▪ modem K1D012
SW-Configuration	A SW-Tool for the configuration of the EPROM "filter" is not yet available. This task can currently be performed only at the Cerberus Head Office in Männedorf, Switzerland.
References	Handbook CK100-22
Notes	none
Applications	see below
Customer Advantages	<ul style="list-style-type: none">▪ communication with existing equipment

7. Multiplexer/Demultiplexer

Section	Feature	SW-Release
7.1	General Description	
7.2	Sub-Unit MF7013	
7.3	Sub-Unit MF7023	
7.4	Command Unit MF7033	
7.5	Control Unit MM7033	

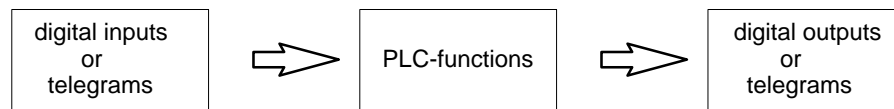
Description

The MF/MM-7000 devices are a family of programmable MUX/DMUX units which are used to provide automatic intervention on the occurrence of defined events.

Events: - incoming telegrams via CERBAN/CERLOOP
- change of state of MUX-inputs
Processing: - PLC-functions (logic, timers etc)
- emulation of standard security procedures
Intervention: - transmission of telegrams to other members of network
- activation of DMUX-outputs

In addition to the general PLC functions, a number of functions have also been developed specifically tailored to the requirements of a Danger Management System.

The MF70xx types are command units (or parts thereof) situated in the evaluation level. The MM7033 is a control unit situated in the acquisition level.



Process Image

An important feature is that a process image is built up from the programmed data and kept "à jour" by interpreting the telegrams arriving via the CERBAN/CERLOOP network. Thus the status of all data points to be handled by these units is always known, allowing the initiated actions to be based on the current situation and not purely on the information contained in the incoming telegrams. To achieve this with an ordinary PLC would require a considerable programming effort.

Program

The program consists of a list of conditions which must be fulfilled on the activation of MUX-inputs or by incoming telegrams (based on the current state of the process image), together with the subsequent actions which must be started when these conditions are met. Either local MUX-Outputs may be activated (impulse or continuous) or user-defined telegrams may be transmitted to particular control units.

During normal operation all incoming telegrams are analysed, the process image is up-dated and the data is checked against the list of conditions. When an agreement is found, the specified action will be instigated.

PLC-Functions

Logic functions:

EQUAL
NOT
AND
OR
EXOR
LATCH

Counter and timer functions:

COUNT
WAIT
DELAY
TOUT
TIM
TSW

MF7000-Elements

A number of standard elements have been created to handle incoming telegrams, to facilitate the programming of these conditions and prepare outgoing telegrams.

The input telegram handling routines offer the following features:

- output active as long as pre-defined condition is fulfilled
- special conditions: type of alarm + type of detector
- special conditions: type of message (OFF, TEST, ACTIVE, TROUBLE, etc.)
- variant conceived for VOICE-applications
- telegram interpretation (not process image based)
- surveillance of communication link to specified control units
- simulation of Cerberus Alarm Concept (Timer V1 and V2)

The output telegram handling routines are used for transmitting specific telegrams to other units connected to the network.

MM7033-Elements

A number of standard elements have been developed which emulate the behaviour of a CZ10 or CZ12 by copying the telegram traffic with the DMS7000. In this way non-Cerberus control units can be fully integrated into a Cerberus system. These elements include the handling of fire prevention/intrusion/technical surveillance elements with or without monitored lines.

Notes

The PLC-functions are available in all MC700xx command units and may be utilised in telegram-IN/telegram-OUT applications with no MUX/DMUX-hardware present.

Customer Advantages

- process image based devices ensure correct intervention under all conditions
- PLC-applications may be realised within the DMS-family
- no special adaptations to PLC's from other suppliers
- all engineering controlled by a single supplier
- no problems with responsibility (when trouble-shooting etc.)
- extremely flexible programming tailored to DMS-requirements

Description	The MF7013 is built into an MC70xx and uses the processor/memory etc. of this unit.
Functions	see General Description.
System Limits	<ul style="list-style-type: none">▪ in MC7003, MC7033: max. 24 DMUX-outputs▪ in MT7023: max. 6 DMUX-outputs▪ no digital inputs possible▪ full PLC-functionality (see Summary MF/MM-7000)▪ system capacity: 10,000 load factors (see PLC-Function Handbook)
Display/Operation	No VDU-display.
HW-Requirements	<p>MC7003, MC7033: max. 24 relay outputs (max. 30V_{DC}/100mA)</p> <ul style="list-style-type: none">a. 1 x K1G011 Relay Card with 6 relays (controlled by MPU-port of E2H081)b. 3 x K1G 011 Relay Card with 6 relays (controlled by additional E1H040 PIA-Unit) <p>MT7023: max. 6 relay outputs (max. 30V_{DC}/100mA)</p> <ul style="list-style-type: none">a. 1 x K1G011 Relay Card with 6 relays (controlled by MPU-port of E2H081)
SW-Configuration	<ul style="list-style-type: none">▪ Table Editor SWE700FT▪ Logic Editor not yet available
References	<ul style="list-style-type: none">▪ Equipment Description MF7033 Doc.No. e987▪ PLC-Function Handbook Doc.No. e999
Notes	Until the Editors become available, the equipment programs may be written using a normal text editor. Examples showing the required syntax are included in the PLC-Function Handbook. A SW-tool (parser) for checking the syntax is already available to VAX-users.
Applications	Local display panel indicating global alarms in buildings A, B, C etc.
Customer Advantages	<ul style="list-style-type: none">▪ process image based devices ensure correct intervention under all conditions▪ PLC-applications may be realised within the DMS-family▪ no special adaptations to PLC's from other suppliers▪ all engineering controlled by a single supplier▪ no problems with responsibility (when trouble-shooting etc.)▪ extremely flexible programming tailored to DMS-requirements▪ Integrated MF/MM-software is included in purchase price of MC70xx.

Description	The MF7023 is always built into an MC7033 and uses the processor/memory etc. of this unit.
Functions	see General Description.
Systems Limits	<ul style="list-style-type: none">▪ sum of all inputs/outputs = 192 (max. 4 MUX/DMUX-modules)▪ full PLC-functionality (see Summary MF/MM-7000)▪ system capacity: 20,000 load factors (see PLC-Function Handbook)
Display/Operation	No VDU-display.
HW-Requirements	MC7033 containing a max. of 4 MUX/DMUX-modules: <ul style="list-style-type: none">- E2A041 MUX 48 inputs (opto-coupler isolated)- E2A032 DMUX 48 outputs (opto-coupler isolated) Options: <ul style="list-style-type: none">- B1G040 Relay Card (48 relays max. 30Vdc/100mA)
SW-Configuration	<ul style="list-style-type: none">▪ Table Editor SWE700FT▪ Logic Editor not yet available
References	<ul style="list-style-type: none">▪ Equipment Description MF7033 Doc.No. e987▪ PLC-Function Handbook Doc.No. e999
Notes	Until the Editors become available, the equipment programs may be written using a normal text editor. Examples showing the required syntax are included in the PLC-Function Handbook. A SW-tool (parser) for checking the syntax is already available to VAX-users.
Applications	Systems with limited I/O requirements. <ul style="list-style-type: none">▪ local synoptic display panels▪ remote control of specific functions in the satellite control units▪ sophisticated fire control procedures
Customer Advantages	<ul style="list-style-type: none">▪ process image based devices ensure correct intervention under all conditions▪ PLC-applications may be realised within the DMS-family▪ no special adaptations to PLC's from other suppliers▪ all engineering controlled by a single supplier▪ no problems with responsibility (when trouble-shooting etc.)▪ extremely flexible programming tailored to DMS-requirements▪ Integrated MF/MM-software is included in purchase price of MC70xx.

Description	The MF7033 is an autonomous MUX/DMUX command unit (built in a standard 19" rack) situated in the evaluation level of a DMS-System.
Functions	see General Description.
System Limits	<ul style="list-style-type: none">▪ sum of all inputs/outputs = 576 (max. 12 MUX/DMUX-modules)▪ full PLC-functionality (see Summary MF/MM-7000)▪ system capacity: 20,000 load factors (see PLC-Function Handbook)▪ approx. guidelines: 500 input telegrams 800 PLC-functions 500 output telegrams
Display/Operation	No VDU-display.
HW-Requirements	Max. 12 MUX/DMUX-modules: <ul style="list-style-type: none">- E2A041 MUX 48 inputs (opto-coupler isolated)- E2A032 DMUX 48 outputs (opto-coupler isolated) Options: <ul style="list-style-type: none">- B1G040 Relay Card (48 relays max. 30Vdc/100mA)
SW-Configuration	<ul style="list-style-type: none">▪ Table Editor SWE700FT▪ Logic Editor not yet available
References	<ul style="list-style-type: none">▪ Equipment Description MF7033 Doc.No. e987▪ PLC-Function Handbook Doc.No. e999
Notes	Until the Editors become available, the equipment programs may be written using a normal text editor. Examples showing the required syntax are included in the PLC-Function Handbook. A SW-tool (parser) for checking the syntax is already available to VAX-users.
Applications	<ul style="list-style-type: none">▪ local synoptic display panels▪ remote control of specific functions in the satellite control units▪ sophisticated security control procedures
Customer Advantages	<ul style="list-style-type: none">▪ process image based devices ensure correct intervention under all conditions▪ PLC-applications may be realised within the DMS-family▪ no special adaptations to PLC's from other suppliers▪ all engineering controlled by a single supplier▪ no problems with responsibility (when trouble-shooting etc.)▪ extremely flexible programming tailored to DMS-requirements

Description	The MM7033 is an autonomous MUX/DMUX control unit (built in a standard 19" rack) which is situated in the acquisition level of a DMS-System.		
Functions	see General Description.		
System Limits	<ul style="list-style-type: none">▪ sum of all inputs/outputs = 576 (max. 12 MUX/DMUX-modules)▪ full PLC-functionality (see Summary MF/MM-7000)▪ system capacity: 20,000 load factors (see PLC-Function Handbook)▪ approx. guidelines: 500 input telegrams 800 PLC-functions 500 output telegrams		
Display/Operation	No VDU-display.		
HW-Requirements	Max. 12 MUX/DMUX-modules: <ul style="list-style-type: none">- E2A041 MUX 48 inputs (optically isolated inputs)- E2A032 DMUX 48 outputs (optically isolated outputs) Options: <ul style="list-style-type: none">- B1G040 Relay Card (48 relays max. 30Vdc/100mA)- B1G030 Line Supervision (12 lines → 24 MUX-inputs)		
SW-Configuration	<ul style="list-style-type: none">▪ Table Editor SWE700FT▪ Logic Editor not yet available		
References	<ul style="list-style-type: none">▪ Equipment Description e988 System Handbook MF/MM7000▪ PLC-Function Handbook e999 System Handbook MF/MM7000		
Notes	Until the Editors become available, the equipment programs may be written using a normal text editor. Examples showing the required syntax are included in the PLC-Function Handbook. A SW-tool (parser) for checking the syntax is already available to VAX-users.		
Applications	<ul style="list-style-type: none">▪ Integration of a "foreign" control unit into a Cerberus network.	Logical signals from a "foreign" control unit are mapped into an internal process image compatible with a standard Cerberus unit and telegram inter-communication with the DMS7000 supervisory control unit (eg. MT7033) is conducted in the normal manner.	
Customer Advantages	<ul style="list-style-type: none">▪ process image based devices ensure correct intervention under all conditions▪ PLC-applications may be realised within the DMS-family▪ no special adaptations to PLC's from other suppliers▪ all engineering controlled by a single supplier▪ no problems with responsibility (when trouble-shooting etc.)▪ extremely flexible programming tailored to DMS-requirements		

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Cerberus fire and security systems safeguard life and property