

SIEMENS

**Cerberus® CS10
Fire Detection System**

Interface Description
SW Ver. 4.x

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Fire & Security Products

Siemens Building Technologies Group

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Note:

The system owner should be aware that the connection to (or the interaction with) other systems may impair the functionality and reliability of the fire detection and / or security and protection system.

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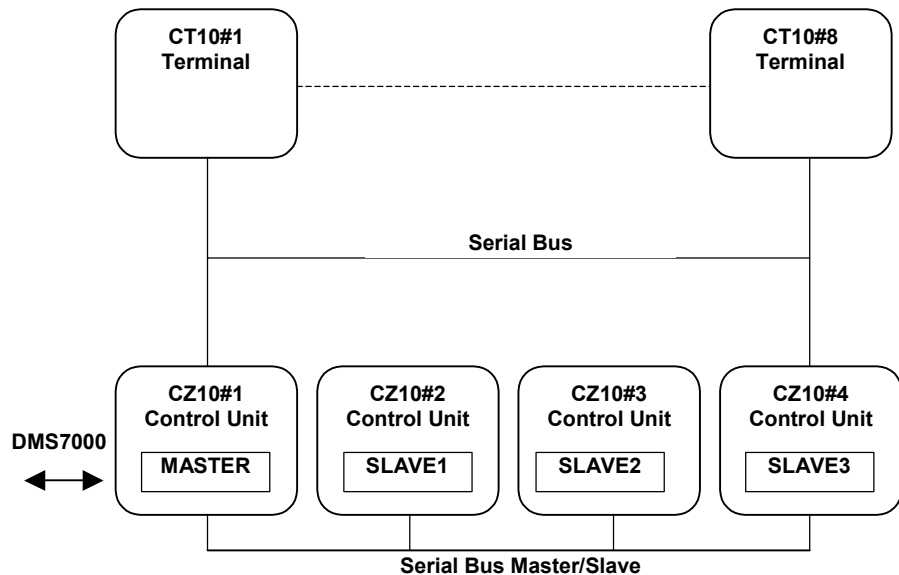
1 Overview

The CS10 fire detection system differs from older systems in the following areas:

- Hierarchical information structure
- Larger outline quantities
- Greater fault redundancy
- Greater functionality
- Higher application flexibility

2 CS10 Hardware architecture

A CS10 system comprises:

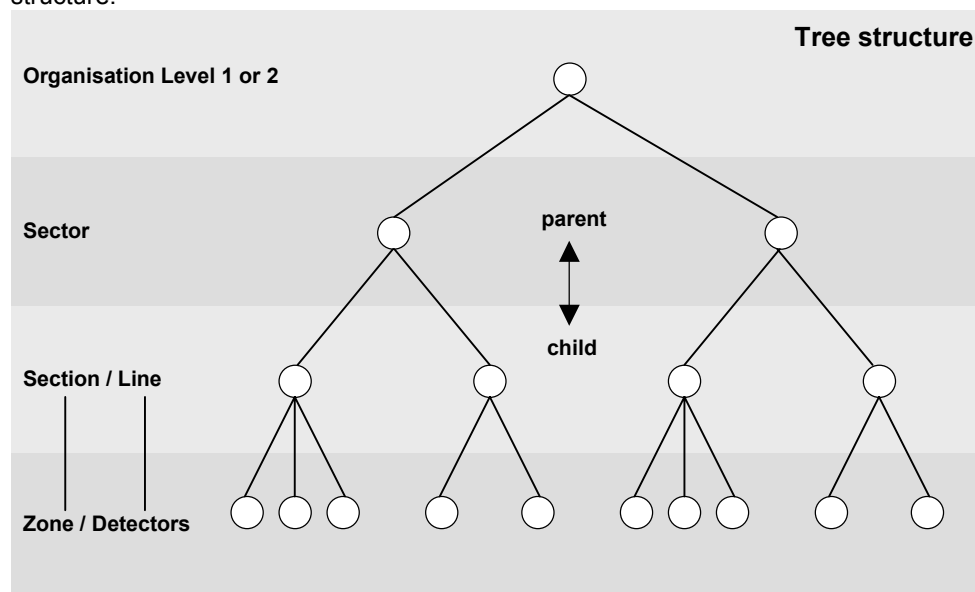


Outline quantities:

- Max. 4 CZ10 control units (1 Master, 3 Slaves)
- Max. 8 CT10 terminals
- „DMS-Gateway“ integrated in master

2.1 CS10 Information architecture

The information within the CS10 is organized hierarchically. It is saved in a simple tree structure.



The tree structure of the fire/extinguishing/gas/plant monitoring sector is the logical/geographical data image of a control unit. The basic sector does not appear as a tree structure.

Control unit

The behavior of the CS10 system is determined by the alarm organization states "Day" (disarmed) and "Night" (armed). These states apply to one organization level.

Sector

The sector does not have its own data store. It is only used as a reference point for the lower ranking objects.

A CZ10 control unit can comprise up to 5 sectors: basic, fire, extinguishing, gas, and plant monitoring. Internally there is a "Control" sector which in the DMS7000 is handled within the plant monitoring sector.

Section / Line

Sections and *lines* summarize the states of the allocated zones / detectors and allow collective operation.

Zones / Detectors

Zones and *detectors* evaluate the information of the assigned detectors, control devices, contacts, etc.

With the CZ10 there are zone types for manual call points or automatic detectors with different characteristics.

2.2 Basic sector

From the viewpoint of the DMS7000 the basic sector has no structure.

3 Integration of the CS10 architecture into the DMS7000

A CS10 system can be integrated directly into a DMS7000 network.

3.1 Addressing

- Each CZ10 control unit is assigned a unique DMS address.
- Sector, ADF1 and ADF2 combined as ADF1/2 contain a unique identifier of a CZ10 object (element, zone, virtual data element, see Chapter 4.8 page 35).
- In the basic sector all information items are supplied without unique identification of the data element. The identifier is always ADF1/2 = „0000“.
- In addition to the general addressing (zone **and** element telegrams) which is described below in the individual structures, it is possible to set parameters for addressing a CZ10 (applies to all sectors):

Parameter setting for telegrams	Address space ADF1 / 2	Possible data A and data B (example)	Comments
Zones only	<Section> / <Zone>	64 xx, 05 01	No detection element telegrams (67 xx)
Elements only	<Line> / <Detector>	67 xx, 05 01	The “Detection element active” telegram changes to an “Alarm” telegram.
Elements only, so-called log. representation	<Zone> / <Element within the Zone>	67 xx, 05 01	Rarely used



These special parameter definition capabilities of the CZ10 are NOT TAKEN INTO CONSIDERATION in the following chapters. In Chapter 5 Case studies, page 48, examples are given for the parameter setting “Elements only”.

3.2 Information depth

The information depth of the individual data elements is determined by the limited functionality of the DMS7000 network protocol, that is, certain detailed states are combined into a collective state (e.g. faults).

4 CS10 behavior in the DMS7000

In the following chapters the CS10 Data structures are described in detail. This description is geared to the DMS7000 behavior of the corresponding data elements.

4.1 Description of the data structures

The same description pattern is used for each data structure:

- Quick-reference description
- Addressing
- Valid states
- State transition diagram
- Telegram repertoire

4.1.1 Quick-reference description

Provides information on the purpose of a specific data structure.

4.1.2 Addressing

Provides information on the possible addressing space.

4.1.3 Valid states

Describes the valid states and the principal commands applicable to the corresponding data structure.

- The ACKNOWLEDGE command is generally not listed explicitly but can always be used.
- Initial and continuation messages are not supported.

4.1.4 State transmission diagram

The state transition diagram shows the valid states.

- The Y-axis shows the initial state (FROM). The initial state (state before polling) of the control center is shown with underscoring.
- The X-axis shows the subsequent state (TO).
- At the intersection the triggering event and the resulting action are shown.

Notation: Event

 Action

Events are:

- Spontaneous state changes within the control unit.
- Responses to operator inputs at the local CT10.
- Responses to command telegrams of a control center.

State changes are shown with ↑ (TO state) or ↓ (FROM state).

Actions are the resulting DMS7000 telegrams. An action can comprise one or several telegrams. Only the variable parts, that is, the *Separator*, *Data A* and *Data B* of a telegram are shown.

Invalid state transitions are marked with "---"



Note:

- Unacknowledged/acknowledged transitions within a certain state are not shown in the diagram (for space reasons).
 - Initial and continuation messages are not supported.
 - When the control center is initialized (polling sequence) transitions are possible which according to the diagram are invalid.
-

4.1.5 Telegram repertoire

The telegram repertoire for *messages* and *commands* is shown in the form of a table. The *Priority* field in the *Messages* table shows the priority assignment of the corresponding message based on the following scale:

- NORMAL (low priority)
- ANOMALY
- FAULT
- ALARM (high priority)

The acknowledgment command telegram can be determined in accordance with the priority.

The fields *Text A* and *Text B* contain the standard texts introduced in the DMS7000 network.

4.2 FIRE sector

The hierarchical level SECTOR contains no information. It is treated here only as a reference point.

As an extension to the standard FIRE section A1 in the FIRE sector also a BUILDING SERVICES section E2 can be configured in the BUILDING SERVICES sector in which case the latter also comprises the control groups. In addition the group type 16 (special monitoring contacts) behaves differently in A1 and E2. Except for these differences the functionality and the outline quantities are the same for A1 and E2.

The following description given for the FIRE section A1 applies without change also to the BUILDING SERVICES section E2. The additional control zones are described under 4.6.2 BUILDING SERVICES control zone (E2), page 21, the special monitoring contacts under BUILDING SERVICES Zone (E2)23, page 23 and 4.6.4 BUILDING SERVICES element (E2), page 25.

4.2.1 FIRE section A1 (or E2 respectively)

In this section certain collective operating procedures of the corresponding zones are combined, e.g. for acknowledging and resetting. Also refer to Chapter 4.8 Virtual addresses, page 35.

In the FIRE sector of the CZ10 the section designation A1 is admissible. In the BUILDING SERVICES sector of the CZ10 the section designation E2 is admissible, see Chapter 4.6 BUILDING SERVICES sector (E2), page 21.

4.2.2 FIRE zone

The Zone is responsible for the alarm decision based on the information of the assigned detectors and the decision criteria parameters. In addition certain information is supplied to the corresponding section. Up to 96 zones per section can be defined.

Addressing

Sector: FIRE or. BUILDING SERVICES
ADF1/2: Section A1 or E2 / Zones 01 .. 96

Valid states

State	Description	Valid commands
NORMAL	The zone is switched ON	OFF TEST
ALARM	An detector assigned to this zone signals "ACTIVE". Different measures are taken, depending on the current alarm response organization (day/night) and zone type.	ACKNOWLEDGE RESET OFF
OFF	Incoming events are not processed.	ON TEST ACKNOWLEDGE
TEST	Incoming events are not processed. If a detector assigned to the zone becomes active, the zone switches temporarily (10s) to the TEST ALARM state.	ON OFF ACKNOWLEDGE
TEST ALARM	A detector assigned to the zone has been activated while the zone was in the TEST state. This state is automatically terminated after 10s.	OFF (ACKNOWLEDGE)
FAULT	Short circuit or interruption of the line, wrong number of detectors, return line open, leakage current, detector defect or fault in the detector base electronics.	OFF ACKNOWLEDGE
OBJECT FAULT	Active message of a zone if special parameters have been set, e.g. for monitoring a shut-off device.	OFF ACKNOWLEDGE

State transition diagram

From	To	ALARM	OFF	TEST	TEST ALARM	FAULT	OBJECT FAULT	NORMAL
ALARM	---	---	↑ Off ----- M 64 56 M 00 85	---	---	---	---	↑Reset & ↓Cause of alarm ----- M 00 85
OFF	---	---	---	↑ Test ----- M 64 57	---	---	---	↑ On ----- M 64 3C
TEST	---	---	↑ Off ----- M 64 56	---	↑ <Alarm> ----- M 64 0B	---	---	↑ On ----- M 64 3C
TEST-ALARM	---	---	↑ Off ----- M 64 56	↑After 10s ----- M 64 57	---	---	---	---
FAULT	↑ Alarm ----- M 05 01** M 06 01** M 64 3C	↑ Off ----- M 64 56	---	---	---	---	↑Object faulty ----- M 64 47	↓Faulty ----- M 64 3C
OBJECT FAULT	---	↑ Off ----- M 64 56	---	---	---	---	---	↓ Object faulty ----- M 64 3C
<u>NORMAL</u>	↑ Alarm ----- M 05 01** M 06 01**	↑ Off ----- M 64 56	↑ Test ----- M 64 57	---	↑ Faulty ----- M 64 46	↑ Object faulty ----- M 64 47	---	

** Data A: 05 = Local Alarm (in day mode or depending on zone type)

06 = General internal alarm (in night mode or depending on zone type)
 e.g. manual call point, or if no CAC is programmed).

** Data B: 00 = Not defined (no text) / 01 = autom. detector / 02 = manual call point

Telegram repertoire

Messages

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
W P	<CZaddr>	A1 / 01 .. 96 E2 / 01 .. 96	M	85	01 **)	ALARM	Local Alarm	Autom. detector
W P	<CZaddr>	A1 / 01 .. 96 E2 / 01 .. 96	M	05	01 **)	ALARM	(Subsequent) Local Alarm	Autom. detector
W P	<CZaddr>	A1 / 01 .. 96 E2 / 01 .. 96	M	86	01 **)	ALARM	General Alarm	Autom. detector
W P	<CZaddr>	A1 / 01 .. 96 E2 / 01 .. 96	M	06	01 **)	ALARM	(Subsequent) General alarm	Autom. detector
**) Data B: 00 = not defined (no text) / 01 = automatic detector / 02 = manual call point ; selectable								
W P	<CZaddr>	A1 / 01 .. 96 E2 / 01 .. 96	M	64	3C	NORMAL	Zone	Normal operation
W P	<CZaddr>	A1 / 01 .. 96 E2 / 01 .. 96	M	64	56	ANOMALY	Zone	Off
W P	<CZaddr>	A1 / 01 .. 96 E2 / 01 .. 96	M	64	46	FAULT	Zone	Faulty
W P	<CZaddr>	A1 / 01 .. 96 E2 / 01 .. 96	M	64	47	FAULT	Zone	Objectt faulty
W P	<CZaddr>	A1 / 01 .. 96 E2 / 01 .. 96	M	64	57	ANOMALY	Zone	Test
W P	<CZaddr>	A1 / 01 .. 96 E2 / 01 .. 96	M	64	0B	ANOMALY	Zone	Test alarm

Commands

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
W P	<CZaddr>	A1 / 01 .. 96 E2 / 01 .. 96	R	64	55	Zone	On
W P	<CZaddr>	A1 / 01 .. 96 E2 / 01 .. 96	R	64	56	Zone	Off
W P	<CZaddr>	A1 / 01 .. 96 E2 / 01 .. 96	R	64	57	Zone	Test

For additional commands see Chapter 4.9 Primary operation, page 43.

4.2.3 FIRE line

In the line certain collective information of the corresponding detectors is combined. In the FIRE sector of the CZ10 the following line designations are admissible: 01 .. 24.

Each line occupies one zone location. Collective information of the line is supplied via the zone.

Example: Line 04 -> A104.

Externally the LINE appears only as a reference point.

4.2.4 FIRE detector

The fire detector supplies the criterion for the corresponding zone. Up to 50 detectors per line can be defined (MS8: max. 30).

Addressing

Sector: FIRE or. BUILDING SERVICES

ADF1/2: Line designation 01 .. 24 / Detector 01 .. 50

Valid states

State	Description	Valid commands
NORMAL	The detector is switched ON	OFF
ACTIVE	The detector signals "Active"	RESET OFF
OFF	Incoming events are not processed	ON
TEST ALARM	The detector has been activated while the corresponding zone was in the TEST state.	OFF (ACKNOWLEDGE)
FAULT	Detector faulty	OFF
OBJECT FAULT	"ACTIVE message" in conjunction with special parameter setting, such as monitoring of a shut-off device	OFF ACKNOWLEDGE
TRANSMISSION FAULT	Fault in detector base electronics	OFF ACKNOWLEDGE
MS9I+ SERVICE (DRIFT)	Request for service if the sensitivity "drifts" off.	OFF ACKNOWLEDGE

State transition diagram

From	To	ACTIVE	OFF	TEST ALARM	FAULT	OBJECT FAULT	TRANSMISSION FAULT	MSI9+ SERVICE	NORMAL
ACTIVE		---	↑ Off ----- M 67 56	---	---	---	---	---	↑ Reset & ↓ Cause ----- M 67 3C
OFF		---	---	---	---	---	---	---	↑ On ----- M 67 3C
TEST ALARM		---	↑ Off ----- M 67 56	---	---	---	---	---	↑ after 10 s ----- M 67 3C
FAULT		---	↑ Off ----- M 67 56	---	---	---	↑ Transm. faulty ----- M 67 62	---	↓ Transm.faulty ----- M 67 3C
OBJECT FAULT		---	↑ Off ----- M 67 56	---	---	---	---	---	↓ Zone faulty ----- M 67 3C
TRANSMISSION FAULT		---	↑ Off ----- M 67 56	---	↑ Faulty ----- M 67 46	---	---	---	↓ Fault ----- M 67 3C
MSI9+ SERVICE (DRIFT)		↑ .Active ----- M 67 4F	↑ Off ----- M 67 56	TEST zone & ↑ active ----- M 67 0B	↑ Faulty ----- M 67 46	↑ Object faulty ----- M 67 47	↑ Transm.faulty ----- M 67 62	---	↓ Drift ----- M 67 3C
NORMAL		↑ Active ----- M 67 4F	↑ Off ----- M 67 56	TEST zone & ↑ active ----- M 67 0B	↑ Faulty ----- M 67 46	↑ Object faulty ----- M 67 47	↑ Transm.faulty ----- M 67 62	↑ Drift ----- M 67 48	---

Telegram repertoire

Messages

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
W / P	<CZaddr>	01 .. 24 / 01 .. 50	M	67	3C	NORMAL	Detection Device	Normal operation
W / P	<CZaddr>	01 .. 24 / 01 .. 50	M	67	4F	ANOMALY	Detection Device	Active
W / P	<CZaddr>	01 .. 24 / 01 .. 50	M	67	46	FAULT	Detection Device	Faulty
W / P	<CZaddr>	01 .. 24 / 01 .. 50	M	67	47	ANOMALY	Detection Device	Zone faulty
W / P	<CZaddr>	01 .. 24 / 01 .. 50	M	67	62	FAULT	Detection Device	Transmission Faulty
W / P	<CZaddr>	01 .. 24 / 01 .. 50	M	67	56	ANOMALY	Detection Device	Off
W / P	<CZaddr>	01 .. 24 / 01 .. 50	M	67	48	NORMAL	Detection Device	MS9I+ Service (Drift)
W / P	<CZaddr>	01 .. 24 / 01 .. 50	M	67	0B	ANOMALY	Detection Device	Test alarm

Commands

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
W / P	<CZaddr>	01 .. 24 / 01 .. 50	R	67	55	Detection Device	On
W / P	<CZaddr>	01 .. 24 / 01 .. 50	R	67	56	Detection Device	Off

For additional commands see Chapter 4.9 Primary operation, page 43.

4.3 EXTINGUISHING sector

The hierarchical level SECTOR contains no information. It is only used as a reference point.

In the EXTINGUISHING sector there is only one hierarchical level: Extinguishing section.

4.3.1 EXTINGUISHING section

In the Extinguishing section the states of the corresponding detectors are mapped. Each extinguishing section consists of two zones: the 1st zone is the so-called pre-alarm zone, the 2nd zone the so-called extinguishing alarm zone. Exceptions: Sprinkler and zone extinguishing require only one zone for signaling that extinguishing has been activated.

Addressing

Sector: EXTINGUISHING
ADF1/2: B1 .. B8 / EB

Valid states

State	Description	Valid Commands
NORMAL	The zone is in the ON state	ACTIVATION DISABLED AUTOMATIC ACTIVATION OFF
PRE-ALARM	Pre-alarm zone (1st zone) has been activated by the extinguishing control unit.	ACKNOWLEDGE
EXTING. ALARM	Extinguishing alarm zone (2nd zone) has been activated by the extinguishing control unit.	ACKNOWLEDGE
FAULT	A zone of an extinguishing section is defective.	ACTIVATION DISABLED AUTOMATIC ACTIVATION OFF
SUBSEQUENT FAULT	The other zone of an extinguishing section is faulty whereas the fault of the first one has already been acknowledged.	ACTIVATION DISABLED AUTOMATIC ACTIVATION OFF
ACTIVATION ENABLED	Activation is in the ON state	ACTIVATION DISABLED AUTOMATIC ACTIVATION OFF
ACTIVATION DISABLED	Manual and automatic activation inhibited, that is, switched off	ACTIVATION ENABLED
AUTOM. ACTIVATION DISABLED	Automatic activation (via extinguishing control unit) inhibited	ACTIVATION ENABLED

State transition diagram

In the EXTINGUISHING section the states are represented in two separate diagrams because they are independent of each other and behave like two separate state machines.

To From	PRE-ALARM	EXTING. ALARM	FAULT	SUBSEQUENT FAULT	NORMAL
PRE-ALARM	---	↑ Extinguishing alarm zone activated ----- M 08 00	↑ Fault of one zone ----- M 3A 3A	↑ Fault of second zone ----- M 5C 00	↑ Reset & ↓ Cause ----- M 00 85
EXTING. ALARM	---	---	↑ Fault of one zone ----- M 3A 3A	↑ Fault of second zone ----- M 5C 00	↑ Reset & ↓ Cause ----- M 00 85
FAULT	↑ Pre-alarm zone activated ----- M 04 00	↑ Exting. alarm zone activated ----- M 08 00	---	↑ Fault of second zone ----- M 5C 00	↓ Fault of one zone ----- M 3A 3B
SUBSEQ. FAULT	↑ Pre-alarm zone activated ----- M 04 00	↑ Exting. alarm zone activated ----- M 08 00	---	---	↓ Fault of second zone ----- M 5C 3B
<u>NORMAL</u>	↑ Pre-alarm zone activated ----- M 04 00	↑ Exting. alarm zone activated ----- M 08 00	↑ Fault of one zone ----- M 3A 3A	---	---

To From	ACTIVATION ENABLED	ACTIVATION DISABLED	AUTOM. ACTIVATION DISABLED
<u>ACTIVATION DISABLED</u>	---	↑ Disabled ----- M 4D 5D M 63 3A	↑Autom. activation disabled ----- M 4D 5B M 63 3A
ACTIVATION DISABLED	↓ Disabled ----- M 4D 5A M 63 3B	---	↑Autom. activation disabled & ↓ activation disabled ----- M 4D 5B
AUTOM. ACTIVATION DISABLED	↓ Disabled ----- M 4D 5A M 63 3B	↑ Disabled ----- M 4D 5D	---

Telegram repertoire

Messages

All telegrams are transmitted with virtual addresses, also refer to Chapter 4.8 Virtual addresses, page 35

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
L	<CZaddr>	B1 .. B8 / EA	M	09	4F	ALARM	Alarm Remote Transm.	Active
L	<CZaddr>	B1 .. B8 / EA	M	09	4D	NORMAL	Alarm Remote Transm.	Inactive
L	<CZaddr>	B1 .. B8 / AE	M	4D	5A	NORMAL	Activation	Enabled
L	<CZaddr>	B1 .. B8 / AE	M	4D	5B	ANOMALY	Activation	Automatic activation enabled
L	<CZaddr>	B1 .. B8 / AE	M	4D	5D	ANOMALY	Activation	Disabled
L	<CZaddr>	B1 .. B8 / CD	M	06	00	ALARM	General Alarm	
L	<CZaddr>	B1 .. B8 / E4	M	5C	00	FAULT	Subsequent fault	
L	<CZaddr>	B1 .. B8 / E4	M	5C	3B	NORMAL	Subsequent fault	End
L	<CZaddr>	B1 .. B8 / E9	M	3B	4F	ANOMALY	RT fault	Active
L	<CZaddr>	B1 .. B8 / E9	M	3B	4D	NORMAL	RT fault	Inactive
L	<CZaddr>	B1 .. B8 / EB	M	84	00	ALARM	Pre-alarm	
L	<CZaddr>	B1 .. B8 / EB	M	88	00	ALARM	Extinguishing alarm	
L	<CZaddr>	B1 .. B8 / EB	M	08	00	ALARM	(Subsequent) Extinguishing alarm	
L	<CZaddr>	B1 .. B8 / EC	M	63	3A	ANOMALY	Part of system OFF	
L	<CZaddr>	B1 .. B8 / EC	M	63	3B	NORMAL	Part of system OFF	End
L	<CZaddr>	B1 .. B8 / ED	M	3A	3A	FAULT	Fault	
L	<CZaddr>	B1 .. B8 / ED	M	3A	3B	NORMAL	Fault	End

Commands

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
L	<CZaddr>	B1 .. B8 / 00	R	4D	5A	Activation	Enabled
L	<CZaddr>	B1 .. B8 / 00	R	4D	5D	Activation	Disabled
L	<CZaddr>	B1 .. B8 / 00	R	4D	5B	Automatic activation	Off

For additional commands see Chapter 4.9 Primary operation, page 43.

4.4 GAS sector

The hierarchical level SECTOR contains no information. It is only used as a reference point.

In the GAS sector there is only one hierarchical level: GAS section.

4.4.1 GAS section

In the gas section the states of the corresponding detectors are mapped. Each gas section consists of two zones: The 1st zone is the so-called pre-warning zone, the 2nd zone is the so-called gas alarm zone. For low gas concentrations the gas detection system control unit first activates the 1st zone. The 2nd zone is activated when the gas concentration increases further.

Addressing

Sector: GAS
ADF1/2: D1 .. D8 / EB

Valid states

State	Description	Valid commands
NORMAL	Zone is in ON state	SECTION OFF
PRE-WARNING	Pre-warning zone (1st zone) has been activated by the gas detection system control unit.	SECTION OFF ACKNOWLEDGE
GAS ALARM	Gas alarm zone (2nd zone) has been activated by the gas detection system control unit.	SECTION OFF ACKNOWLEDGE
FAULT	One zone of the Gas section is defective	SECTION OFF
SUBSEQUENT FAULT	The other section of the Gas section is defective, whereas the fault of the first one has already been acknowledged.	SECTION OFF
PART OF SYSTEM OFF	A gas section has been switched off.	SECTION ON

State transition diagram

From	To	PRE-WARNING	GAS ALARM	FAULT	SUBSEQUENT FAULT	PART OF SYSTEM OFF	NORMAL
PRE-WARNING		---	↑ Gas alarm zone ----- M 07 00	---	---	↑Section off ----- M 63 3A	↑ Reset & ↓ Cause ----- M 00 85
GAS ALARM		---	---	---	---	↑Section off ----- M 63 3A	↑ Reset & ↓ Cause ----- M 00 85
FAULT		↑ Pre-alarm zone ----- (M 3A 3B) M 02 00	↑ Gas alarm zone ----- (M 3A 3B) M 07 00	---	↑ Fault of 2nd zone ----- M 5C 00	↑Section off ----- M 63 3A	↓ Fault of one zone ----- M 3A 3B
SUBSEQUENT FAULT		↑ Pre-alarm zone ----- M 5C 3B M 02 00	↑ Gas alarm zone ----- M 5C 3B M 07 00	---	---	↑Section off ----- M 63 3A	↓ Fault 2nd zone ----- M 5C 3B
PART OF SYSTEM OFF		↑ Pre-alarm zone ----- M 02 00 **	↑ Gas alarm zone ----- M 07 00 **	↑ Fault of one zone ----- M 3A 3A **	---	---	↑SECTION ON ----- M 63 3B
<u>NORMAL</u>		↑ Pre-alarm zone ----- M 02 00	↑ Gas alarm zone ----- M 07 00	↑ Fault of one zone ----- M 3A 3A	---	↑Section OFF ----- M 63 3A	---

** Transitions are NOT interlocked by CZ10! This is optionally possible by the gas detection system control unit

Telegram repertoire

Messages

All telegrams are transmitted with virtual addresses, also refer to Chapter 4.8 Virtual addresses, page 35

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
G	<CZaddr>	D1 .. D8 / EA	M	09	4F	ALARM	Alarm Remote Transm.	active
G	<CZaddr>	D1 .. D8 / EA	M	09	4D	ALARM	Alarm Remote Transm.	Inactive
G	<CZaddr>	D1 .. D8 / CD	M	06	00	ALARM	General Alarm	
G	<CZaddr>	D1 .. D8 / E4	M	5C	00	FAULT	Subsequent fault	
G	<CZaddr>	D1 .. D8 / E4	M	5C	3B	NORMAL	Subsequent fault	End
G	<CZaddr>	D1 .. D8 / E9	M	3B	4F	ANOMALY	RT fault	Active
G	<CZaddr>	D1 .. D8 / E9	M	3B	4D	NORMAL	RT fault	Inactive
G	<CZaddr>	D1 .. D8 / EB	M	82	00	ALARM	Pre-alarm	
G	<CZaddr>	D1 .. D8 / EB	M	87	00	ALARM	Gas alarm	
G	<CZaddr>	D1 .. D8 / EB	M	07	00	ALARM	(Subsequent) Gas alarm	
G	<CZaddr>	D1 .. D8 / EC	M	63	3A	ANOMALY	Part of system OFF	
G	<CZaddr>	D1 .. D8 / EC	M	63	3B	NORMAL	Part of system OFF	End
G	<CZaddr>	D1 .. D8 / ED	M	3A	3A	FAULT	Fault	
G	<CZaddr>	D1 .. D8 / ED	M	3A	3B	NORMAL	Fault	End

Commands

The following commands can be used for switching a Gas section on and off.

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B	Effective command
G	<CZaddr>	D1 .. D8 / 00	R	4D	5A	Activation	Enabled	SECTION ON
G	<CZaddr>	D1 .. D8 / 00	R	4D	5B	Activation	Disabled	SECTION OFF

For additional commands see Chapter 4.9 Primary operation, page 43.

4.5 BUILDING SERVICES sector (E1) (MUX/DEMUX)

The hierarchical level SECTOR does not contain any information. It is only used as a reference point.

In the BUILDING SERVICES sector of the CZ10 the section designations E1 and E2 are admissible. The functionality of Section E1 is lower than in E2.

4.5.1 BUILDING SERVICES section (E1)

The functionality of E1 is essentially limited to MUX-/DEMUX functions, that is, to the signaling and control of contacts that are not monitored. In addition E1 contains the primary messages of the control devices. Refer to Chapter 4.5.5 BUILDING SERVICES control device (E1), page 19.

In section E1 no collective information of the associated detectors and control contacts are combined. This section is used only as a reference point.

4.5.2 BUILDING SERVICES signal contact (E1)

In the BUILDING SERVICES sector (E1) there are unmonitored signal contacts. Up to 96 such signal contacts can be configured.

The signal contact has no effect within the system control unit; the telegram is only transmitted which means that the contact is an input (MUX) element.

Addressing

Standard

Sector: BUILDING SERVICES

ADF1/2: Section E1 / Signal contact 01 .. 96

Collective VOICE information

This addressing version is not supported as a standard feature and requires a special EPROM.

Sector: BUILDING SERVICES

ADF1/2: Section E1 / BC for page

BD for evac

BE for alert

Valid states

State	Description	Valid commands
NORMAL	The corresponding signal contact is in the inactive normal state	
ACTIVE	The corresponding signal contact is in the activated state.	ACKNOWLEDGE

State transition diagram

From	To	ACTIVE	NORMAL
ACTIVE		---	↓Active ----- M 41 3C
NORMAL		↑ Active ----- M 41 4F	---

Telegram repertoire

Standard messages

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
P	<CZaddr>	E1 / 01 .. 96	M	41	3C	NORMAL	Signal contact	Normal operation
P	<CZaddr>	E1 / 01 .. 96	M	41	4F	ANOMALY	Signal contact	Active

Messages - VOICE

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
P	<CZaddr>	E1 / BC, BD, BE	M	41	3C	NORMAL	Signal contact	Normal operation
P	<CZaddr>	E1 / BC, BD, BE	M	41	4F	ANOMALY	Signal contact	Active

Collective telegram for VOICE system: BC = page / BD = evac / BE = alert

Commands:

Only ACKNOWLEDGE is feasible, see Chapter 4.9.3 ,page 45

4.5.3 BUILDING SERVICES control contact (E1)

Analogously to the unmonitored signal contacts there are also unmonitored control contacts in the BUILDING SERVICES sector (E1). Also here up to 96 such contacts can be configured.

The control contact represents the state of the corresponding internal control line which as such is not visible to the outside world. This is consequently an output (DEMUX) element whose states are not visible on the DMS7000. The control contact can only be commanded.

Addressing

Sector: BUILDING SERVICES
ADF1/2: Section E1 / Control contact 01 .. 96

Telegram repertoire

Commands

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
P	<CZaddr>	E1 / 01 .. 96	R	61	4D	Control contact	Inactive
P	<CZaddr>	E1 / 01 .. 96	R	61	4F	Control contact	Active

4.5.4 BUILDING SERVICES line (E1)

NO collective information of the affiliated control devices is combined in the line. In the BUILDING SERVICES sector of the CZ10 the following line designations are admissible: 01 .. 24.

The line serves only as a reference point.

4.5.5 BUILDING SERVICES control device (E1)

A control device is always assigned to an internal control line as well as to a detector zone. This detector zone is normally the line group of its physical line.

Direct control of the control device is not possible. It can only be activated via the internal control line to which it has been assigned. It contains a control as well as a reset contact.

Up to 50 control devices per line can be defined (MS8: max. 30). The normal operating states (NORMAL/ACTIVE/RESET) are signaled only via Section E1.

In the event of a fault in the control device (transmission error) the corresponding line group is also affected. For this reason faults are signaled not only in section E1 (element information) but also via the corresponding line group (zone information) to the sector in which the line group is configured. However, fault acknowledgment is only possible at the zone level because section E1 does not contain a mechanism for fault acknowledgment.

Addressing

Sector: BUILDING SERVICES

ADF1/2: Line designation 01 .. 24 / Control element 01 .. 50

Valid states

State	Description	Valid commands
INACTIVE	The control device is in the normal state.	
ACTIVE	The control device has been activated	ACKNOWLEDGE
CONFIRMED	The feedback (confirmation) contact has been activated	ACKNOWLEDGE
TRANSMISSION FAULT	Fault in the electronics	ACKNOWLEDGE NOT POSSIBLE!!

State transition diagram

From	To	ACTIVE	CONFIRMED	TRANSMISSION FAULT	INACTIVE
ACTIVE		---	↑ Confirmed ----- M 68 63	↑ Transmission faulty ----- M 68 62	↓ Active ----- M 68 4D
CONFIRMED		↓ Confirmed ----- M 68 4F	---	↑ Transmission faulty ----- M 68 62	↓ Confirmed ----- M 68 4D
TRANSMISSION FAULT		↑ Active & ↓ Transmission faulty ----- - M 68 4F	↑ Confirmed & ↓ Transmission faulty ----- -- M 68 63	---	↓ Transmission faulty ----- M 68 4D
INACTIVE		↑ Active ----- M 68 4F	↑ Confirmed ----- M 68 63	↑ Fault ----- M 68 62	---

Telegram repertoire

Messages

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
P	<CZaddr>	01 .. 24 / 01 .. 50	M	68	4D	NORMAL	Control element	Inactive
P	<CZaddr>	01 .. 24 / 01 .. 50	M	68	4F	ANOMALY	Control element	Active
P	<CZaddr>	01 .. 24 / 01 .. 50	M	68	62	FAULT	Control element	Transmission faulty
P	<CZaddr>	01 .. 24 / 01 .. 50	M	68	63	ANOMALY	Control element	Confirmed

Commands

Indirect commanding via internal control line (E1) possible.

4.6 BUILDING SERVICES sector (E2)

For a general description refer to Chapter 4.5 BUILDING SERVICES sector (E2), page 17.

4.6.1 BUILDING SERVICES Section (E2)

Section E2 (BUILDING SERVICES) essentially functions analogously to Section A1 (FIRE), see chapter 4.2.1 FIRE section A1 (or E2 respectively), page 6.

In addition to these functions the extensions described in the following Chapters are applicable:

- BUILDING SERVICES control zone (E2), Chapter 4.6.2, page 21
- BUILDING SERVICES zone, Chapter 4.6.3, page 23
- BUILDING SERVICES element (E2), Chapter 4.6.4, page 25

4.6.2 BUILDING SERVICES control zone (E2)

Analogously to the “Zones” there are additional “Control zones” which are used for controlling monitored contacts. Up to 96 such control zones can be configured.

Addressing

Sector: BUILDING SERVICES
 ADF1/2: Section E2 / Control contact 01 .. 96

Valid states

State	Description	Valid commands
NORMAL	The control contact has not been activated as is in the normal state.	ACTIVE OFF
ACTIVE	The control contact has been activated and is in the activated state.	INACTIVE OFF
FAULT	Short circuit or interruption on the line.	OFF
OFF	No events are processed but ACTIVE / INACTIVE commands are stored and become effective after the control contact is switched on.	ON

State transmission diagram

To	ACTIVE	FAULT	OFF	NORMAL
From				
ACTIVE	---	---	↑ Off ----- M 61 56	↓ Active ----- M 61 3C
FAULT	---	---	↑ Off ----- M 61 56	↓ Fault ----- M 61 3C
OFF	---	---	---	↑ On ----- M 61 3C
NORMAL	↑ active ----- M 61 4F	↑ Fault ----- M 61 46	↑ Off ----- M 61 56	---

Telegram repertoire

Messages

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
P	<CZaddr>	E2 / 01 .. 96	M	61	3C	NORMAL	Control contact	Normal operation
P	<CZaddr>	E2 / 01 .. 96	M	61	46	FAULT	Control contact	Faulty
P	<CZaddr>	E2 / 01 .. 96	M	61	56	ANOMALY	Control contact	Off
P	<CZaddr>	E2 / 01 .. 96	M	61	4F	ANOMALY	Control contact	Active

Commands

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
P	<CZaddr>	E2 / 01 .. 96	R	61	4D	Control contact	Inactive
P	<CZaddr>	E2 / 01 .. 96	R	61	55	Control contact	On
P	<CZaddr>	E2 / 01 .. 96	R	61	56	Control contact	Off
P	<CZaddr>	E2 / 01 .. 96	R	61	4F	Control contact	Active
P	<CZaddr>	E2 / 01 .. 96	R	64 *	55	Zone	On
P	<CZaddr>	E2 / 01 .. 96	R	64 *	56	Zone	Off

* = **Alternative Commands**: Can be operated as a control contact and partially also as a detector zone. The effect on the zone is the same, however, the response (messages) is always transmitted as a control contact.

For additional commands see Chapter 4.9 Primary operation, page 43.

4.6.3 BUILDING SERVICES Zone (E2)

Zones type 16 and their contacts behave differently from zones type 16 in the FIRE sector (A1). In this application they are used only as monitoring contacts without self-holding.

The BUILDING SERVICES zone (E2) is a collective signal contact without self-holding.

Addressing

Sector: BUILDING SERVICES

ADF1/2: Section E2 / Building Service Zone 01 .. 96

Valid states

State	Description	Valid commands
NORMAL	Contact switched on, normal state	OFF TEST
ACTIVE	An affiliated contact signals "ACTIVE".	OFF ACKNOWLEDGE
FAULT	Short circuit or interruption of the line, wrong number of detectors, reset line open, leakage current, detector fault, or base electronics fault.	OFF ACKNOWLEDGE
OFF	Incoming events are not processed.	ON TEST ACKNOWLEDGE
TEST	Incoming events are not processed. If an affiliated contact is activated the zone switches temporarily (10s) to the TEST ACTIVE state.	ON OFF ACKNOWLEDGE
TEST ACTIVE	An affiliated contact has been activated while the zone was in the TEST state. This state is terminated automatically after 10 sec.	OFF (ACKNOWLEDGE)

State transition diagram

From \ To	ACTIVE	FAULT	OFF	TEST	TEST ACTIVE	NORMAL
ACTIVE	---	---	↑ Off ----- M 41 56	---	---	↓ Active ----- M 41 3C
FAULT	---	---	↑ Off ----- M 41 56	---	---	↓ Faulty ----- M 41 3C
OFF	---	---	---	↑ Test ----- M 41 57	---	↑ ON ----- M 41 3C
TEST	---	---	↑ Off ----- M 41 56	---	↑ Active ----- M 41 0B	↑ ON ----- M 41 3C
TEST ACTIVE	---	---	↑ Off ----- M 41 56	↑ after 10 s ----- M 41 57	---	---
NORMAL	↑ Active ----- M 41 4F	↑ Faulty ----- M 41 46	↑ Off ----- M 41 56	↑ Test ----- M 41 57	---	---

Telegram repertoire

Messages

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
P	<CZaddr>	E2 / 01 .. 96	M	41	3C	NORMAL	Signal contact	Normal operation
P	<CZaddr>	E2 / 01 .. 96	M	41	46	FAULT	Signal contact	Faulty
P	<CZaddr>	E2 / 01 .. 96	M	41	56	ANOMALY	Signal contact	Off
P	<CZaddr>	E2 / 01 .. 96	M	41	57	ANOMALY	Signal contact	Test
P	<CZaddr>	E2 / 01 .. 96	M	41	0B	ANOMALY	Signal contact	Test alarm
P	<CZaddr>	E2 / 01 .. 96	M	41	4F	ANOMALY	Signal contact	Active

Commands

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
P	<CZaddr>	E2 / 01 .. 96	R	41	55	Signal contact	On
P	<CZaddr>	E2 / 01 .. 96	R	41	56	Signal contact	Off
P	<CZaddr>	E2 / 01 .. 96	R	41	57	Signal contact	Test
P	<CZaddr>	E2 / 01 .. 96	R	64 *	55	Zone	On
P	<CZaddr>	E2 / 01 .. 96	R	64 *	56	Zone	Off
P	<CZaddr>	E2 / 01 .. 96	R	64 *	57	Zone	Test

* = Alternative **Commands**: Operation is possible as a signal contact as well as a detector. The effect on the zone is the same, however, the response (**message**) is always transmitted as a signal contact.

For additional commands see Chapter 4.9 Primary operation, page 43.

4.6.4 BUILDING SERVICES element (E2)

The monitoring element BUILDING SERVICES (E2) is an addressed signal contact without self-holding.

Addressing

Sector: BUILDING SERVICES
 ADF1/2: Line designation 01 .. 24 / Monitoring contact 01 .. 50

Valid states

State	Description	Valid commands
NORMAL	Contact switched on; normal state.	OFF, TEST
ACTIVE	The contact signals "ACTIVE".	OFF
OFF	Income events are not processed.	ON TEST
TEST ACTIVE	The contact has been activated while the affiliated zone was in the TEST state. This state is automatically terminated after 10 s.	OFF
FAULT	Contact fault (detector)	OFF
TRANSMISSION FAULT	Fault base electronics	OFF

State transition diagram

From	To	ACTIVE	OFF	TEST ACTIVE	FAULT	TRANSMISSION FAULT	NORMAL
ACTIVE		---	↑ Off ----- M 41 56	---	↑ Faulty ----- M 41 46	↑ Transmission faulty ----- M 41 62	↓ Active ----- M 41 3C
OFF		---	---	---	---	---	↑ On ----- M 41 3C
TEST ACTIVE		---	↑ Off ----- M 41 56	---	---	---	↑ After 10 s ----- M 41 3C
FAULT		↑ Active ----- M 41 4F	↑ Off ----- M 41 56	---	---	↑ Transmission faulty ----- M 41 62	↓ Faulty ----- M 41 3C
TRANSMISSION FAULT		↓ Transm. faulty ↑ active ----- M 41 4F	↑ Off ----- M 41 56	---	↑ Faulty ----- M 41 46	---	↓ Transmission faulty ----- M 41 3C
<u>NORMAL</u>		↑ Active ----- M 41 4F	↑ Off ----- M 41 56	Zone TEST & ↑ active ----- M 41 0B	↑ Faulty ----- M 41 46	↑ Transmission faulty ----- M 41 62	---

Telegram repertoire

Messages

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
P	<CZaddr>	01 .. 24 / 01 .. 50	M	41	3C	NORMAL	Signal contact	Normal operation
P	<CZaddr>	01 .. 24 / 01 .. 50	M	41	46	FAULT	Signal contact	Faulty
P	<CZaddr>	01 .. 24 / 01 .. 50	M	41	56	ANOMALY	Signal contact	Off
P	<CZaddr>	01 .. 24 / 01 .. 50	M	41	62	FAULT	Signal contact	Transmission faulty
P	<CZaddr>	01 .. 24 / 01 .. 50	M	41	0B	ANOMALY	Signal contact	Test alarm
P	<CZaddr>	01 .. 24 / 01 .. 50	M	41	4F	ANOMALY	Signal contact	Active

Commands

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
P	<CZaddr>	01 .. 24 / 01 .. 50	R	41	55	Signal contact	On
P	<CZaddr>	01 .. 24 / 01 .. 50	R	41	56	Signal contact	Off
P	<CZaddr>	01 .. 24 / 01 .. 50	R	67 *	55	Detection Device	On
P	<CZaddr>	01 .. 24 / 01 .. 50	R	67 *	56	Detection Device	Off

* = **Alternative Commands**: Can be operated as a detector as well as a detector element. The effect on the element is the same, however, the response (messages) is always transmitted as a signal contact.

For additional commands see Chapter 4.9 Primary operation, page 43.

4.7 BASIC sector

The hierarchical level SECTOR does not contain any information. It is used only as a reference point.

For this reason the addressing for all zones is identical!

In the CERBERUS evaluation units MC7000, MF7000, MM7000 the fixed addressing is resolved internally and mapped into a "virtual address DMS units".

4.7.1 Addressing in the BASIC sector (fixed)

Sector: BASIC

ADF1/2: 00 / 00

4.7.2 Presence

Signals the presence of a control unit or is used in evaluation equipment for evaluating the presence of a control unit. The transmission interval can be set in the CZ10 to either 30 s or 60 s. The monitoring interval in the DMS7000-evaluation units can be freely configured.

Refer also to Chapter 4.7.7 Data lines and data network, page 32. (Internal telegrams, communication)

Valid states

State	Description	Valid commands
NORMAL	The control unit is in operation and can communicate via the network. It transmits a presence telegram in fixed intervals. Internally a Communications normal operation state is generated.	
FAULT	The control unit is not in operation or cannot communicate via the network. No presence telegrams are transmitted. Internally a communications fault is generated.	ACKNOWLEDGE (local)

State transition diagram

From	To	NORMAL	FAULT		
NORMAL		<p>↑ Timeout (Default: 30 s)</p> <p>-----</p> <p>M 39 00</p>	<table border="1"> <tr> <td> <p><u>in CZ10:</u> ↑ Communication not possible</p> <p>-----</p> <p>KON M 39 00 * Generate Internal communications fault</p> </td> <td> <p><u>in Evaluation unit:</u> ↑ Not present (presence telegram or other telegram of the corresponding control unit missing)</p> <p>-----</p> <p>Generate communications fault (internal: M 44 46)</p> </td> </tr> </table>	<p><u>in CZ10:</u> ↑ Communication not possible</p> <p>-----</p> <p>KON M 39 00 * Generate Internal communications fault</p>	<p><u>in Evaluation unit:</u> ↑ Not present (presence telegram or other telegram of the corresponding control unit missing)</p> <p>-----</p> <p>Generate communications fault (internal: M 44 46)</p>
<p><u>in CZ10:</u> ↑ Communication not possible</p> <p>-----</p> <p>KON M 39 00 * Generate Internal communications fault</p>	<p><u>in Evaluation unit:</u> ↑ Not present (presence telegram or other telegram of the corresponding control unit missing)</p> <p>-----</p> <p>Generate communications fault (internal: M 44 46)</p>				
FAULT		<table border="1"> <tr> <td> <p><u>in CZ10:</u> ↑ Communication enabled</p> <p>-----</p> <p>M 39 00 * Cancel Internal communications fault</p> </td> <td> <p><u>in Evaluation unit:</u> ↑ Present (presence telegram or other telegram of the corresponding control unit received)</p> <p>-----</p> <p>Cancel communications fault (internal: M 44 3C)</p> </td> </tr> </table>	<p><u>in CZ10:</u> ↑ Communication enabled</p> <p>-----</p> <p>M 39 00 * Cancel Internal communications fault</p>	<p><u>in Evaluation unit:</u> ↑ Present (presence telegram or other telegram of the corresponding control unit received)</p> <p>-----</p> <p>Cancel communications fault (internal: M 44 3C)</p>	---
<p><u>in CZ10:</u> ↑ Communication enabled</p> <p>-----</p> <p>M 39 00 * Cancel Internal communications fault</p>	<p><u>in Evaluation unit:</u> ↑ Present (presence telegram or other telegram of the corresponding control unit received)</p> <p>-----</p> <p>Cancel communications fault (internal: M 44 3C)</p>				

* Presence telegram or other telegram

Telegram repertoire

Messages

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
Z	<CZaddr>	00 / 00	M	39	00	NORMAL	Present	

4.7.3 Fault

For mapping general faults that are not specified or identified in detail on the DMS7000 as well as frame or collective messages to specific faults.

Virtual address of DMS units: ADF1/2: 00 / 01

Valid states

State	Description	Valid command
NORMAL	No fault in the system	
FAULT	At least one fault in the system	ACKNOWLEDGE

State transition diagram

To	FAULT	NORMAL
From		
FAULT	---	↓ Fault ----- M 3A 3B
NORMAL	↑ Fault ----- M 3A 3A	---

Telegram repertoire

Messages

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
Z	<CZaddr>	00 / 00	M	3A	3A	FAULT	Fault	
Z	<CZaddr>	00 / 00	M	3A	3B	NORMAL	Fault	End

Commands

see Chapter 4.9.2 Fault operation, page 44.

4.7.4 Subsequent fault

For mapping general faults that are not specified or identified in detail on the DMS7000, that is, collective messages that are identifiable only in the control unit.

Virtual address DMS units: ADF1/2: 00 / 01

Valid states

State	Description	Valid command
NORMAL	Not more than one unacknowledged (or no) fault in the system	
SUBSEQUENT FAULT	After a fault has been acknowledged another fault occurs	ACKNOWLEDGE

State transition diagram

From	To	SUBSEQUENT FAULT	NORMAL
SUBSEQUENT FAULT		---	↓ Subsequent fault ----- M 5C 3B
NORMAL		↑ Subsequent fault ----- M 5C 00	---

Telegram repertoire

Messages

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
Z	<CZaddr>	00 / 00	M	5C	00	FAULT	Subsequent fault	
Z	<CZaddr>	00 / 00	M	5C	3B	NORMAL	Subsequent fault	End

Commands

see Chapter 4.9.2 Fault operation, page 44.

4.7.5 Part of system OFF

For mapping general OFF states that are not specified in detail, or as frame and collective message for specific OFF states.

Virtual address DMS units: ADF1/2: 00 / 01

Valid states

State	Description	Valid command
NORMAL	No OFF states exist	
OFF	OFF states exist	ACKNOWLEDGE

State transition diagram

From	To	OFF	NORMAL
OFF		---	↓ Part of system OFF ----- M 63 3B
NORMAL		↑ Part of system OFF ----- M 63 3A	---

Telegram repertoire

Messages

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
Z	<CZaddr>	00 / 00	M	63	3A	ANOMALY	Part of system OFF	
Z	<CZaddr>	00 / 00	M	63	3B	NORMAL	Part of system OFF	End

Commands

see Chapter 4.9.3 page 45

4.7.6 Power source

For mapping the state of the power supply.
Virtual address DMS units: ADF1/2: 00 / 07

Valid states

State	Description	Valid commands
NORMAL	Mains operation	
BATTERY OPERATION	Power failure (if batteries are installed/functional)	ACKNOWLEDGE
FAULT	Fault in the power supply, e.g. battery imbalance, battery voltage low, defective fuses etc. in mains operation.	ACKNOWLEDGE

State transition diagram

To	BATTERY OPERATION	FAULT	NORMAL
From BATTERY OPERATION	---	↑ Faulty ----- M 3C 46	↓ Battery operation ----- M 3C 3C
FAULT	↓ Fault in battery operation ----- M 3C 3D	---	↓ Faulty ----- M 3C 3C
NORMAL	↑ Battery operation ----- M 3C 3D	↑ Faulty ----- M 3C 46	---

Telegram repertoire

Messages

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
Z	<CZaddr>	00 / 00	M	3C	3D	FAULT	Power source	Battery operation
Z	<CZaddr>	00 / 00	M	3C	46	FAULT	Power source	Faulty
Z	<CZaddr>	00 / 00	M	3C	3C	NORMAL	Power source	Normal operation

Commands

see Chapter 4.9.2 Fault operation, page 44.

4.7.7 Data lines and data network

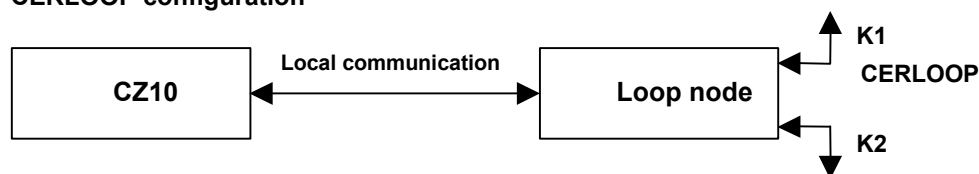
With CERLOOP: For mapping the states of the data link to the local loop node (so-called "local interface") as well as the data links K1 and K2 from the local loop node to the CERLOOP network. If only one side of the link in the CERLOOP network is interrupted, this data element is visible, otherwise (K1 and K2 faulty) an internal data line fault is generated internally because no communication is feasible. However, local operation is still possible.

With CERBAN: For mapping the state of the data link to the CERBAN network. Since no communication is possible in this case, a data line fault is generated internally and the line can be operated only locally.

Refer also to Chapter 4.7.2 Presence, page 27.

Virtual address DMS units: ADF1/2: 00 / 08

CERLOOP configuration



CERBAN configuration



Valid states

State	Description	Valid commands
NORMAL	The control unit is in operation and can communicate via the network. K1 and K2 are available. Presence telegrams are transmitted.	
FAULT K1 OR K2 NOT AVAILABLE (CERLOOP)	The control unit can communicate through K1 or K2 via the network. K2 or K1 are NOT available. Presence telegrams are transmitted.	ACKNOWLEDGE
FAULT	The control unit cannot communicate via the network. No presence telegrams are transmitted. Internally a communications fault is generated. Possible causes: - CERLOOP: - "Local interface" faulty or - K1 and K2 fault/not available - CERBAN : - Interface faulty	ACKNOWLEDGE (local)

State transition diagram

From	To	FAULT	FAULT K1 OR K2 NOT AVAILABLE	NORMAL
FAULT		---	↑ Communication via K1 or K2 possible ----- Cancel Internal communications fault (internal : M 44 3C) M 38 46 Activate presence telegram transmitter (M 39 00)	↑ Communication possible ----- Cancel Internal Communications fault (intern: M 44 3C) M 38 3C Activate presence telegram transmitter (M 39 00)
FAULT K1 OR K2 NOT AVAILABLE		↑ Communication impossible ----- Generate Internal communications fault (intern: M 44 46) Deactivate presence telegram transmitter	---	↑ Communication possible ----- M 38 3C
<u>NORMAL</u>		↑ Communication impossible ----- Generate Internal communications fault (internal: M 44 46) Deactivate presence telegram transmitter	↑ Communication possibly ONLY via K1 or K2 ----- M 38 46	---

Internal = internal in the individual DMS7000 units / no telegram transmission

Telegram repertoire

Messages

(only internal/local generation in the individual DMS7000 units)

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
Z	<CZaddr>	00 / 00	M	44	46	FAULT	Data line	Faulty
Z	<CZaddr>	00 / 00	M	44	3C	NORMAL	Data line	Normal operation

Messages

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
Z	<CZaddr>	00 / 00	M	38	46	FAULT	Data network	Faulty
Z	<CZaddr>	00 / 00	M	38	3C	NORMAL	Data network	Normal operation

Commands

see Chapter 4.9.2 Fault operation, page 44.

4.7.8 RT fault (RT = Remote Transmission)

For mapping a fault to the remote transmission and **NOT** a fault in the telecommunications equipment, as this term could be interpreted!

Virtual address DMS units: ADF1/2: 00 / 09

Valid states

State	Description	Valid commands
RT FAULT INACTIVE	Reset of the RT unit is inactive, that is, the RT input is not selected.	
RT FAULT ACTIVE	Reset of the RT unit is active, that is, the RT input is selected AND a fault exists in the BASIC sector.	ACKNOWLEDGE

State transition diagram

From	To	RT FAULT ACTIVE	RT FAULT INACTIVE
RT FAULT ACTIVE		---	↓ RT input (inactive) ----- M 3B 4D
RT FAULT INACTIVE		↑ RT INPUT (active) & fault exists ----- M 3B 4F	---

Telegram repertoire

Messages

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
Z	<CZaddr>	00 / 00	M	3B	4F	ANOMALY	RT fault	Active
Z	<CZaddr>	00 / 00	M	3B	4D	NORMAL	RT fault	Inactive

Commands

see Chapter 4.9.3 page 45

4.8 Virtual addresses

Additional data elements that allow differentiation of “parallel” information and consequently lead to a unique mapping of the states. In this way supplementary and collective information becomes accessible to the DMS7000 and can be clearly distinguished. The virtual address (e.g. \$AE) subsequently specified in the title of the individual data elements always relates to ADF2 (address field 2). The possible/valid ADF1/ADF2 combinations can be found in the telegram repertoire.

The utilization (transmission) of virtual addresses can be defined with parameters in the CZ10. If they are not used “00” is always transmitted in place of the virtual address. They can be used in all sectors (as far as this makes sense), except in the BASIC sector.

4.8.1 Activation (\$AE)

Description see Chapter 4.3 **EXTINGUISHING sector**, page 11.

4.8.2 External fault (\$CE)

For mapping the state of the “External fault” input of the CZ10.

Valid states

State	Description	Valid command
NORMAL	Input “External fault” inactive.	
FAULT	Input “External fault” active.	ACKNOWLEDGE

State transition diagram

To	FAULT	NORMAL
From		
FAULT	---	↓ Input “External fault” ----- - M 4F 56
NORMAL	↑ Input “External fault” ----- --- M 4F 55	---

Telegram repertoire

Messages

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
W	<CZaddr>	A1 / CE	M	4F	55	FAULT	External fault	On
W	<CZaddr>	A1 / CE	M	4F	56	NORMAL	External fault	Off

Commands

see Chapter 4.9.2 Fault operation, page 44.

4.8.3 General Alarm (\$CD)

For mapping the current CAC state.

Valid states

State	Description	Valid commands
NORMAL	No alarm or no existing alarm has reach the time limit or an existing alarm without CAC.	
GEN. INTERNAL ALARM IMPENDING V1	This state is reached 30 s before the expiration of V1, that is, when the acknowledgment has not been received on time. This time can be defined with a parameter (minimum time = 30 s).	ACKNOWLEDGE RESET
GEN. INTERNAL ALARM IMPENDING V2	This state is reached 30 s before the expiration of V2, that is, when the reset has not occurred within the time limit. This time can be defined with a parameter (minimum time = 30 s).	ACKNOWLEDGE RESET
GEN. INTERNAL A-LARM	After expiration of CAC (V1 or V2)	ACKNOWLEDGE RESET

State transition diagram

From	To	GEN. INTERNAL ALARM	GEN. INTERNAL ALARM IMPENDING V1	GEN. INTERNAL ALARM IMPENDING V2	NORMAL
GEN. INTERNAL ALARM		---	---	---	↑ Reset ----- M 00 85
GEN. INTERNAL ALARM IMPENDING V1		↑ V1 expired ----- M 06 00	---	↑ 30 s before expiration of V2 ----- M 00 84	↑ Reset ----- M 00 85
GEN. INTERNAL ALARM IMPENDING V2		↑ V2 expired ----- M 06 00	---	---	↑ Reset ----- M 00 85
NORMAL		---	↑ 30 s before expiration of V1 ----- M 00 81	↑ 30 s before expiration of V2 ----- M 00 84	---

For time information see above, Description of the states.

Telegram repertoire

Messages

Sectors	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
W, L, G, P	<CZaddr>	A1 / CD E2 / CD B1..B8 / CD D1..D8 / CD	M	**	81	Alarm		General Alarm impending (V1) that is, no acknowledgment received with activated alarm organization
W, L, G, P	<CZaddr>	A1 / CD E2 / CD B1..B8 / CD D1..D8 / CD	M	**	84	Alarm		General Alarm impending (V2) that is, no reset received with activated alarm organization
W, L, G, P	<CZaddr>	A1 / CD E2 / CD B1..B8 / CD D1..D8 / CD	M	06	00	Alarm	General Alarm	that is, after expiration of V1 or V2

Commands

see Chapter 4.9.1 Alarm operation, page 43.

4.8.4 External alarm (\$CF)

For mapping the state of the "Alarm I" input of the CZ10. No self-holding.

Valid states

State	Description	Valid commands
NORMAL	"Alarm I" input is Inactive.	
LOCAL ALARM	"Alarm I" input is active.	ACKNOWLEDGE (RESET)
GENENERAL ALARM	"Alarm I" input is active, in day mode or with expired V1 or V2, or V1 or V2 = value 0 corresponds to parameter setting	ACKNOWLEDGE (RESET)

State transition diagram

From	To	LOCAL ALARM	GEN. INTERNAL ALARM	NORMAL
LOCAL ALARM		---	---	↓ Alarm I input ----- M 00 85
GENEREAL ALARM		---	---	↓ Alarm I input ----- M 00 85
NORMAL		↑ Alarm I input ----- M 85 00	↑ Alarm I input (V1=0/V2=0/Night) ----- N 86 00	---

Telegram repertoire

Messages

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
W P	<CZaddr>	A1 / CF E2 / CF	M	85	00	ALARM	Local Alarm	
W P	<CZaddr>	A1 / CF E2 / CF	M	86	00	ALARM	General Alarm	

Commands

see Chapter 4.9.1 Alarm operation, page 43.

4.8.5 Subsequent fault (\$E4)

Description see Chapter 4.3 **EXTINGUISHING sector**, page 11 and Chapter 4.4 GAS, page 14.

4.8.6 RT fault (\$E9) [RT = Remote Transmission]

For mapping a fault to the remote transmission and **NOT** a fault in the telecommunications equipment, as this term could be interpreted!

Valid states

State	Description	Valid command
RT FAULT INACTIVE	Reset of the RT unit is inactive, that is, the RT input is not selected.	
RT FAULT ACTIVE	Reset of the RT unit is active, that is, the RT input is selected AND a fault exists in the corresponding sector.	ACKNOWLEDGE

State transition diagram

To From	RT FAULT ACTIVE	RT FAULT INACTIVE
RT FAULT ACTIVE	---	↓ RT input (inactive) ----- M 3B 4D
<u>RT FAULT INACTIVE</u>	↑ RT input (active) & fault exists ----- M 3B 4F	---

Telegram repertoire

Messages

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
W L G P	<CZaddr>	A1 / E9 B1..B8 / E9 D1..D8 / E9 E2 / E9	M	3B	4F	ANOMALY	RT fault	Active
W L G P	<CZaddr>	A1 / E9 B1..B8 / E9 D1..D8 / E9 E2 / E9	M	3B	4D	ANOMALY	RT fault	Inactive

Commands

see Chapter 4.9.3; page 45

4.8.7 Alarm Remote Transm. (\$EA)

Valid states

State	Description	Valid commands
REMOTE ALARM INACTIVE	Reset of the RT unit is inactive, that is, the RT input is not selected.	-
REMOTE ALARM ACTIVE	Reset of the RT unit is active, that is, the RT input is selected AND an alarm exists.	ACKNOWLEDGE

State transition diagram

From	To	REMOTE ALARM ACTIVE	REMOTE ALARM INACTIVE
REMOTE ALARM ACTIVE		---	↓ RT input (inactive) ----- M 09 4D
REMOTE ALARM INACTIVE		↑ RT input (active) & alarm exists ----- M 09 4F	---

Telegram repertoire

Messages

Sectors	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
W L G P	<CZaddr>	A1 / EA B1..B8 / EA D1..D8 / EA E2 / EA	M	09	4F	ALARM	Alarm Remote Transm.	Active
W L G P	<CZaddr>	A1 / EA B1..B8 / EA D1..D8 / EA E2 / EA	M	09	4D	NORMAL	Alarm Remote Transm.	Inactive

Commands

see Chapter 4.9.1 Alarm operation, page 43.

4.8.8 Pre-alarm (\$EB)

Description see Chapter 4.3 **EXTINGUISHING sector**, page 11 and Chapter 4.4 GAS, page 14.

4.8.9 Part of system OFF (\$EC)

For mapping general OFF states that are not specified or identifiable in detail, as well as frame and collective telegrams to each OFF state.

Valid states

State	Description	Valid command
NORMAL	No OFF states exist	
OFF	OFF states exist	ACKNOWLEDGE

State transition diagram

To	OFF	NORMAL
From		
OFF	---	↓ Part of system OFF ----- M 63 3B
NORMAL	↑ Part of system OFF ----- M 63 3A	---

Telegram repertoire

Messages

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
W L G P	<CZaddr>	A1 / EC B1..B8 / EC D1..D8 / EC E2 / EC	M	63	3A	ANOMALY	Part of system OFF	
W L G P	<CZaddr>	A1 / EC B1..B8 / EC D1..D8 / EC E2 / EC	M	63	3B	NORMAL	Part of system OFF	End

Commands

see Chapter 4.9.3 , page 44.

4.8.10 Fault (\$ED)

For mapping general faults that are not specified or identifiable in detail on the DMS7000, as well as frame and collective telegrams to each fault.

Valid states

State	Description	Valid command
NORMAL	No faults exist in the system	
FAULT	A fault exists in the system	ACKNOWLEDGE

State transition diagram

From	To	FAULT	NORMAL
FAULT		---	↓ Fault (NO faults exist any more) ----- M 3A 3B
		↑ Fault (a fault exists) ----- M 3A 3A	---
NORMAL			

Telegram repertoire

Messages

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
W L G P	<CZaddr>	A1 / ED B1..B8 / ED D1..D8 / ED E2 / ED	M	3A	3A	FAULT	Fault	
W L G P	<CZaddr>	A1 / ED B1..B8 / ED D1..D8 / ED E2 / ED	M	3A	3B	NORMAL	Fault	End

Commands

see Chapter 4.9.2, page 44

4.8.11 Organization (\$EF)

Valid states

State	Description	Valid commands
DAY ORGANIZATION	The corresponding organization level (A1 or E2) is in DAY mode (personnel present).	NIGHT
NIGHT ORGANIZATION	The corresponding organization level (A1 or E2) is in NIGHT mode (personnel absent).	TAG

State transition diagram

To	DAY	NIGHT
From		
DAY	---	↑Night ----- M 55 60
NIGHT	↑ Day ----- M 55 61	---

Telegram repertoire

Messages

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
W	<CZaddr>	A1 / EF	M	55	60	NORMAL	Organization	Night
W	<CZaddr>	A1 / EF	M	55	61	NORMAL	Organization	Day

Commands

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
W	<CZaddr>	A1 / EF	R	55	55	Organization	On (Night)
W	<CZaddr>	A1 / EF	R	55	56	Organization	Off (Day)

4.9 Primary operation

General operating possibilities on the CZ10.

The specific operating possibilities are listed under the individual zones under "Commands".



NOTE:

Only the most important ADF1/2 combinations are shown. Basically the commands of the primary operation can be applied to all corresponding events.

4.9.1 Alarm operation

Applicable to all telegrams of the ALARM priority.

Commands (applicable to unacknowledged alarms):

Sectors	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
W W P P	<CZaddr>	A1 / 01.. 96, CD 01 .. 24 / 01 .. 50 E2 / 01.. 96, CD 01 .. 24 / 01 .. 50	R	**	80	**	Alarm acknowledgment
L G	<CZaddr>	B1.. B8 / 00, CD D1.. D8 / 00, CD	R	**	80	**	Alarm acknowledgment

** = any

Messages (Result after successful alarm acknowledgment):

Sectors	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
W W P P	<CZaddr>	A1 / 00 00 / 00 E2 / 00 00 / 00	M	00	82	**	Acknowledged
L L G G	<CZaddr>	B1.. B8 / 00 00 / 00 D1.. D8 / 00 00 / 00	M	00	82	**	Acknowledged

Commands (applicable to acknowledged alarms):

Sectors	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
W W P P	<CZaddr>	A1 / 01.. 96, CD 01 .. 24 / 01 .. 50 E2 / 01.. 96, CD 01 .. 24 / 01 .. 50	R	**	83	**	Alarm reset
L G	<CZaddr>	B1.. B8 / 00, CD D1.. D8 / 00, CD	R	**	83	**	Alarm reset

** = any

Messages

(Result after alarm reset. If the cause of the alarm has not been remedied a new alarm is generated after a few seconds).

Sectors	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
W W P P	<CZaddr>	A1 / 00 00 / 00 E2 / 00 00 / 00	M	00	85	**	Reset
L L G G	<CZaddr>	B1.. B8 / 00 00 / 00 D1.. D8 / 00 00 / 00	M	00	85	**	Reset

4.9.2 Fault operation

Applicable to all telegrams with FAULT priority.

Commands (applicable to all unacknowledged faults):

Sectors	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
W W P P	<CZaddr>	A1 / 01.. 96, CD 01 .. 24 / 01 .. 50 E2 / 01.. 96, CD 01 .. 24 / 01 .. 50	R	**	86	**	Fault acknowledgment
L L G G Z	<CZaddr>	B1.. B8 / 00 00 / 00 D1.. D8 / 00 00 / 00 00 / 00	R	**	86	**	Fault acknowledgment

** = any

Messages (result after successful acknowledgment):

Sectors	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
W W P P	<CZaddr>	A1 / 00 00 / 00 E2 / 00 00 / 00	M	00	88	**	Acknowledged
L G Z	<CZaddr>	B1.. B8 / 00 D1.. D8 / 00 00 / 00	M	00	88	**	Acknowledged

Commands (applicable to acknowledged faults):

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
W W P P	<CZaddr>	A1 / 01.. 96, CD 01 .. 24 / 01 .. 50 E2 / 01.. 96, CD 01 .. 24 / 01 .. 50	R	**	8C	**	Fault reset
L G Z	<CZaddr>	B1.. B8 / 00 D1.. D8 / 00 00 / 00	R	**	8C	**	Fault reset

** = any

Messages (result if fault reset was successful, that is, cause of the fault has been remedied):

Sectors	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
W P	<CZaddr>	A1 / 01.. 96 E2 / 01.. 96	M	**	<3C>	**	<Normal operation>
L G Z	<CZaddr>	B1.. B8 / 00 D1.. D8 / 00 00 / 00	M	**	<3C>	**	<Normal operation>

** = any, that is, the data A/B combination results in a message with NORMAL priority.

4.9.3 Abnormal condition operation

Applicable to all telegrams with the priority ANOMALY (unacknowledged).

Commands (applicable to unacknowledged abnormal condition messages)

Sectors	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
W W P P P	<CZaddr>	A1 / 01.. 96 01.. 24 / 01.. 50 E2 / 01.. 96 01.. 24 / 01 .. 50 E1 / 01 .. 96	R	**	89	**	Acknowledgment status
L G Z	<CZaddr>	B1.. B8 / 00 D1.. D8 / 00 00 / 00	R	**	89	**	Acknowledgment status

** = any

N.B. With respect to its text this acknowledgment still appears "Acknowledgment status" for historical reasons because the ANOMALY priority was referred to as STATUS in earlier documents.

Messages (result after successful acknowledgment of abnormal condition):

Sectors	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
W W P P P	<CZaddr>	A1 / 00 01.. 24 / 01.. 50 E2 / 00 01.. 24 / 01 .. 50 E1 / 00	M	**	8B	**	Acknowledged
L G Z	<CZaddr>	B1.. B8 / 00 D1.. D8 / 00 00 / 00	M	**	8B	**	Acknowledged

** = any, that is, data A of the command telegram, provided ADF1/2 of the command contains the line/element address , otherwise always 00.

4.10 Polling of the CZ10

With a defined command telegram the CZ10 can be requested to transmit its abnormal operating states. Abnormal states are those that do not have a "NORMAL" priority.

Telegram repertoire

Sectors	DMS Adr	ADF1	ADF2	Sep	Data A	Data B	Text A	Text B
Z	<CZaddr>	00	00	R	53	55	Polling	On
Z	<CZaddr>	00	00	R	53	52	Polling	Execute
Z	<CZaddr>	00	00	M	53	3A	Polling	Start
Z	<CZaddr>	00	00	M	53	3B	Polling	End

Procedure

Fire detection system control unit CZ10, DMS- address 111, configured sectors: BASIC, FIRE and EXTINGUISHING

CZ10	Telegram	Evaluation unit
Event CZ10: Data link to the network O.K., begin transmission of presence messages	Z1110000M3900 →	
	← Z1110000R5355 ← Z1110000R5352	Event: Data link to CZ10 in normal condition, that is, telegram received from CZ10. Evaluation unit starts polling the CZ10 with the Basic sector.
Event CZ10: Polling command for Basic sector received. Transmit the abnormal states.	Z1110000M533A → <Telegram> → : <Telegram> → Z1110000M533B →	Event: Polling of Basic sector completed. (Polling end telegram)
	← W1110000R5355 ← W1110000R5352	Event: Polling completeness of Basic sector recognized (frame 533A/533B). Polling of Basic sector completed. Start polling of Fire sector.
Event CZ10: Polling command for Fire sector received. Transmit the abnormal states.	W1110000M533A → <Telegram> → : <Telegram> → W1110000M533B →	Event: Polling of Fire sector completed. (Polling end telegram).
	← L1110000R5355 ← L1110000R5352	Event: Polling completeness of Fire sector recognized (frame 533A/533B). Polling of Fire sector completed. Start polling of Extinguishing sector.
Event CZ10: Polling command for Extinguishing sector received. Transmit the abnormal states.	L1110000M533A → <Telegram> → : <Telegram> → L1110000M533B →	Event: Polling of Extinguishing sector completed. (Polling end telegram).
		Event: Polling completeness of Extinguishing sector recognized (frame 533A/533B). CZ10 polling completed. The process image of the evaluation unit for this CZ10 is now completely up-to-date.

4.11 Behavior after restart of the CZ10

All configured Sections respond after 60 (90) seconds:

Sector	DMS Adr	ADF1	ADF2	Sep	Data A	Data B	Text A	Text B
W	<CZaddr>	A1	00	M	53	3A	Polling	Begin
L	<CZaddr>	B1 .. B8	00	M	53	3A	Polling	Begin
G	<CZaddr>	D1 .. D8	00	M	53	3A	Polling	Begin
P	<CZaddr>	E1, E2	00	M	53	3A	Polling	Begin
Z	<CZaddr>	00	00	M	53	3A	Polling	Begin

From this point it is possible to poll the control unit. All state changes are signaled spontaneously and the presence telegram is generated if no other telegrams have to be transmitted.

Relationship between transmission cycle and waiting time:

Transmission cycle of the presence telegram: 30s 60s
 Waiting time (timeout) after restart: 60s 90s.

4.12 Clock synchronization of the CZ10 via Time telegram

With the time telegram the clocks of the terminals on the DMS7000 network can be synchronized.

The internal CZ10 clock is set in accordance with the time telegram, if it has been correspondingly configured.

The seconds are only used to set the clock if they contain a value in the range of 0 to 59. If the telegram contains the day of the week (61...67) the seconds of the clock are set to zero.

Example I:

Control center	Telegram	CZ10
Control center transmits a time telegram in intervals of 10 minutes (default)	T210995143561 →	CZ10 receives the time telegram and synchronizes the clock to the following values: Date: 21.09.95 Time: 14:35:00 Day of week: Day of week is ignored.

5 Case studies

The following case studies explain the typical events and how they are processed.

5.1 Alarms

5.1.1 Alarm in DAY mode

Assumptions: CZ10/collective with DMS address 111, telegram parameter setting: "Zones only", Day mode, operation before expiration of CAC.

CZ10	Telegram	Control center
Automatic detector of zone 24 initiates an alarm (no other alarms exist).	W111A124M8501→	The alarm is displayed as unacknowledged.
The control unit processes the ACKNOWLEDGE (ALARM) command.	←W111A124R8580	The ACKNOWLEDGE (ALARM) command is initiated before expiration of V1.
Control unit signals that the alarm has been acknowledged.	W111A100M0082→	The received alarm is flagged as "acknowledged".
Control unit processes the RESET (ALARM) command.	←W111A124R8583	The RESET (ALARM) command is initiated before expiration of V2.
Control unit signals that the alarm has been reset.	W111A100M0085→	The alarm disappears from the display.

Assumptions: CZ10/addressed with DMS address 111, telegram parameter settings: "Zones and elements", Day mode, operation before expiration of CAC.

CZ10	Telegram	Control center
Automatic detector of zone 24 initiates an alarm. (No other alarms exist.)	W111A124M8501→ W1110101M674F→	The alarm is displayed as unacknowledged.
Control unit processes the ACKNOWLEDGE (ALARM) command.	←W111A124R8580	The ACKNOWLEDGE (ALARM) command is initiated before expiration of V1.
Control unit signals that the alarm has been acknowledged.	W111A100M0082→ W1110000M0082→	The received alarm is flagged as "acknowledged".
Control unit processes the RESET (ALARM) command.	←W111A124R8583	The RESET (ALARM) command is initiated before expiration of V2.
Control unit signals that the alarm has been reset.	W111A100M0085→ W1110000M0085→ W1110101M673C→	The alarm disappears from the display.

Assumptions: CZ10/collective with DMS address 111, telegram parameter setting: "Zones only", Day mode, certain operations before expiration of CAC.

CZ10	Telegram	Control center
Automatic detector of zone 24 initiates an alarm. (No other alarms exist.)	W111A124M8501➔	The alarm is displayed as unacknowledged.
30s before expiration of V1: Initiation of the warning "General Alarm impending".	W111A1CDM0081➔	"General Alarm impending" is displayed as unacknowledged.
Control unit processes the ACKNOWLEDGE (ALARM) command	←W111A1CDR8580	The ACKNOWLEDGE (ALARM) command is initiated before expiration of V1.
Control unit signals the successful acknowledgment of the alarm.	W111A100M0082➔	The received alarm is flagged as "acknowledged".
30 s before expiration of V2: Initiation of the warning "General Alarm impending".	W111A1CDM0084➔	"General Alarm impending" is displayed as unacknowledged.
On expiration of V2: Initiation of a General Alarm.	W111A1CDM0600➔	The received General Alarm is displayed as unacknowledged.
Control unit processes the ACKNOWLEDGE (ALARM) command.	←W111A1CDR0680	The ACKNOWLEDGE (ALARM) command is initiated after V2 has expired.
Control unit signals that the alarm has been acknowledged.	W111A100M0082➔	The received alarm is flagged as "acknowledged".
Control unit processes the RESET (ALARM) command.	←W111A1CDR0683	The RESET (ALARM) command is initiated before expiration of V2.
Control unit signals that the alarm has been reset.	W111A100M0085➔	The alarm disappears from the display.

Assumptions: CZ10/addressed with DMS address 111, telegram parameter setup: "Elements only", Day mode, operation partially before expiration of CAC.

CZ10	Telegram	Control center
Automatic detector of zone 24 initiates an alarm. (No other alarms exist.)	W1110302M8501➔	The alarm is displayed as unacknowledged.
30s before expiration of V1: Initiation of warning "General Alarm impending".	W111A1CDM0081➔	"General Alarm impending" is displayed as unacknowledged.
After expiration of V1: Initiation of General Alarm.	W111A1CDM0600➔	The received General Alarm is displayed as unacknowledged.
Control unit processes the ACKNOWLEDGE (ALARM) command.	←W1110302R8580	The ACKNOWLEDGE (ALARM) command is initiated after expiration of V1.
Control unit signals that the alarm has been acknowledged.	W111A100M0082➔ W1110000M0082➔	The received alarm is flagged as "acknowledged".
Control unit processes the RESET (ALARM) command.	←W1110302R8583	The RESET (ALARM) command is initiated before expiration of V2.
Control unit signals that the alarm has been reset.	W111A100M0085➔ W1110000M0085➔ W1110302M673C➔	The alarm disappears from the display.

5.1.2 Alarm with Night organization

Assumptions: CZ10/collective with DMS address 111, telegram parameter setting: "Zones only", Night mode (no CAC).

CZ10	Telegram	Control center
Automatic detector of zone 21 initiates an alarm. (No other alarms exist.)	W111A121M8601→	The alarm is displayed as unacknowledged.
Control unit processes the ACKNOWLEDGE (ALARM) command.	←W111A121R8680	The ACKNOWLEDGE (ALARM) command is initiated.
The control unit signals that the alarm has been acknowledged.	W111A100M0082→	The received alarm is flagged as "acknowledged".
Control unit processes the RESET (ALARM) command.	←W111A121R8683	The RESET (ALARM) command is initiated.
Control unit signals that the alarm has been reset.	W111A100M0085→	The alarm disappears from the display.

Assumptions: CZ10/addressed with DMS address 111, telegram parameter setting: "Zones and elements", Night mode (no CAC).

CZ10	Telegram	Control center
Automatic detector of zone 21 initiates an alarm. (No other alarms exist.)	W111A121M8601→ W1110101M674F→	The alarm is displayed as unacknowledged.
Control unit processes the ACKNOWLEDGE (ALARM) command.	←W111A121R8680	The ACKNOWLEDGE (ALARM) command is initiated.
Control unit signals that the alarm has been acknowledged..	W111A100M0082→ W1110000M0082→	The received alarm is flagged as "acknowledged".
Control unit processes the RESET (ALARM) command.	←W111A121R8683	The RESET (ALARM) command is initiated.
Control unit signals that the alarm has been reset.	W111A100M0085→ W1110000M0085→ W1110101M673C→	The alarm disappears from the display.

5.1.3 Extinguishing alarm

Assumptions: CZ10/collective with DMS address 111, Night mode (no CAC).

CZ10	Telegram	Control center
Pre-alarm zone initiates an alarm.	L111B1EBM8400→ L111B1CDM0600→	Pre-alarm is displayed.
Also the extinguishing alarm zone initiates an alarm.	L111B1EBM0800→	The extinguishing alarm is also displayed.
Control unit processes the ACKNOWLEDGE (ALARM) command.	←L111B1EBR0880	The ACKNOWLEDGE (ALARM) command is initiated.
Control unit signals that the alarm has been acknowledged.	L111B200M0082→	The received alarm is flagged as "acknowledged".
Control unit processes the RESET (ALARM) command.	←L111B1EBR0883	The RESET (ALARM) command is initiated.
Control unit signals that the alarm has been reset, provided the extinguishing control unit has reset.	L111B100M0085→	The alarm disappears from the display.

5.2 Faults

5.2.1 Zone fault

Assumptions: CZ10/collective with DMS address 111, telegram parameter setting: "Zones only", Night mode.

CZ10	Telegram	Control center
No fault exists on the control unit.		No fault is displayed.
Zone 32 signals a fault. (Short circuit or line interruption, wrong number of detectors, leakage current, or return line open)	W111A1EDM3A3A→ W111A132M6446→	The fault is displayed as "unacknowledged".
Control unit processes the ACKNOWLEDGE (FAULT) command.	←W111A132R6486	The ACKNOWLEDGE (FAULT) command is initiated.
Control unit signals that the alarm has been acknowledged..	W111A100M0088→	The received Fault command is flagged as "acknowledged".
The control unit signals that the fault has disappeared as soon as the cause of the fault has been remedied.	W111A1EDM3A3B→ W111A132M643C→	The fault disappears from the display.

5.2.2 Detection Device fault

Assumptions: CZ10/addressed with DMS address 111, telegram parameter setting: "Zones and elements", Day mode.

CZ10	Telegram	Control center
No fault exists on control unit.		No fault is displayed.
Detector 2 of line 3 signals a fault	W111A1EDM3A3A→ W111A124M6446→ W1110302M6746→	The fault is displayed as unacknowledged.
Control unit processes the ACKNOWLEDGE (FAULT) command.	←W1110302R6786	The ACKNOWLEDGE (FAULT) command is initiated.
Control unit signals that the alarm has been acknowledged.	W111A100M0088→ W1110000M0088→	The received fault is flagged as "acknowledged".
The control unit signals that the fault has disappeared as soon as the cause of the fault has been remedied.	W111A1EDM3A3B→ W111A124M643C→ W1110302M673C→	The fault disappears from the display..

5.2.3 BUILDING SERVICES (E2) monitoring element fault

Assumptions: CZ10/addressed with DMS address 114, telegram parameter setting: "Zones and elements", signal contact 0307 on zone 80.

CZ10	Telegram	Control center
No fault exists on control unit.		No fault is displayed.
Contact 07 of line 03 becomes faulty, the affiliated zone E280 is also signaled as faulty.	P114E2EDM3A3A→ P114E280M4146→ P1140307M4146→	The fault is displayed as unacknowledged.
Control unit processes the ACKNOWLEDGE (FAULT) command.	←P1140307R4186	The ACKNOWLEDGE (FAULT) command is initiated.
Control unit signals that the alarm has been acknowledged.	P114E200M0088→ P1140000M0088→	The received fault is flagged as "acknowledged".
The control unit signals that the fault has disappeared as soon as the cause of the fault has been remedied.	W114E2EDM3A3B→ W114E280M413C→ W1140302M413C→	The fault disappears from the display.

5.3 Others

5.3.1 Organization changeover

Assumptions: CZ10 with DMS address 111, Day mode.

CZ10	Telegram	Control center
Control unit operates in Day mode.		The displayed organization status of this control unit shows Day mode.
Control unit processes the NIGHT command.	←W111A1EFR5555	The NIGHT command is initiated.
Control unit signals that the organization has been changed over to Night mode.	W111A1EFM5560→	The changeover is registered. The displayed organization status of this control unit now shows Night mode.

Assumptions: CZ10 with DMS address 111, Night mode.

CZ10	Telegram	Control center
Control unit operates in Night mode.		The displayed organization status of this control unit shows Night mode.
Control unit processes the DAY command.	←W111A1EFR5556	The DAY command is initiated.
Control unit signals that the organization has been changed over to Day mode.	W111A1EFM5561→	The changeover is registered. The displayed organization status of this control unit now shows Day mode.

5.3.2 Switching a detector zone

Assumptions: CZ10/collective with DMS address 111, telegram parameter setting: "Zones only", zone 36 is ON.

CZ10	Telegram	Control center
Zone 36 is switch ON.		The switching state of zone 36 is displayed as ON.
Control unit processes the (ZONE) OFF command.	←W111A136R6456	The (ZONE) OFF command is initiated.
Control unit signals that zone 36 has been switched OFF.	W111A1ECM633A→ W111A136M6456→	The switch-off is performed and the switching state of zone 36 is displayed as ON.
Control unit processes the ACKNOWLEDGE (ANOMALY) command.	←W111A136R6489	The ACKNOWLEDGE (ANOMALY) command is initiated.
Control unit signals that zone 36 has been acknowledged.	W111A100M008B→	Zone 36 is flagged as acknowledged.

Assumptions: CZ10/collective with DMS address 111, telegram parameter setting: "Zones only", zone 36 is switched off.

CZ10	Telegram	Control center
Zone 36 is switched off.		The switching state of Zone 36 displayed as OFF.
Control unit processes the (ZONE) ON command.	←W111A136R6455	The (ZONE) ON command is initiated.
Control unit signals that zone 36 has been switched ON.	W111A1ECM633B→ W111A136M643C→	The switch-on is registered and the switching state of zone 36 is displayed as ON (NORMAL).

5.3.3 Switching the Extinguishing section

Assumptions: CZ10 with DMS address 111, extinguishing section B1 is switched ON.

CZ10	Telegram	Control center
Extinguishing section B1 is switched ON.		The switching state of extinguishing section B1 is shown as ON.
Control unit processes the SECTION OFF (= activation inhibited) command.	←L111B100R4D5D	The SECTION OFF (= activation inhibited) is initiated.
Control unit signals that activation of the extinguishing zone has been switched off/disabled.	L111B1ECM633B→ L111B1AEM4D5D→	The switch-off is registered and the switching state of the extinguishing section is shown as OFF.
Control unit processes the ACKNOWLEDGE (ANOMALY) command.	←L111B1AER4D89	The ACKNOWLEDGE (ANOMALY) command is initiated.
Control unit signals that the alarm has been acknowledged.	L111B100M008B→	Section B1 is flagged as acknowledged.

Assumptions: CZ10 with DMS address 111, extinguishing section B1 is switched OFF.

CZ10	Telegram	Control center
Extinguishing section B1 is switched OFF.		The switching state of the extinguishing section B1 is shown as OFF.
Control unit processes the SECTION ON command (= activation enabled).	←L111B100R4D5A	The SECTION ON (= activation enabled) is initiated.
Control unit signals that the extinguishing sector B1 has been switched ON.	L111B1ECM633B→ L111B1AEM4D5A→	The switch-on is registered. The switching state of extinguishing section B1 is shown as ON (NORMAL).

5.3.4 Acknowledging a signal contact BUILDING SERVICES E1

Assumptions: CZ10 with DMS address 114.

CZ10	Telegram	Control center
The signal contact is activated and signals the status change.	P114E101M414F→	The signal contact is shown as "ACTIVE".
Control unit processes the ACKNOWLEDGE (ANOMALY) command.	←P114E101R4189	The ACKNOWLEDGE (ANOMALY) command is initiated.
Control unit signals that the alarm has been acknowledged.	P114E100M008B→	The signal contact is flagged as acknowledged.
The signal contact is again deactivated and signals the status change.	P114E101M413C→	The signal contact is again shown in the normal state (inactive).

5.3.5 Switching a control contact BUILDING SERVICES E1

Assumptions: CZ10 with DMS address 114. The control contact No. 117 is looped to signal contact 01.

CZ10	Telegram	Control center
Control unit processes the ACTIVE command.	←P114E117R614F	The ACTIVE command for activating control contact 17 is initiated.
Through the activation of control contact 17 signal contact 1 is activated and the status change is signaled.	P114E101M414F→	The switching state of the signal contact is shown as "ACTIVE".
Control unit processes the ACKNOWLEDGE (ANOMALY) command.	←P114E101R4189	The ACKNOWLEDGE (ANOMALY) command is initiated.
Control unit signals that the alarm has been acknowledged.	P114E100M008B→	The signal contact is flagged as acknowledged.
Control unit processes the INACTIVE command.	←P114E117R614D	The INACTIVE command is initiated.
Through the deactivation of control contact 17 signal contact 1 is again deactivated and the status change is signaled.	P114E101M413C→	The switching state of the signal contact is again shown as normal (inactive).

5.3.6 Switching a control device BUILDING SERVICES E1

Assumptions: CZ10/addressed with DMS address 114, control device No. 0520 is combined with an internal control line 93 and can only be influenced via the control line. Such logical combinations are freely programmable.

CZ10	Telegram	Control center
Control unit processes the ACTIVE command.	←P114E193R614F	The ACTIVE command for activating the internal control line 93 is initiated.
Based on the logical combination the corresponding control device is activated.	P1140520M684F→	The switching state of the control device is shown as Active.
Control unit processes the ACKNOWLEDGE (ANOMALY) command.	←P1140520R6889	The ACKNOWLEDGE (ANOMALY) is initiated
Control unit signals that the control device has been acknowledged.	P1140520M688B→	The control device is flagged as acknowledged.
Control unit processes the INACTIVE command.	←P114E193R614D	The INACTIVE command for deactivating the internal control line 93 is initiated.
Based on the logical combination the corresponding control device is again deactivated.	P1140520M684D→	The switching state of the control device is shown as Inactive.

5.3.7 Switching a monitoring zone BUILDING SERVICES E2

Assumptions: CZ10 with DMS address 114.

CZ10	Telegram	Control center
Control unit processes the OFF command.	←P114E205R4156	OFF command for switching off monitoring zone 5 is initiated.
Control unit signals that the zone has been switched OFF.	P114E2ECM633A→ P114E205M4156→	The switching state of monitoring zone is shown as OFF.
Control unit processes the TEST command.	←P114E205R4157	The TEST command is initiated.
Control unit signals that the zone has been switched to TEST.	P114E205M4157→	The switching state of monitoring zone 5 is shown as TEST.
Monitoring zone 5 is briefly activated. Because it is in TEST mode as TEST ALARM is signaled.	P114E205M410B→	The switching state of monitoring zone 5 is shown as TEST ALARM.
After 10 sec. monitoring zone returns automatically to TEST mode.	P114E205M4157→	The switching state of monitoring zone 5 is shown as TEST.
Control unit processes the ON command.	←P114E205R4155	The ON command for switch on monitoring zone 5 is initiated.
Control unit signals that the zone has been switched ON.	P114E2ECM633B→ P114E205M413C→	The switching state of monitoring zone 5 is again shown as ON.

5.3.8 Switching off a monitoring element BUILDING SERVICES E2

Assumptions: CZ10 with DMS address 114.

CZ10	Telegram	Control center
Control unit initiates the OFF command.	←P1140307R4156	The OFF command for switching off monitoring element 0307 is initiated.
Control unit signals that the monitoring element has been switched OFF.	P114E2ECM633A→ P1140307M4156→	The switching state of monitoring element 0307 is shown as OFF.
Control unit processes the ON command.	←P1140307R6755	The ON command for switching on monitoring element 0307 is initiated.
Control unit signals that the monitoring element has been switched ON.	P114E2ECM633B→ P1140307M413C→	The switching state of monitoring element 0307 is again shown as ON.

5.3.9 Acknowledging a monitoring element BUILDING SERVICES E2

Assumptions: CZ10 with DMS address 114.

CZ10	Telegram	Control center
The monitoring element is activated and signals the status change.	P1140308M414F→	The switching state of the monitoring element is shown as "ACTIVE".
Control unit processes the ACKNOWLEDGE (ANOMALY) command.	←P1140308R4189	The ACKNOWLEDGE (ANOMALY) command is initiated.
Control unit signals that the alarm has been acknowledged.	P1140308M418B→	The monitoring element is flagged as acknowledged.
The Monitoring element is again deactivated and signals the status change.	P1140308M413C→	The switching state of the monitoring element is shown as Normal (Inactive).

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