

SIEMENS

**Cerberus[®] CS1140
Gateway CK1142**

Interface Description
SW Ver. 5.1x

Application for:
Standard

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Fire & Security Products

Siemens Building Technologies Group

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The system owner shall 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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Changes in the documentation

Errors in document e1560 V4.4x

The page numbers refer to the respective document.

Page	Correction
9	paragraph SECTION, the system limit is 255 sections per CC11
80	Structure 1562/RTOTHER, valid states, no command applicable except ACKNOWLEDGE FAULT.

Changes since document e1560 V4.4x

Topic	Comments
Hierarchical level FUNCTION UNIT Structures 1392/1393	New structures 1392/1393 VDS-INTERFACE (used only in Germany).

1 Overview

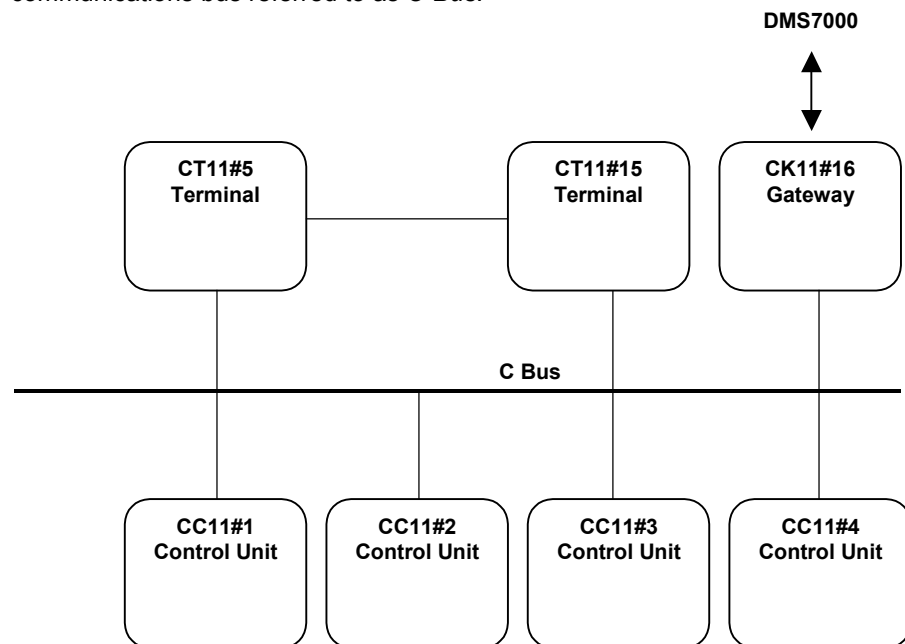
The AlgoRex CS11 fire detection system represents the latest generation of the CERBERUS fire detection technology. This system offers the following features:

- High detection intelligence.
- Excellent communications capability
- High configuration flexibility
- High system availability

CS11 systems can be integrated into a DMS7000 network via a gateway and thus connected to a CERBERUS monitoring system or an external system.

2 CS11 Hardware architecture

A CS11 system consists of individual stations which are interconnected via a common communications bus referred to as *C-Bus*.

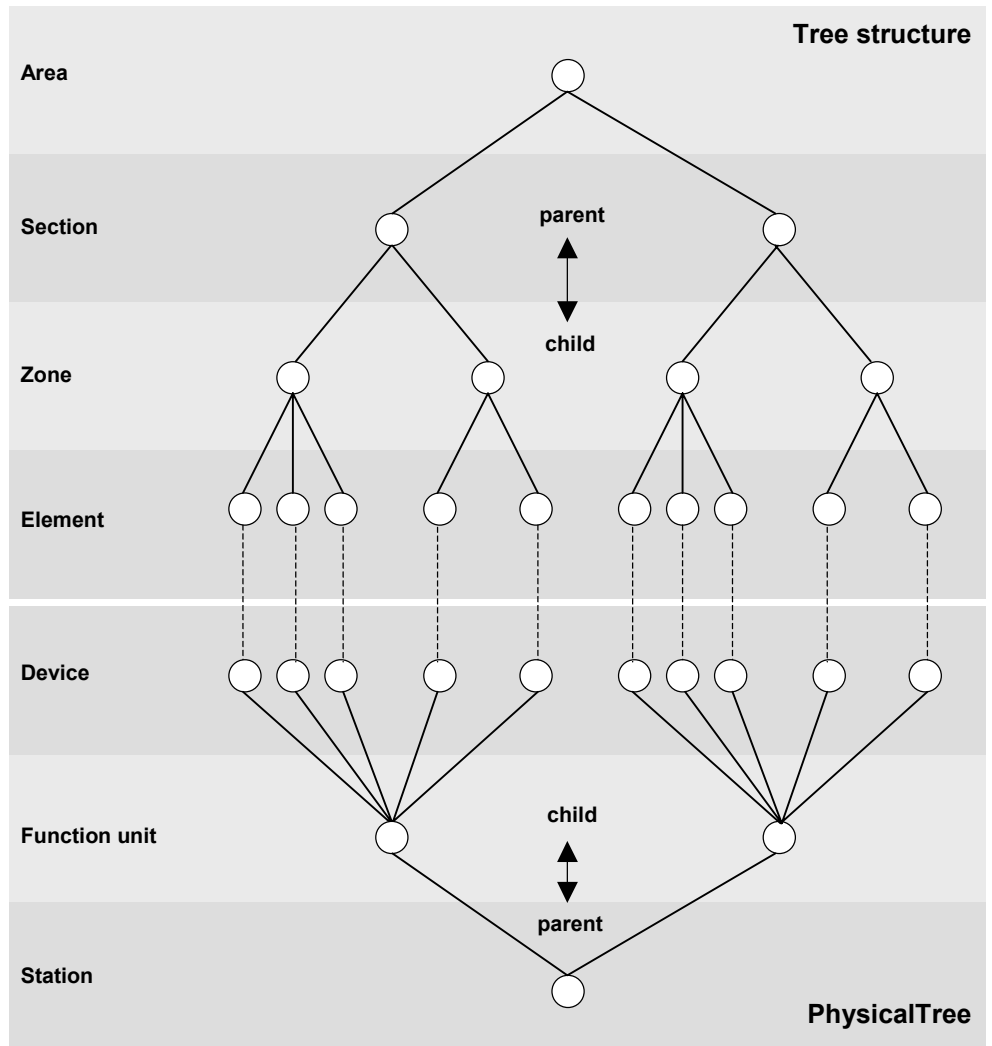


System limits:

- 16 stations per C-bus, of which:
 - max. 4 CC11 control units
 - max. 12 CT11 terminals (max. 11 CT11, if the system includes a CK11 gateway)
 - max. 1 CK11 gateway

3 CS11 Information architecture

The information within the CS 11 system is arranged hierarchically. The logical/geographical structure is represented by the logical tree, the physical (hardware) structure by the physical tree. These two trees are interconnected.



3.1 Logical tree

The logical tree represents the logical/geographical data image of a station.

Area

The *Area* comprises lower ranking nodes (sections, zones, elements) that are linked to a common alarm organization. The alarm organization can be set either to:

- *DAY* (Day mode, manned operation)
A danger event can be investigated by the on-site security personnel before external intervention squads (fire department) are summoned.
- *NIGHT* (Night mode, unmanned operation)
The intervention squads (fire department) are summoned immediately.

By means of "Event evaluation devices" the area controls the alarm devices (internal horn, external horn, remote transmission channels) in accordance with the requirements of the lower ranking nodes.

System limit: 4 areas per CC11.

Section

Detection sections collect the states of the affiliated *detection zones* and allow collective operation.

Control sections are used for joint control of the lower ranking *control zones*.

System limit: 255 per area.

Zone

Detection zones evaluate the information (danger levels) of the affiliated detection devices. They are responsible for the alarm decision.

Control zones contain the control logic for controlling the affiliated elements.

System limit: 1000 zones per CC11.

Element

Detection devices evaluate the information supplied by the detectors and transmit it to the higher ranking *detection zone*.

Control devices control the affiliated digital outputs.

System limit: 1000 elements per CC11.

3.2 Physical tree

The physical tree represents the installed hardware components of a station.

Station

The term *Station* refers to individual nodes on the *C-Bus*. Stations supply primarily information on faults in the connected hardware.

Currently the following stations exist: CC11, CT11 and CK11.

System limit: 16 stations per CS11.

Function unit

The term *function unit* refers to modules connected to the internal I-bus of the stations. Typical function units are detector modules, extinguishing control modules, digital I/O modules, etc.

System limit: 16 function units per CC11.

Device

Devices are transmitters or actors on a detector bus or digital inputs and outputs of a corresponding module. The device states are always represented in the logical tree via the affiliated element.

System limit: 1000 devices pro CC11.

3.3 Structure of the tree nodes

Tree nodes are database records with a certain data type (structure number, StrucNr) that receive a (station-wide) unique instance number (sequence number, SeqNr) at the time they are created.

Tree nodes contain one or several datapoints.

4 Integration of the CS11 architecture into the DMS7000

A CS11 system can be integrated into a DMS7000 network via a CK11 gateway. Due to the dissimilarity of the systems special measures must be taken.

4.1 Basis for integration

The telegram functionality of the CS11 is oriented toward the CS10 fire detection system. Existing telegrams are re-used as far as possible.

The generous CS11 System limit as well as its complex information structuring cannot be transported by means of the DSM7000 telegram structure on a 1:1 basis. For this reason the following rules apply:

- The two telegram address fields ADF1 and ADF2 are combined (ADF1/2) for representing the datapoint address of a node. The value in ADF1/2 is derived from the unique SeqNr of the CC11 data base.
- The SeqNr based datapoint addressing supplies no information on the data type of the node or its relationship to other nodes. This information is supplied separately for each CC11 by means of a configuration file.

4.2 Addressing

The CS11 datapoint address is translated into the DMS7000 address based on the following rules:

- Sectors
The Sector field within the DMS7000 telegram is relevant for the datapoint addressing. This means that several datapoints of the same node can have the same ADF1/2 address but that they can be distinguished via the sector field.
Certain nodes cannot be assigned to a specific sector. For example an *area* contains several nodes of the FIRE, PLANT MONITORING, etc. sectors. In this case the nodes in the logical tree FIRE are assigned to the FIRE sector, whereas the nodes in the physical tree are assigned to the BASIC sector.
- Datapoint addressing based on sequence number
A CS11 datapoint is principally addressed by means of a unique sequence number (SeqNr) of the data base within a CC11 station. In the CK11 gateway the SeqNr is recalculated by a function in such a way that the resulting ADF1/2 number fits into the (historically grown) telegram address space between 0100 and 9FBF.
- Assigned datapoint addresses
The number ranges 0000 ... 00FF and A000 ... FFFF are reserved for assigned fixed ADF1/2 address. Fixed addresses are used in nodes that contain multiple datapoints (area, station).
- Addressing of the CS11 *areas*
The maximum 16 areas per CS11 correspond to the section addressing in the CS10.
The ADF1 field contains hexadecimal "A" followed by the hexadecimal CSX number of the area.
Example: A1 = area 1, A8 = area 8, AF = area 15, A0 = area 16.

The ADF2 field contains a fixed, 2-digit value that corresponds to the function of the datapoint.

Example: EF for the organization datapoint, CD for the General alarm datapoint, etc.

- Addressing of the CS11 *stations*
The ADF1 field contains a fixed number of "00".
The ADF2 field contains an assigned, two-digit value that corresponds to the purpose of the datapoint.
- DMS7000 network addresses
As the sequence numbers (SeqNr) are unique only within the corresponding CC11 *station*, additional measures must be taken to ensure the CS11-wide uniqueness of the datapoint address. This is accomplished by assigning a separate DMS7000 network address per CC11 station. In addition the CK11 station has its own DMS7000 network address.
As a consequence a maximum CS11 system occupies 5 DMS7000 network addresses.

4.3 CC11 Configuration file

The CC11 configuration file allows data map structuring/dimensioning of a management system that communicates with the CC11 via a DMS7000 network. This file contains all information that cannot be transported in the DMS7000 telegram. NOTE: A configuration file also relates to one CC11 station.

4.3.1 File format

The CC11 configuration data are stored in a text file that is structured according to the conventional "Text with separation character" format. This file can be imported directly into MS-ACCESS or EXCEL for further processing.

4.3.2 Syntax

EBNF symbols:

. End of sentence
"x" Terminal symbol
{ } 0..n repetitions
[] optional part
() precedence
| exclusive OR
' ' descriptive definition

Common:

file = Record{Record}.
Record = Field{"Field"} Newline.
Field = ""Text"".
Newline = 'Line Delimiter (e.g. DOS: <CR><LF>)'.

Syntax description:

Configfile = Record { Record }.
Record = RecordNr ";" (Record1 | Record2) Newline.
RecordNr = DecNumber.
Record1 = "1" ";" SeqNr ";" StrucNr ";" ParentSeqNr ";" TLSeqNr ";"
CSXLevel ";" Text1 ";" Text2 ";"
DMSSector ";" DMSAdf12 ";" Attribute ";" Layer ";" CSXNumber .
Record2 = "2" ";" SeqNr ";" StrucNr ";" ParentSeqNr ";" TLSeqNr ";"
CSXLevel ";" Text1 ";" Text2 ";"
DMSSector ";" DMSAdf12 ";" Attribute ";" Layer ";" CSXNumber ";"
FPlanNr ";" IntvTxtNr .
SeqNr = DecNumber.
StrucNr = DecNumber.
ParentSeqNr = DecNumber.
TLSeqNr = DecNumber.
CSXLevel = ""SYST"" | ""COMP"" | ""AREA"" | ""SECT"" | ""ZONE"" |
""ELEM"" | ""DBD"" | ""IBD"" | ""CBD"" | ""SIT"" | ""NONE"" .
Text1 = TextString.
Text2 = TextString.
DMSSector = ""A"" | ""B"" | ""C"" | ""D"" | ""E"" | ""0"" | ""X"" .
DMSAdf12 = HexNumber4.
Attribute = TextString.
Layer = TextString.
CSXNumber = TextString.
FPlanNr = DecNumber.
IntvTxtNr = DecNumber.
Newline = LineDelimiter.
LineDelimiter = 'End of Line Mark (OS dependent)'
DecNumber = ""DecDigit { DecDigit }"" .
HexNumber4 = ""HexDigit HexDigit HexDigit HexDigit"" .
DecDigit = "0" | "1" | "2" | "3" | "4" | "5" | "6" | "7" | "8" | "9" .
HexDigit = DecDigit | "A" | "B" | "C" | "D" | "E" | "F" .
TextString = ""{ Letter }"" .
Letter = 'Printable characters incl. space, characterset depends on
the one used in CC11 (ISO Latin x)'

4.3.3 Semantics

The semantics describe the valid contents and significance of the fields within the configuration file.

RecordNr

This field contains the line number of the entry in the configuration file.

RecordType

This field contains the type of entry. Currently the following record types have been defined:

- 1 = Record1
- 2 = Record2 (corresponds to Record1 + fire department site plan number + intervention text)

SeqNr

This field contains the sequence number (unique key in the database of a CS11 station) of the datapoint. If this field contains a value of 0, no instance of this datapoint exists. In this case this entry is used only for structural purposes.

StrucNr

This field contains the structure number (datatype) of the datapoint.

ParentSeqNr

This field contains the sequence number of the parent node of this datapoint.

TLSeqNr

TreeLinkSeqNr. This field contains the sequence number of the datapoint in the opposite tree. Within the *element* entry the TLSeqNr refers to the corresponding *device*. Within a *device* entry the TLSeqNr refers to the corresponding *element*.

CSXLevel

This field identifies the hierarchical level assigned to the datapoint. The following entries are valid:

AREA	Area
SECT	Section
ZONE	Zone
ELEM	Element
DBD	Device
IBD	Function unit
CBD	Station

Text1

This field contains the first part of the textual description for this datapoint. For datapoints within the logical tree it contains the description of the geographical/logical information. For datapoints within the physical tree it contains the description of the technical (hardware) information.

Text2

This field contains the second part of the textual description for this datapoint. For datapoints within the logical tree it contains the description of the geographical/logical information. For datapoints within the physical tree it contains the description of the technical (hardware) information.

DMSSector

This field describes the affiliated danger sector. Valid entries are:

A	=	Fire
B	=	Extinguishing
C	=	Intrusion
D	=	Gas
E	=	Plant monitoring
0 (Null)	=	Basic sector
X	=	Dummy entry. The whole record does not provide datapoints and is for structure purposes only

DMSAdf12

This field contains the ADF1/2 number which is derived from the SeqNr. From the viewpoint of the DMS7000 the ADV1/2 number is the address of the CC11 datapoint. This number is the primary key for assigning process information (telegrams) to structure information (configuration file).

Attribute

This field contains StrucNr-dependent specifics. If no specifics are needed this field contains a dash ("-").

StrucNr = 1562 (Remote transmission channel)

The attribute defines the utilization of the remote transmission channel. Valid entries are:

RTFIRE	Remote transmission channel ALARM
RTFAULT	Remote transmission channel FAULT
RTOTHER	Remote transmission channel OTHER

StrucNr = 1201 (CC11 station)

The attribute defines the DMS7000 network address of the CC11 station. Valid entries:
 nnn valid DMS7000 network address for control units, e.g. 111.

StrucNr = 1203 (CK11 station)

The attribute defines the DMS7000 network address of the CK11 station. Valid entries:
 nnn valid DMS7000 network address for gateways, e.g. 860.

Layer

This field identifies the tree assigned to this datapoint. The layer information is used as a prefix to the CSXNumber, because the latter is unique only within a tree. Valid entries:

LOG	Logical tree
PHYS	Physical tree
RTDEV	Assignment tree for remote transmission devices
RTREC	Assignment tree for remote transmission channel
IHORN	Assignment tree for internal horns
EHORN	Assignment tree for external horns

??? Unknown assignment, error

CSXNumber

This field identifies the position of the node within a tree. Valid entries:

Log. tree Area:Section:Zone:Element	Example:	001:003:087:009
Phys. tree CBD:IBD:DBD	Example:	001:010:054

Invalid entries are marked with "???"

FplanNr

This field contains the number of the assigned fire department site plan. 0 = No site plan available.

IntvTxtNr

This field contains the number of the corresponding action text. 0 = No text available

4.4 Information depth

The information depth of the individual datapoints is determined by the (limited) functionality of the DMS7000 network.

- Parallel information must be mapped to unique states or to separate datapoints.
- No differentiation between the subtypes within the same hierarchical levels ZONE, ELEMENT and IBD.
- Example: Single detector zone and multi-detector zone are both detector zones within the DMS7000.
- States that are too detailed are summarized in a collective state (example: Faults).

5 CS11 Behavior in the DMS7000

5.1 Description of the data structures

The same description scheme is used for each data structure:

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

In order to make the structure description identifiable also across several pages, the corresponding structure number is shown in front of the headings.

Example: **1601: Valid states**

If a data structure contains several datapoints, the individual datapoints are described separately according to the above scheme.

5.1.1 Quick-reference description

Provides information on the purpose of a specific data structure.

5.1.2 Valid states

Describes the valid states, their causes, and the applicable commands of the corresponding data structure.

5.1.3 State transition diagram

The state transition diagram shows the valid transitions.

- The Y-axis shows the actual state (FROM). The initial state (before polling) for the monitoring station is shown as underscoring.
- The X-axis shows the subsequent state (TO).
- At the intersection the initiating event and the resulting action are shown.

Notation: Event

 Action

Events are:

- Spontaneous state changes within the system control unit.
- Reactions to operator entries on the local CT11.
- Reactions to command telegrams from a management system.

State changes are shown with ↑ (incoming state) or ↓ (outgoing state).

Actions are the resulting DMS7000 telegrams. An action can comprise one or more telegrams. For this reason only the variable components *Separator*, *Data A* and *Data B* of the corresponding telegram are shown.

In the diagram invalid transitions are marked with “---”.



Unacknowledged/Acknowledged transitions within a specific state are not shown in the diagram for space reasons. A given state can always be acknowledged if the action telegram contains a separator = U.

When the management system is initialized (polling sequence) transitions are possible which according to the diagram would be invalid.

5.1.4 Telegram repertoire

Table that represents the telegram repertoire for MESSAGES and COMMANDS

The *Priority* field in the MESSAGES table shows the classification of the corresponding messages based on the following scale:

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

Based on the priority also the acknowledgment command telegram can be determined.

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

5.2 Hierarchical level: AREA

5.2.1 Structure 1801: FIRE area

Abstract representation of a FIRE area. The area contains the datapoints:

- ORGANIZATION
- GENERAL ALARM
- ALARM RT DELAY (RT = Remote transmission)
- PART OF SYSTEM OFF
- FAULT
- RT-DEVICE (datapoint formerly presented in structure 1563)

Datapoint ORGANIZATION (ORG)

This datapoint relates to the alarm organization (CAC) within the area.

1801/ORG: Addressing

Sector: FIRE

ADF1/2: aaEF(aa = "A" + <area number>, example: A1EF = Organization in area 1)

1801/ORG: Valid states

State	Description	Valid commands
MANNED (Day mode)	The area operates in <i>Day</i> mode. When an alarm occurs external intervention squads are summoned only after predefined delay times (V1, V2) or systematic human action (pressing an manual callpoint).	UNMANNED
UNMANNED (Night mode)	The area operates in <i>Night</i> mode. When an alarm occurs external intervention squads are summoned immediately.	MANNED

1801/ORG: State transition diagram

From	To	NIGHT MODE	DAY MODE
NIGHT MODE		---	↑Day mode ----- N 55 61
DAY MODE		↑Night mode ----- N 55 60	---

1801/ORG: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
W	<CCaddr>	<adf12>	N	55	60	ANOMALY	Organization	Night (Night mode)
W	<CCaddr>	<adf12>	N	55	61	ANOMALY	Organization	Tag (Day mode)

1801/ORG: Telegram repertoire COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
W	<CCaddr>	<adf12>	R	55	55	Organization	On (Night mode)
W	<CCaddr>	<adf12>	R	55	56	Organization	Off (Day mode)

Datapoint ALARM (ALM)

This datapoint contains the alarm level of the corresponding area.

1801/ALM: Addressing

Sector: FIRE

ADF1/2: aaCD (aa = "A" + <area number>, example: A2CD = alarm in area 2)

1801/ALM: Valid states

State	Description	Valid commands
RESET	The area is not in the alarm state.	
LOCAL ALARM	Cause: In <i>Day</i> mode an alarm of an automatic detector has been detected.	ACKNOWLEDGE RESET
GENERAL ALARM	Cause: In <i>Day</i> mode an alarm triggered by a manual callpoint has been detected. In <i>Day</i> mode a pending alarm has not been reset within the alarm monitoring time V1. In <i>Day</i> mode a pending alarm has not been reset within the alarm monitoring time V2. An alarm has been detected in <i>Night</i> mode.	ACKNOWLEDGE RESET



The ALARM datapoint itself can be neither acknowledged nor reset. In this case the above commands relate to the entire area, that is, the corresponding command is transmitted to all lower ranking datapoints and results in the acknowledgment or resetting of the entire area.

1801/ALM: State transition diagram

From	To	LOCAL ALARM	GENERAL ALARM	RESET
LOCAL ALARM		---	↑ General alarm ----- Q 06 00	↓ Local alarm ----- N 05 85
GENERAL ALARM		---	---	↓ General alarm ----- N 06 85
RESET		↑ Local alarm ----- Q 05 00	---	---

1801/ALM: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
W	<CCaddr>	<adf12>	Q	05	00	ALARM	Local alarm	---
W	<CCaddr>	<adf12>	N	05	85	NORMAL	Local alarm	Reset
W	<CCaddr>	<adf12>	Q	06	00	ALARM	General alarm	---
W	<CCaddr>	<adf12>	N	06	85	NORMAL	General alarm	Reset

1801/ALM: Telegram repertoire COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
W	<CCaddr>	<adf12>	R	05	80	Local alarm	Acknowledgment (Alarm)
W	<CCaddr>	<adf12>	R	05	83	Local alarm	Reset
W	<CCaddr>	<adf12>	R	06	80	General alarm	Acknowledgment (Alarm)
W	<CCaddr>	<adf12>	R	06	83	General alarm	Reset

Datapoint: ALARM RT DELAY (ARD)

This datapoint represents the state of the “Alarm Remote Transmission Delay” within the area. If the Alarm Remote Transmission Delay is switched off while an alarm event with RT requirements is pending, the current monitoring times are bypassed and the remote transmission is activated immediately.

1801/ARD: Addressing

Sector: FIRE

ADF1/2: aaCC (aa = “A” + <area number>, example: A3CC = Alarm RT delay in area 3)

1801/ARD: Valid states

State	Description	Valid commands
ON	The alarm remote transmission delay of the area is switched on (normal position).	OFF
OFF	The alarm remote transmission of the area is switched off. Cause: - During an alarm event the “Alarm delay off” button was pressed on the CT 11. The current RT delays are bypassed and the remote transmission initiated immediately. - Same as above, but instead of the CT-11 the “R 20 56” telegram was received from a management system.	---

1801/ARD: State transition diagram

From	To	OFF	ON
OFF		---	↓Alarm ----- N 20 55
ON		↑ Off ----- Q 20 56	---

1801/ARD: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
W	<CCaddr>	<adf12>	Q	20	56	ANOMALY	RT delay alarm	Off
W	<CCaddr>	<adf12>	N	20	55	NORMAL	RT delay alarm	On

1801/ARD: Telegram repertoire COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
W	<CCaddr>	<adf12>	R	20	56	Alarm RT delay	Off

Datapoint: PART OF SYSTEM OFF (PSO)

This datapoint becomes active when one or more parts of the system have been switched off in the corresponding area.

1801/PSO: Addressing

Sector: FIRE

ADF1/2: aaEC (aa = "A" + <area number>,

example: A4EC = Datapoint 'Part of system Off' in area 4)

1801/PSO: Valid states

State	Description	Valid commands
INACTIVE	No system parts are switched off in the corresponding area.	---
ACTIVE	Parts of the system are switched off in the corresponding area.	---

1801/PSO: State transition diagram

From	To	ACTIVE	INACTIVE
ACTIVE		---	↓Active ----- N 75 3B
INACTIVE		↑ Active ----- Q 75 3A	---

1801/PSO: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
W	<CCaddr>	<adf12>	Q	75	3A	ANOMALY	Part of system Off	---
W	<CCaddr>	<adf12>	N	75	3B	NORMAL	Part of system Off	End

1801/PSO: Telegram repertoire COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
---	---	---	---	---	---	---	---

Datapoint: FAULT (FLT)

This datapoint becomes active if one or several faults exist in the corresponding area.

1801/FLT: Addressing

Sector: FIRE

ADF1/2: aaED (aa = "A" + <area number>, example: A1ED = datapoint 'Fault' in area 1)

1801/FLT: Valid states

State	Description	Valid commands
INACTIVE	No faults exist in the corresponding area.	---
ACTIVE	Faults exist in the corresponding area.	---

1801/FLT: State transition diagram

	To	ACTIVE	INACTIVE
From			
ACTIVE		---	↓Active ----- N 74 3B
INACTIVE		↑ Active ----- Q 74 3A	---

1801/FLT: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
W	<CCaddr>	<adf12>	Q	74	3A	FAULT	Fault	---
W	<CCaddr>	<adf12>	N	74	3B	NORMAL	Fault	End

1801/FLT: Telegram repertoire COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
---	---	---	---	---	---	---	---

Datapoint: RT-DEVICE (RTD)

This datapoint reflects the current state of the remote transmission device associated to this area.

1801/RTD: Addressing

Sector: FIRE

ADF1/2: aaEA (aa = "A" + <area number>,
example: A2EA = datapoint 'RT-Device' in area 2)

1801/RTD: Valid states

State	Description	Valid commands
INACTIVE	The affiliated remote transmission device is in the quiescent state.	
DISABLED	The affiliated remote transmission devices is unable to transmit the requested message.	ACKNOWLEDGE
FAULTY	Correct functioning of the device is not assured. The affiliated output is in the quiescent state. Cause: Hardware fault	ACKNOWLEDGE

1801/RTD: State transition diagram

From	To	DISABLED	FAULTY	INACTIVE
DISABLED		---	↓ Disabled & Faulty ----- U 32 46	↓ Disabled ----- N 32 4D
FAULTY		---	---	↓ Faulty ----- N 32 4D
INACTIVE		↑ Disabled ----- U 32 5D	↑ Faulty ----- U 32 46	---

1801/RTD: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
W	<CCaddr>	<adf12>	U/Q	32	46	FAULT	Remote transmission device	Faulty
W	<CCaddr>	<adf12>	N	32	4D	NORMAL	Remote transmission device	Inactive
W	<CCaddr>	<adf12>	U/Q	32	5D	FAULT	Remote transmission device	Disabled

1801/RTD: Telegram repertoire COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
W	<CCaddr>	<adf12>	R	32	86	Remote transmission device	Acknowledgment (fault)

5.3 Hierarchical level: SECTION (detection)

The hierarchical level SECTION basically summarizes the states of the affiliated zones. In special cases (example: extinguishing section) additional, section-specific datapoints exist.

5.3.1 Structure 1701: FIRE Section

The FIRE section has no own functionality but contains collective information of the affiliated detection zones. With respect to the DMS7000 network the ALARM datapoint is made available as a non-acknowledgeable summary alarm.

1701: Addressing
Sector: FIRE
ADF1/2: Based on sequence number

1701: Valid states

State	Description	Valid commands
RESET	No alarms in this section.	---
ALARM	One or several detection zones within this section are in the alarm state.	ACKNOWLEDGE RESET



The ALARM datapoint can be neither acknowledged nor reset. In this case the above commands relate to the entire section, that is, the corresponding command is transmitted to all lower ranking datapoints and leads to the acknowledgment or reset of all zones within the corresponding section.

1701: State transition diagram

From	To	ALARM	RESET
ALARM		---	↓ Alarm ----- N 01 85
RESET		↑ Alarm ----- Q 01 00	---

1701: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
W	<CCaddr>	<adf12>	Q	01	00	ALARM	Alarm	---
W	<CCaddr>	<adf12>	N	01	85	NORMAL	Alarm	Rest

1701: Telegram repertoire COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
W	<CCaddr>	<adf12>	R	01	80	Alarm	Acknowledgment (Alarm)
W	<CCaddr>	<adf12>	R	01	83	Alarm	Reset

1701: Telegram repertoire COMMANDS (ZONE commands from SECTION level)
 It is valid to use selected ZONE level commands on SECTION level. The command is then propagated to ALL zones belonging to the respective section. These command telegrams always contain the ADF1/2 of the respective section!

Sector	DMS Addr	ADF1/2	Sep	Data A	Data B	Text A	Text B
W	<CCaddr>	<SECT-adf12>	R	01	80	Alarm	Acknowledgment (Alarm)
W	<CCaddr>	<SECT-adf12>	R	01	83	Alarm	Reset
W	<CCaddr>	<SECT-adf12>	R	03	89	Warning	Acknowledgment (Anomaly)
W	<CCaddr>	<SECT-adf12>	R	64	3F	Zone	Revision
W	<CCaddr>	<SECT-adf12>	R	64	55	Zone	on
W	<CCaddr>	<SECT-adf12>	R	64	56	Zone	off
W	<CCaddr>	<SECT-adf12>	R	64	57	Zone	Test

5.3.2 Structure 1702: EXTINGUISHING section

The EXTINGUISHING section represents the state of the extinguishing control for an extinguishing section. The following datapoints are offered:

- EXTINGUISHING
- RELEASE
- FAULT

Datapoint EXTINGUISHING (EAL)

This datapoint contains the alarm information of the corresponding extinguishing section.

1702/EAL: Addressing

Sector: EXTINGUISHING

ADF1/2: bb**EB** (bb = "B" + <IBus number Extinguishing module>, example: B5EB = alarm in section 5)



On the DMS7000 side the CSX number cannot be used for addressing the extinguishing section because its number range (1..99) is too large. For this reason the IBUS number of the affiliated extinguishing module (Hex 0..F) is used for addressing. The CSX number of the extinguishing section can be found in the configuration file.

1702/EAL: Valid states

State	Description	Valid commands
RESET	The section is not in the alarm state.	
EXTING. ALARM MAN. ACTIVATION	The extinguishing system has been activated manually, that is, without an extinguishing command of the CC11.	ACKNOWLEDGE RESET
EXTING. ALARM AUTOM. DETECTOR	An affiliated extinguishing zone has transmitted an extinguishing command to the section. At this point the extinguishing sequence is started and can only be interrupted by pressing the Stop button (within the specified time).	ACKNOWLEDGE RESET
EXTING: ALARM MAN. DETECTOR	The extinguishing button has been actuated. At this point the extinguishing sequence is started and can only be interrupted by pressing the Stop button (within the specified time).	ACKNOWLEDGE RESET

1702/EAL: State transition diagram

From	To	EXTING. ALRM MAN. ACTIVATION	EXTING. ALARM AUTOM. DETEC- TOR	EXTING. ALARM MAN. DETECTOR	RESET
EXTING. ALARM MAN. RELEASE		---	---	---	↓ Extinguishing alarm ----- N 08 85
EXTING. ALARM AUTOM. DETEC- TOR		---	---	---	↓ Extinguishing alarm ----- N 08 85
EXTING. ALARM MAN. DETECTOR		---	---	---	↓ Extinguishing alarm ----- N 08 85
RESET		↑ Extinguishing activated manually ----- U 08 00	↑ Extinguishing command of extin- guishing zone ----- U 08 01	↑ Extinguishing button pressed ----- U 08 02	---

1702/EAL: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
L	<CCaddr>	<adf12>	U	08	00	ALARM	Extinguishing alarm	---
L	<CCaddr>	<adf12>	U	08	01	ALARM	Extinguishing alarm	Autom. detector
L	<CCaddr>	<adf12>	U	08	02	ALARM	Extinguishing alarm	Man. detector
L	<CCaddr>	<adf12>	N	08	85	NORMAL	Extinguishing alarm	Reset

1702/EAL: Telegram repertoire COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
L	<CCaddr>	<adf12>	R	08	80	Extinguishing alarm	Acknowledgment (Alarm)
L	<CCaddr>	<adf12>	R	08	83	Extinguishing alarm	Reset

Datapoint RELEASE (REL)

This datapoint contains the state of the extinguishing release system.

1702/REL: Addressing

Sector: EXTINGUISHING

ADF1/2: bb**AE** (bb = "B" + <IBus number Extinguishing module>, example: B8AE = Release in section 8)

1702/REL: Valid states

State	Description	Valid commands
ENABLED	The activation of the extinguishing system (if alarm criteria are met) is enabled.	DISABLE DISABLE AUTOM. RELEASE
AUTOM. RELEASE DISABLED	The extinguishant release by automatic detectors is inhibited.	ENABLE
DISABLED	The extinguishant can neither be released manually nor by automatic detectors.	ENABLE
ACTIVE	The extinguishant has been released (valve feedback).	---

1702/REL: State transition diagram

From	To	ACTIVE	DISABLED	AUTOMATIC RE-LEASE DISABLED	ENABLED
ACTIVE		---	---	---	↓ Extinguishant reloaded ----- N 4D 5A
DISABLED		---	---	---	↑ Release enabled ----- N 4D 5A
AUTOMATIC RE-LEASE DISABLED		---	---	---	↓ Autom. release enabled ----- N 4D 5A
ENABLED		↑ Extinguishant released ----- Q 4D 4F	↑ Release disabled ----- U 4D 5D	↑ Autom. release disabled ----- Q 4D 5B	---

1702/REL: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
L	<CCaddr>	<adf12>	Q	4D	4F	ANOMALY	Release	Active
L	<CCaddr>	<adf12>	N	4D	5A	NORMAL	Release	enabled
L	<CCaddr>	<adf12>	Q	4D	5B	ANOMALY	Release	Autom. release disabled
L	<CCaddr>	<adf12>	U/Q	4D	5D	ANOMALY	Release	disabled

1702/REL: Telegram repertoire COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
L	<CCaddr>	<adf12>	R	4D	5A	Release	enabled
L	<CCaddr>	<adf12>	R	4D	5B	Release	Autom. release disabled
L	<CCaddr>	<adf12>	R	4D	5D	Release	disabled
L	<CCaddr>	<adf12>	R	4D	89	Release	Acknowledgment (anomaly)

1702: Telegram repertoire COMMANDS (ZONE commands from SECTION level)

It is valid to use selected ZONE level commands on SECTION level. The command is then propagated to ALL zones belonging to the respective section. These command telegrams always contain the ADF1/2 of the respective section!

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
L	<CCaddr>	<SECT-adf12>	R	03	89	Warning	Acknowledgment (Anomaly)
L	<CCaddr>	<SECT-adf12>	R	04	80	Alarm	Acknowledgment (Alarm)
L	<CCaddr>	<SECT-adf12>	R	04	83	Alarm	Reset
L	<CCaddr>	<SECT-adf12>	R	08	80	Alarm	Acknowledgment (Alarm)
L	<CCaddr>	<SECT-adf12>	R	08	83	Alarm	Reset
L	<CCaddr>	<SECT-adf12>	R	64	3F	Zone	Revision
L	<CCaddr>	<SECT-adf12>	R	64	55	Zone	on
L	<CCaddr>	<SECT-adf12>	R	64	56	Zone	off
L	<CCaddr>	<SECT-adf12>	R	64	57	Zone	Test

Datapoint: FAULT (FLT)

This datapoint becomes active if one or more faults exist in the corresponding extinguishing section.

1702/FLT: Addressing

Sector: EXTINGUISHING

ADF1/2: **bbED** (bb = "B" + <I-Bus number Extinguishing module>, example: B6ED = Release in section 6)

1702/FLT: Valid states

State	Description	Valid commands
INACTIVE	No fault in the corresponding extinguishing section.	---
ACTIVE	Faults exist in the corresponding extinguishing section. Causes: - Loss of extinguishing agent - Broken glass of manual callpoint - Faulty "Extinguishing valve", "Control device", "Extinguishing agent", "Manual release button", "Emergency stop/Inhibit", "Warning horn" or "Warning beacon" - Extinguishing system not ready (valve active but no extinguishing agent available)	ACKNOWLEDGE

1702/FLT: State transition diagram

	To	ACTIVE	INACTIVE
From			
ACTIVE		---	↓ Active ----- N 3A 3B
INACTIVE		↑ Active ----- U 3A 3A	---

1702/FLT: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
L	<CCaddr>	<adf12>	U/Q	3A	3A	FAULT	Fault	---
L	<CCaddr>	<adf12>	N	3A	3B	NORMAL	Fault	End

1702/FLT: Telegram repertoire COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
L	<CCaddr>	<adf12>	R	3A	86	Fault	Acknowledgment

5.4 Hierarchical level: SECTION (control)

The hierarchical level SECTION basically summarizes the states of the affiliated control zones.

5.4.1 Structure 1751: Control Section

Abstract representation of a CS11 control section. The control section does not provide DMS7000-relevant data.

5.5 Hierarchical level: ZONE (Detection)

The CSX detection level ZONE is responsible for the alarm decision based on the information supplied by the affiliated elements and the parameterized decision criteria. The term "Zone" (Detection) corresponds to the term *Zone* in the DMS7000.

5.5.1 Structure 1601: Single-detector zone

In a single-detector zone only one detection device assigned to the zone needs to respond in order to reach the ALARM state.

1601: Addressing
Sector: FIRE
ADF1/2: Based on sequence number

1601: Valid states

State	Description	Valid commands
NORMAL	The zone is in the ON state. Incoming danger levels are processed.	OFF TEST REVISION RENOVATION
WARNING	An affiliated detection device has reached danger level 2 (pre-alarm).	ACKNOWLEDGE (RESET) OFF TEST
ALARM	An affiliated detection device has reached danger level 3 (alarm).	ACKNOWLEDGE RESET OFF TEST
OFF	Incoming danger levels are not processed. Note: If all elements affiliated with the zone are switched off, the zone state changes automatically to OFF.	ON TEST
TEST	Incoming danger levels are not processed. The responding detection device switches temporarily to the TEST ALARM state.	ON OFF
RENOVATION	The affiliated detection devices respond <u>more slowly</u> than in the normal state.	OFF TEST REVISION
REVISION	The affiliated detection devices respond <u>more quickly</u> than in the normal state.	OFF TEST RENOVATION
NOT READY	A pending danger level has been detected when the zone was switched on.	OFF TEST

1601: State transition diagram

From	To	WARNING	ALARM	OFF	TEST	REVISION	RENOVATION	NOT READY	NORMAL
WARNING	---	---	↑ Alarm ----- N 03 3B U 01 01	↑ Off ----- N 03 3B Q 64 56	↑ Test ----- N 03 3B Q 64 57	↓ WARNING & mode = Revis. ----- N 03 3B N 64 3F	↓ WARNING & mode = Reno. ----- N 03 3B N 64 3E	---	↓ WARNING ----- N 03 3B N 64 3C
ALARM	---	---	---	↑ Off ----- N 01 85 Q 64 56	↑ Test ----- N 01 85 Q 64 57	↑ Reset & mode = Revis. ----- N 01 85 N 64 3F	↑ Reset & mode = Reno. ----- N 01 85 N 64 3E	---	↑ Reset & Danger = 0 ----- N 01 85 N 64 3C
OFF	---	---	---	---	↑ Test ----- Q 64 57	---	---	↑On & Danger > 2 ----- Q 64 5F	↑ On ----- N 64 3C
TEST	---	---	---	↑ Off ----- Q 64 56	---	---	---	↑On & Danger > 2 ----- Q 64 5F	↑ On ----- N 64 3C
REVISION	↑WARNING ----- U 03 3A	↑ Alarm ----- U 01 01	↑ Off ----- Q 64 56	↑ Test ----- Q 64 57	---	↑Renov. ----- Q 64 3E	---	---	↑ On ----- N 64 3C
RENOVA-TION	↑WARNING ----- U 03 3A	↑ Alarm ----- U 01 01	↑ Off ----- Q 64 56	↑ Test ----- Q 64 57	↑Revision ----- Q 64 3F	---	---	---	↑ On ----- N 64 3C
NOT READY	---	---	↑ Off ----- Q 64 56	↑ Test ----- Q 64 57	---	---	---	---	↑ On ----- N 64 3C
NORMAL	↑WARNING ----- U 03 3A	↑ Alarm ----- U 01 01	↑ Off ----- Q 64 56	↑ Test ----- Q 64 57	↑Revision ----- Q 64 3F	↑Renov. ----- Q 64 3E	---	---	---

1601: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
W	<CCaddr>	<adf12>	U/Q	01	01	ALARM	Alarm	Autom. detector
W	<CCaddr>	<adf12>	N	01	85	NORMAL	Alarm	Reset
W	<CCaddr>	<adf12>	U/Q	03	3A	ANOMALY	WARNING	---
W	<CCaddr>	<adf12>	N	03	3B	NORMAL	WARNING	End
W	<CCaddr>	<adf12>	Q	64	3E	ANOMALY	Zone	Renovation
W	<CCaddr>	<adf12>	Q	64	3F	ANOMALY	Zone	Revision
W	<CCaddr>	<adf12>	Q	64	56	ANOMALY	Zone	Off
W	<CCaddr>	<adf12>	Q	64	57	ANOMALY	Zone	Test
W	<CCaddr>	<adf12>	Q	64	5F	ANOMALY	Zone	Not ready
W	<CCaddr>	<adf12>	N	64	3C	NORMAL	Zone	Normal

1601: Telegram repertoire: COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
W	<CCaddr>	<adf12>	R	01	80	Alarm	Acknowledgment (Alarm)
W	<CCaddr>	<adf12>	R	01	83	Alarm	Reset
W	<CCaddr>	<adf12>	R	03	89	WARNING	Acknowledgment (anomaly)
W	<CCaddr>	<adf12>	R	03	8D ¹	WARNING	Reset (anomaly)
W	<CCaddr>	<adf12>	R	64	3E	Zone	Renovation
W	<CCaddr>	<adf12>	R	64	3F	Zone	Revision
W	<CCaddr>	<adf12>	R	64	55	Zone	On
W	<CCaddr>	<adf12>	R	64	56	Zone	Off
W	<CCaddr>	<adf12>	R	64	57	Zone	Test

¹ Only applicable if the "Warning" state has been defined as resettable in the CC11 configuration.

5.5.2 Structure 1602: Multi-Logic zone FIRE sector (A)

In a multi-logic zone the alarm decision is based on the response of multiple detection devices affiliated with the zone. The conditions can be parameterized within the CC11.

1602/A: Addressing

Sector: FIRE

ADF1/2: Based on sequence number

1602/A: Valid states

State	Description	Valid commands
NORMAL	The zone is in the ON state. Incoming danger levels are processed.	OFF TEST REVISION RENOVATION
WARNING	An affiliated detection device has reached the level 2 (pre-alarm).	ACKNOWLEDGE (RESET) OFF TEST
ALARM	Several affiliated detection devices have reached the danger level required for an alarm decision.	ACKNOWLEDGE RESET OFF TEST
OFF	Incoming danger levels are not processed. Note: If all elements affiliated with the zone are switched off, the state of the zone switches automatically to OFF.	ON TEST
TEST	Incoming danger levels are not processed. The responding detection device switches temporarily to the TEST ALARM state.	ON OFF
RENOVATION	The affiliated detection devices respond <u>more slowly</u> than in the normal state.	OFF TEST REVISION
REVISION	The affiliated detection devices respond <u>more quickly</u> than in the normal state.	OFF TEST RENOVATION
NOT READY	A pending danger level has been detected when the zone was switched on.	OFF TEST

1602a: State transition diagram

From	To	WARNING	ALARM	OFF	TEST	REVISION	RENOVATION	NOT READY	NORMAL
WARNING	---	---	↑ Alarm ----- N 03 3B U 01 01	↑ Off ----- N 03 3B Q 64 56	↑ Test ----- N 03 3B Q 64 57	↓ WARNING & mode = Revis. ----- N 03 3B N 64 3F	↓ WARNING & mode = Reno. ----- N 03 3B N 64 3E	---	↓ WARNING ----- N 03 3B N 64 3C
ALARM	---	---	---	↑ Off ----- N 01 85 Q 64 56	↑ Test ----- N 01 85 Q 64 57	↑ Reset & mode = Revis. ----- N 01 85 N 64 3F	↑ Reset & mode = Reno. ----- N 01 85 N 64 3E	---	↑ Reset & Danger = 0 ----- N 01 85 N 64 3C
OFF	---	---	---	---	↑ Test ----- Q 64 57	---	---	↑On & Danger > 2 ----- Q 64 5F	↑ On ----- N 64 3C
TEST	---	---	---	↑ Off ----- Q 64 56	---	---	---	↑On & Danger > 2 ----- Q 64 5F	↑ On ----- N 64 3C
REVISION	↑WARNING ----- U 03 3A	↑ Alarm ----- U 01 01	↑ Off ----- Q 64 56	↑ Test ----- Q 64 57	---	↑Renov. ----- Q 64 3E	---	---	↑ On ----- N 64 3C
RENOVA-TION	↑WARNING -----U 03 3A	↑ Alarm ----- U 01 01	↑ Off ----- Q 64 56	↑ Test ----- Q 64 57	↑Revision ----- Q 64 3F	---	---	---	↑ On ----- N 64 3C
NOT READY	---	---	---	↑ Off ----- Q 64 56	↑ Test ----- Q 64 57	---	---	---	↑ On ----- N 64 3C
NORMAL	↑WARNING -----U 03 3A	↑ Alarm ----- U 01 01	↑ Off ----- Q 64 56	↑ Test ----- Q 64 57	↑Revision ----- Q 64 3F	↑Renov. ----- Q 64 3E	---	---	---

1602/A: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
W	<CCaddr>	<adf12>	U/Q	01	01	ALARM	Alarm	Autom. detector
W	<CCaddr>	<adf12>	N	01	85	NORMAL	Alarm	Reset
W	<CCaddr>	<adf12>	U/Q	03	3A	ANOMALY	Warning	---
W	<CCaddr>	<adf12>	N	03	3B	NORMAL	Warning	End
W	<CCaddr>	<adf12>	Q	64	3E	ANOMALY	Zone	Renovation
W	<CCaddr>	<adf12>	Q	64	3F	ANOMALY	Zone	Revision
W	<CCaddr>	<adf12>	Q	64	56	ANOMALY	Zone	Off
W	<CCaddr>	<adf12>	Q	64	57	ANOMALY	Zone	Test
W	<CCaddr>	<adf12>	Q	64	5F	ANOMALY	Zone	Not ready
W	<CCaddr>	<adf12>	N	64	3C	NORMAL	Zone	Normal

1602/A: Telegram repertoire COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
W	<CCaddr>	<adf12>	R	01	80	Alarm	Acknowledgment (Alarm)
W	<CCaddr>	<adf12>	R	01	83	Alarm	Reset
W	<CCaddr>	<adf12>	R	03	89	Warning	Acknowledgment (anomaly)
W	<CCaddr>	<adf12>	R	03	8D ²	Warning	Reset (anomaly)
W	<CCaddr>	<adf12>	R	64	3E	Zone	Renovation
W	<CCaddr>	<adf12>	R	64	3F	Zone	Revision
W	<CCaddr>	<adf12>	R	64	55	Zone	On
W	<CCaddr>	<adf12>	R	64	56	Zone	Off
W	<CCaddr>	<adf12>	R	64	57	Zone	Test

² Only applicable if the Warning" state has been defined as resettable in the CC11 configuration.

5.5.3 Structure 1602: Multi-Logic zone EXTINGUISHING sector (B)

In a multi-logic zone the alarm decision is based on the response of several detection devices affiliated with the zone. The conditions can be parameterized within the CC11.

1602/B: Addressing
Sector: EXTINGUISHING
ADF1/2: Based on sequence number

1602/B: Valid states

State	Description	Valid commands
NORMAL	The zone is in the ON state. Incoming danger levels are processed.	OFF TEST REVISION RENOVATION
WARNING	An affiliated detection device has reached danger level 2 (WARNING).	ACKNOWLEDGE (RESET) OFF TEST
PRE-ALARM	An affiliated detection device has reached danger level 3.	ACKNOWLEDGE RESET OFF TEST
EXTINGUISHING	A second (or third, depending on the configuration) detection device has reached danger level 3. The extinguishing alarm transmitted to the higher ranking section serves as the start command for the extinguishing sequence (→ Extinguishing command).	ACKNOWLEDGE RESET OFF TEST
OFF	Incoming danger levels are not processed. Note: If all elements affiliated with the zone are switched off, the zone state changes automatically to OFF.	ON TEST
TEST	Incoming danger levels are not processed. The responding detection device switches temporarily to the TEST ALARM state.	ON OFF
RENOVATION	The affiliated detection devices respond <u>more slowly</u> than in the normal state.	OFF TEST REVISION
REVISION	The affiliated detection devices respond <u>more quickly</u> than in the normal state.	OFF TEST RENOVATION
NOT READY	A pending danger level has been detected when the zone was switched on.	OFF TEST

1602/B: State transition diagram

From	To	WARNING	PRE-ALARM	EXTINGUISHING ALARM	OFF	TEST	REVISION	RENOVATION	NOT READY	NORMAL
WARNING		---	↑ Pre-alarm ----- N 03 3B U 04 01	---	↑ Off ----- N 03 3B Q 64 56	↑ Test ----- N 03 3B Q 64 57	↓ Warn. & mode = Rev ----- N 03 3B N 64 3F	↓ Warn. & mode = Ren ----- N 03 3B N 64 3E	---	↓ WARNING ----- N 03 3B N 64 3C
PRE-ALARM		---	---	↑ Extinguishing alarm ----- U 08 01	↑ Off ----- N 04 85 Q 64 56	↑ Test ----- N 04 85 Q 64 57	↑ Reset & mode = Rev ----- N 01 85 N 64 3F	↑ Reset & mode = Ren ----- N 01 85 N 64 3E	---	↑ Reset & Danger = 0 ----- N 04 85 N 64 3C
EXTINGUISHING ALARM		---	---	---	↑ Off ³ ----- N 08 85 Q 64 56	↑ Test ⁴ ----- N 08 85 Q 64 57	↑ Reset & mode = Rev ----- N 01 85 N 64 3F	↑ Reset & mode = Ren ----- N 01 85 N 64 3E	---	↑ Reset & Danger = 0 ----- N 08 85 N 64 3C
OFF		---	---	---	---	↑ Test ----- Q 64 57	---	---	↑ On & Danger > 0 ----- Q 64 5F	↑ On ----- N 64 3C
TEST		---	---	---	↑ Off ----- Q 64 56	---	---	---	↑ On & Danger > 0 ----- Q 64 5F	↑ On ----- N 64 3C
REVISION		↑ WARNING ----- U 03 3A	↑ Pre-alarm ----- U 04 01	---	↑ Off ----- Q 64 56	↑ Test ----- Q 64 57	---	↑ Renov. ----- Q 64 3E	---	↑ On ----- N 64 3C
RENOVATION		↑ WARNING ----- U 03 3A	↑ Pre-alarm ----- U 04 01	---	↑ Off ----- Q 64 56	↑ Test ----- Q 64 57	↑ Revision ----- Q 64 3F	---	---	↑ On ----- N 64 3C
NOT READY		---	---	---	↑ Off ----- Q 64 56	↑ Test ----- Q 64 57	---	---	---	↑ On ----- N 64 3C
NORMAL		↑ WARNING ----- U 03 3A	↑ Pre-alarm ----- U 04 01	---	↑ Off ----- Q 64 56	↑ Test ----- Q 64 57	↑ Revision ----- Q 64 3F	↑ Renov. ----- Q 64 3E	---	---

³ When the zone is switched off in the EXTINGUISHING ALARM state, the extinguishing activation command in the section is not revoked.

⁴ When this zone is switched to test mode in the EXTINGUISHING ALARM state, the extinguishing activation command in the section is not revoked.

1602/B: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
L	<CCaddr>	<adf12>	U/Q	03	3A	ANOMALY	Warning	---
L	<CCaddr>	<adf12>	N	03	3B	NORMAL	Warning	End
L	<CCaddr>	<adf12>	U/Q	04	01	ALARM	Pre-alarm	Autom. detector
L	<CCaddr>	<adf12>	N	04	85	NORMAL	Pre-alarm	Reset
L	<CCaddr>	<adf12>	U/Q	08	01	ALARM	Extinguishing alarm	Autom. detector
L	<CCaddr>	<adf12>	N	08	85	NORMAL	Extinguishing alarm	Reset
L	<CCaddr>	<adf12>	Q	64	3E	ANOMALY	Zone	Renovation
L	<CCaddr>	<adf12>	Q	64	3F	ANOMALY	Zone	Revision
L	<CCaddr>	<adf12>	Q	64	56	ANOMALY	Zone	Off
L	<CCaddr>	<adf12>	Q	64	57	ANOMALY	Zone	Test
L	<CCaddr>	<adf12>	Q	64	5F	ANOMALY	Zone	Not ready
L	<CCaddr>	<adf12>	N	64	3C	NORMAL	Zone	Normal

1602/B: Telegram repertoire COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
L	<CCaddr>	<adf12>	R	03	89	Warning	Acknowledgment (anomaly)
L	<CCaddr>	<adf12>	R	03	8D ⁵	Warning	Reset (anomaly)
L	<CCaddr>	<adf12>	R	04	80	Pre-alarm	Acknowledgment (Alarm)
L	<CCaddr>	<adf12>	R	04	83	Pre-alarm	Reset
L	<CCaddr>	<adf12>	R	08	80	Extinguishing alarm	Acknowledgment (Alarm)
L	<CCaddr>	<adf12>	R	08	83	Extinguishing alarm	Reset
L	<CCaddr>	<adf12>	R	64	3E	Zone	Renovation
L	<CCaddr>	<adf12>	R	64	3F	Zone	Revision
L	<CCaddr>	<adf12>	R	64	55	Zone	On
L	<CCaddr>	<adf12>	R	64	56	Zone	Off
L	<CCaddr>	<adf12>	R	64	57	Zone	Test

⁵ Only applicable if the "Warning" state has been defined as resettable in the CC11 configuration.

5.5.4 Structure 1605: Manual callpoint zone

In a manual callpoint zone only one detection device assigned to the zone needs to respond in order to reach the ALARM state.

1605: Addressing
Sector: FIRE
ADF1/2: Based on sequence number

1605: Valid states

State	Description	Valid commands
NORMAL	The zone is in the ON state. Incoming danger levels are processed.	OFF TEST
ALARM	An affiliated detection device has reached danger level 3 (alarm).	ACKNOWLEDGE RESET OFF TEST
OFF	Incoming danger levels are not processed. Note: If all elements affiliated with the zone are switched off, the state of the zone switches automatically to OFF.	ON TEST
TEST	Incoming danger levels are not processed. The responding detection device switches temporarily to the TEST ALARM state.	ON OFF
NOT READY	A pending danger level (manual button) has been detected when the zone was switched on.	OFF TEST

1605: State transition diagram

From \ To	ALARM	OFF	TEST	NOT READY	NORMAL
ALARM	---	↑ Off ----- N 01 85 Q 64 56	↑ Test ----- N 01 85 Q 64 57	---	↑ Reset & Danger = 0 ----- N 01 85 N 64 3C
OFF	---	---	↑ Test ----- Q 64 57	↑ On & Danger > 0 ----- Q 64 5F	↑ On ----- N 64 3C
TEST	---	↑ Off ----- Q 64 56	---	↑ On & Danger > 0 ----- Q 64 5F	↑ On ----- N 64 3C
NOT READY	---	↑ Off ----- Q 64 56	↑ Test ----- Q 64 57	---	↑ On ----- N 64 3C
<u>NORMAL</u>	↑ Alarm ----- U 01 02	↑ Off ----- Q 64 56	↑ Test ----- Q 64 57	---	---

1605: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
W	<CCaddr>	<adf12>	U/Q	01	02	ALARM	Alarm	Man. detector
W	<CCaddr>	<adf12>	N	01	85	NORMAL	Alarm	Reset
W	<CCaddr>	<adf12>	Q	64	56	ANOMALY	Zone	Off
W	<CCaddr>	<adf12>	Q	64	57	ANOMALY	Zone	Test
W	<CCaddr>	<adf12>	Q	64	5F	ANOMALY	Zone	Not ready
W	<CCaddr>	<adf12>	N	64	3C	NORMAL	Zone	Normal

1605: Telegram repertoire: COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
W	<CCaddr>	<adf12>	R	01	80	Alarm	Acknowledgment (Alarm)
W	<CCaddr>	<adf12>	R	01	83	Alarm	Reset
W	<CCaddr>	<adf12>	R	64	55	Zone	On
W	<CCaddr>	<adf12>	R	64	56	Zone	Off
W	<CCaddr>	<adf12>	R	64	57	Zone	Test

5.5.5 Structure 1610: Digital zone

Digital zones process binary information rather than danger levels. A logical TRUE signal of an individual detection device affiliated with the zone suffices to reach the ALARM state.

1610: Addressing
 Sector: EXTINGUISHING or PLANT MONITORING
 ADF1/2: Based on sequence number

1610: Valid states

State	Description	Valid commands
NORMAL	The Zone is in the ON state. Incoming binary signals are processed.	OFF TEST
ALARM	An affiliated detection device supplies a TRUE signal.	ACKNOWLEDGE RESET OFF TEST
OFF	Incoming binary signals are not processed. <u>Note:</u> If all elements affiliated with the zone are switched off, the zone state changes automatically to OFF.	ON TEST
TEST	Incoming binary signals are not processed. The responding detection device switches temporarily to the TEST ALARM state.	ON OFF
NOT READY	A pending TRUE signal has been detected when the zone was switched on.	OFF TEST

1610: State transition diagram

From \ To	ALARM	OFF	TEST	NOT READY	NORMAL
ALARM	---	↑ Off ----- N 01 85 Q 64 56	↑ Test ----- N 01 85 Q 64 57	---	↑ Reset & Danger = 0 ----- N 01 85 N 64 3C
OFF	---	---	↑ Test ----- Q 64 57	↑On & Danger > 0 ----- Q 64 5F	↑ On ----- N 64 3C
TEST	---	↑ Off ----- Q 64 56	---	↑On & Danger > 0 ----- Q 64 5F	↑ On ----- N 64 3C
NOT READY	---	↑ Off ----- Q 64 56	↑ Test ----- Q 64 57	---	↑ On ----- N 64 3C
<u>NORMAL</u>	↑ Alarm ----- U 01 01	↑ Off ----- Q 64 56	↑ Test ----- Q 64 57	---	---

1610: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
LP	<CCaddr>	<adf12>	U/Q	01	01	ALARM	Alarm	Autom. detector
LP	<CCaddr>	<adf12>	N	01	85	NORMAL	Alarm	Reset
LP	<CCaddr>	<adf12>	Q	64	56	ANOMALY	Zone	Off
LP	<CCaddr>	<adf12>	Q	64	57	ANOMALY	Zone	Test
LP	<CCaddr>	<adf12>	Q	64	5F	ANOMALY	Zone	Not ready
LP	<CCaddr>	<adf12>	N	64	3C	NORMAL	Zone	Normal

1610: Telegram repertoire COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
LP	<CCaddr>	<adf12>	R	01	80	Alarm	Acknowledgment (Alarm)
LP	<CCaddr>	<adf12>	R	01	83	Alarm	Reset
LP	<CCaddr>	<adf12>	R	64	55	Zone	On
LP	<CCaddr>	<adf12>	R	64	56	Zone	Off
LP	<CCaddr>	<adf12>	R	64	57	Zone	Test

5.6 Hierarchical level: ZONE (controls)

The CONTROL ZONE level is responsible for activating the affiliated control elements based on predetermined decision criteria. The term 'Zone' (controls) corresponds to the term *Control zone* in the DMS7000.

5.6.1 Structure 1651: Switching zone

Based on the evaluation of the affiliated digital detection devices the affiliated control elements are activated. This zone type is principally used in the local area of the CC11.

1651: Addressing
 Sector: PLANT MONITORING
 ADF1/2: Based on sequence number

1651: Valid states

State	Description	Valid commands
INACTIVE	The zone is in the quiescent state. The evaluation logic is switched on.	OFF
OFF	The evaluation logic is switched off. The affiliated elements are deactivated.	ON
FAULTY	Zone faulty. The affiliated elements are deactivated.	ACKNOWLEDGE

1651: State transition diagram

From	To	OFF	FAULTY	INACTIVE
OFF		---	↑ Fault ----- U 62 46	↑ On ----- N 62 4D
FAULTY		---	---	↓ Fault ----- U 62 4D
INACTIVE		↑ Off ----- Q 62 56	↑ Fault ----- U 62 46	---

1651: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
P	<CCaddr>	<adf12>	U/Q	62	46	FAULT	Control zone	Faulty
P	<CCaddr>	<adf12>	N	62	4D	NORMAL	Control zone	Inactive
P	<CCaddr>	<adf12>	Q	62	56	ANOMALY	Control zone	Off

1651: Telegram repertoire COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
P	<CCaddr>	<adf12>	R	62	55	Control zone	On
P	<CCaddr>	<adf12>	R	62	56	Control zone	Off
P	<CCaddr>	<adf12>	R	62	86	Control zone	Acknowledgment (Faulty)

5.6.2 Structure 1654/1656: Programmable control zone

With programmable control zones any state combinations of datapoints within a CC11 control unit can be used for control purposes.

1654/1656: Addressing

Sector: PLANT MONITORING

ADF1/2: Based on sequence number

1654/1656: Valid states

State	Description	Valid commands
INACTIVE	The zone is in the quiescent state. The evaluation logic is switched on.	ACTIVE OFF
ACTIVE	The evaluation logic signals a TRUE state. The affiliated elements are activated.	INACTIVE OFF
OFF	The evaluation logic is switched off. The affiliated elements are deactivated.	ON

1654/1656: State transition diagram

From \ To	ACTIVE	OFF	INACTIVE
ACTIVE	---	↑ Off ----- Q 62 56	↑ Inactive ----- N 62 4D
OFF	---	---	↑ On ----- N 62 4D
INACTIVE	↑ Active ----- Q 62 4F	↑ Off ----- Q 62 56	---

1654/1656: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
P	<CCaddr>	<adf12>	N	62	4D	NORMAL	Control zone	Inactive
P	<CCaddr>	<adf12>	Q	62	4F	ANOMALY	Control zone	Active
P	<CCaddr>	<adf12>	Q	62	56	ANOMALY	Control zone	Off

1654/1656: Telegram repertoire COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
P	<CCaddr>	<adf12>	R	62	4D	Control zone	Inactive
P	<CCaddr>	<adf12>	R	62	4F	Control zone	Active
P	<CCaddr>	<adf12>	R	62	55	Control zone	On
P	<CCaddr>	<adf12>	R	62	56	Control zone	Off

5.7 Hierarchical level: ELEMENT (detection)

The detection devices evaluate the information supplied by detectors (danger levels) and digital inputs, and transmit the results to the higher ranking zones.

5.7.1 Structure 1501: Interactive detector element

Abstract representation of an interactive series DS11-I detector

1501: Addressing
Sector: FIRE or EXTINGUISHING
ADF1/2: Based on sequence number

1501: Valid states

State	Description	Valid commands
NORMAL	The element is in the ON state (connected into the circuit). Incoming danger levels are transmitted to the higher ranking zone.	OFF
ACTIVE	The affiliated detector has reached a danger level > 1.	OFF
TEST ALARM	The higher ranking zone is in the TEST state and a danger level 3 has been detected.	OFF
OFF	Incoming information (danger levels, faults) is not processed.	ON
DRIFT	Detector contaminated but still functional.	ACKNOWLEDGE OFF
FAULTY	Correct operation of the detector is no longer assured. Causes: - Fatal fault (interruption, short circuit, HW) - Application error - Impairment	ACKNOWLEDGE OFF

1501: State transition diagram

From	To	ACTIVE	OFF	TEST ALARM ZONE = TEST	DRIFT	FAULTY	NORMAL
ACTIVE		---	↑ Off ----- Q 67 56	---	↓ Active & Drift ----- U 67 48	↓ Active & Faulty ----- U 67 46	↑ ZoneReset & Danger = 0 ----- N 67 3C
OFF		---	---	---	↑ On & Drift ----- U 67 48	↑ On & Faulty ----- U 67 46	↑ On ----- N 67 3C
TEST ALARM ZONE = TEST		---	↑ Off ----- Q 67 56	---	↓ TestAlarm & Drift ----- U 67 48	---	↓ TestAlarm ----- N 67 3C
DRIFT		↑ Danger > 1 ----- Q 67 4F	↑ Off ----- Q 67 56	↑ Danger = 3 ----- Q 67 0B	---	---	↓ Drift ----- N 67 3C
FAULTY		---	↑ Off ----- Q 67 56	---	↓ Faulty & Drift ----- U 67 48	---	↓ Faulty ----- N 67 3C
NORMAL		↑ Danger > 1 ----- Q 67 4F	↑ Off ----- Q 67 56	↑ Danger = 3 ----- Q 67 0B	↑ Drift ----- U 67 48	↑ Faulty ----- U 67 46	---

1501: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
WL	<CCaddr>	<adf12>	Q	67	0B	ANOMALY	Detection device	Test alarm
WL	<CCaddr>	<adf12>	N	67	3C	NORMAL	Detection device	Normal
WL	<CCaddr>	<adf12>	U/Q	67	46	FAULT	Detection device	Faulty
WL	<CCaddr>	<adf12>	U/Q	67	48	ANOMALY	Detection device	Drift
WL	<CCaddr>	<adf12>	Q	67	4F	ANOMALY	Detection device	Active
WL	<CCaddr>	<adf12>	Q	67	56	ANOMALY	Detection device	Off

1501: Telegram repertoire COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
WL	<CCaddr>	<adf12>	R	67	55	Detection device	On
WL	<CCaddr>	<adf12>	R	67	56	Detection device	Off
WL	<CCaddr>	<adf12>	R	67	86	Detection device	Acknowledgment (fault)
WL	<CCaddr>	<adf12>	R	67	89	Detection device	Acknowledgment (anomaly)

5.7.2 Structure 1502: Interactive manual callpoint element

Abstract representation of an interactive series DS11-I manual callpoint.

1502: Addressing

Sector: FIRE

ADF1/2: Based on sequence number

1502: Valid states

State	Description	Valid commands
NORMAL	The element is in the ON state (connected to the circuit). Incoming danger levels are transmitted to the higher ranking zone.	OFF
ACTIVE	The affiliated detector has reached a danger level > 1.	OFF
TEST ALARM	The higher ranking zone is in the TEST state and a danger level 3 has been detected.	OFF
OFF	Incoming information (danger levels, faults) is not processed.	ON
NOT READY	After the element has been reset or switched on a pending danger level (push button engaged) was detected.	ACKNOWLEDGE OFF
FAULTY	Correct functioning of the detector is no longer assured. Causes: - Fatal fault (interruption, short circuit, HW) - Impairment	ACKNOWLEDGE OFF

1502: State transition diagram

From	To	ACTIVE	OFF	TEST ALARM ZONE = TEST	NOT READY	FAULTY	NORMAL
ACTIVE		---	↑ Off ----- Q 67 56	---	---	↓ Active & Faulty ----- U 67 46	↑ ZoneReset & Danger = 0 ----- N 67 3C
OFF		---	---	---	↑ On & Not ready ----- U 67 5F	↑ On & Faulty ----- U 67 46	↑ On ----- N 67 3C
TEST ALARM ZONE = TEST		---	↑ Off ----- Q 67 56	---	---	---	↓ Test alarm ----- N 67 3C
NOT READY		---	↑ Off ----- Q 67 56	---	---	---	↑ Danger = 0 ----- N 67 3C
FAULTY		---	↑ Off ----- Q 67 56	---	---	---	↓ Faulty ----- N 67 3C
NORMAL		↑ Danger = 3 ----- Q 67 4F	↑ Off ----- Q 67 56	↑ Danger = 3 ----- Q 67 0B	↑ N ready ----- U 67 5F	↑ Faulty ----- U 67 46	---

1502: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
W	<CCaddr>	<adf12>	Q	67	0B	ANOMALY	Detection device	Test alarm
W	<CCaddr>	<adf12>	N	67	3C	NORMAL	Detection device	Normal
W	<CCaddr>	<adf12>	U/Q	67	46	FAULT	Detection device	Faulty
W	<CCaddr>	<adf12>	Q	67	4F	ANOMALY	Detection device	Active
W	<CCaddr>	<adf12>	Q	67	56	ANOMALY	Detection device	Off
W	<CCaddr>	<adf12>	U/Q	67	5F	FAULT	Detection device	Not ready

1502: Telegram repertoire COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
W	<CCaddr>	<adf12>	R	67	55	Detection device	On
W	<CCaddr>	<adf12>	R	67	56	Detection device	Off
W	<CCaddr>	<adf12>	R	67	86	Detection device	Acknowledgment (fault)

5.7.3 Structure 1503: Collective manual callpoint element

Abstract representation of a collective series DS11-C manual callpoint.

1503: Addressing
Sector: FIRE
ADF1/2: Based on sequence number

1503: Valid states

State	Description	Valid commands
NORMAL	The element is in the ON state (connected to the circuit). Incoming danger levels are transmitted to the higher ranking zone.	OFF
ACTIVE	The affiliated detector has reached a danger level > 1.	OFF
TEST ALARM	The higher ranking zone is in the TEST state and a danger level 3 has been detected.	OFF
OFF	Incoming information (danger levels, faults) is not processed.	ON
NOT READY	After the element has been reset or switched on a pending danger level (push button engaged) was detected.	ACKNOWLEDGE OFF
FAULTY	Correct functioning of the detector is no longer assured. Causes: - Fatal fault (interruption, short circuit, HW)	ACKNOWLEDGE OFF

1503: State transition diagram

From	To	ACTIVE	OFF	TEST ALARM ZONE = TEST	NOT READY	FAULTY	NORMAL
ACTIVE		---	↑ Off ----- Q 67 56	---	---	↓ Active & Faulty ----- U 67 46	↑ ZoneReset & Danger = 0 ----- N 67 3C
OFF		---	---	---	↑ On & Not ready ----- U 67 5F	↑ On & Faulty ----- U 67 46	↑ On ----- N 67 3C
TEST ALARM ZONE = TEST		---	↑ Off ----- Q 67 56	---	---	---	↓ TestAlarm ----- N 67 3C
NOT READY		---	↑ Off ----- Q 67 56	---	---	---	↑ Danger = 0 ----- N 67 3C
FAULTY		---	↑ Off ----- Q 67 56	---	---	---	↓ Faulty ----- N 67 3C
<u>NORMAL</u>		↑ Danger = 3 ----- Q 67 4F	↑ Off ----- Q 67 56	↑ Danger = 3 ----- Q 67 0B	↑ N.ready ----- U 67 5F	↑ Faulty ----- U 67 46	---

1503: Telegram repertoire: MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
W	<CCaddr>	<adf12>	Q	67	0B	ANOMALY	Detection device	Test alarm
W	<CCaddr>	<adf12>	N	67	3C	NORMAL	Detection device	Normal
W	<CCaddr>	<adf12>	U/Q	67	46	FAULT	Detection device	Faulty
W	<CCaddr>	<adf12>	Q	67	4F	ANOMALY	Detection device	Active
W	<CCaddr>	<adf12>	Q	67	56	ANOMALY	Detection device	Off
W	<CCaddr>	<adf12>	U/Q	67	5F	FAULT	Detection device	Not ready

1503: Telegram repertoire: COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
W	<CCaddr>	<adf12>	R	67	55	Detection device	On
W	<CCaddr>	<adf12>	R	67	56	Detection device	Off
W	<CCaddr>	<adf12>	R	67	86	Detection device	Acknowledgment (fault)

5.7.4 Structure 1508: AnalogPlus element

Abstract representation of a series DS11-A (AnalogPlus) detector.

1508: Addressing

Sector: FIRE or EXTINGUISHING

ADF1/2: Based on sequence number

1508: Valid states

State	Description	Valid commands
NORMAL	The element is in the ON state (connected to the circuit). Incoming danger levels are transmitted to the higher ranking zone.	OFF
ACTIVE	The affiliated detector has reached a danger level > 1.	OFF
TEST ALARM	The higher ranking zone is in the TEST state and a danger level 3 has been detected.	OFF
OFF	Incoming information (danger levels, faults) is not processed.	ON
DRIFT	Detector contaminated but still functional.	ACKNOWLEDGE OFF
FAULTY	Correct functioning of the detector is no longer assured. Causes: - Fatal fault (interruption, short circuit, HW) - Application error - Impairment	ACKNOWLEDGE OFF

1508: State transition diagram

From	To	ACTIVE	OFF	TEST ALARM ZONE = TEST	DRIFT	FAULTY	NORMAL
ACTIVE	---	---	↑ Off ----- Q 67 56	---	↓ Active & Drift ----- U 67 48	↓ Active & Faulty ----- U 67 46	↑ ZoneReset & Danger = 0 ----- N 67 3C
OFF	---	---	---	---	↑ On & Drift ----- U 67 48	↑ On & Faulty ----- U 67 46	↑ On ----- N 67 3C
TEST ALARM ZONE = TEST	---	---	↑ Off ----- Q 67 56	---	↓ TestAlarm & Drift ----- U 67 48	---	↓ TestAlarm ----- N 67 3C
DRIFT	↑ Danger > 1 ----- Q 67 4F	↑ Off ----- Q 67 56	↑ Danger = 3 ----- Q 67 0B	---	---	---	↓ Drift ----- N 67 3C
FAULTY	---	↑ Off ----- Q 67 56	---	---	↓ Faulty & Drift ----- U 67 48	---	↓ Faulty ----- N 67 3C
NORMAL	↑ Danger > 1 ----- Q 67 4F	↑ Off ----- Q 67 56	↑ Danger = 3 ----- Q 67 0B	↑ Drift ----- U 67 48	↑ Faulty ----- U 67 46	---	---

1508: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
WL	<CCaddr>	<adf12>	Q	67	0B	ANOMALY	Detection device	Test alarm
WL	<CCaddr>	<adf12>	N	67	3C	NORMAL	Detection device	Normal
WL	<CCaddr>	<adf12>	U/Q	67	46	FAULT	Detection device	Faulty
WL	<CCaddr>	<adf12>	U/Q	67	48	ANOMALY	Detection device	Drift
WL	<CCaddr>	<adf12>	Q	67	4F	ANOMALY	Detection device	Active
WL	<CCaddr>	<adf12>	Q	67	56	ANOMALY	Detection device	Off

1508: Telegram repertoire COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
WL	<CCaddr>	<adf12>	R	67	55	Detection device	On
WL	<CCaddr>	<adf12>	R	67	56	Detection device	Off
WL	<CCaddr>	<adf12>	R	67	86	Detection device	Acknowledgment (fault)
WL	<CCaddr>	<adf12>	R	67	89	Detection device	Acknowledgment (anomaly)

5.7.5 Structure 1510...1512: Collective line element

Abstract representation of a series DS11-C collective line. Elements 1510 .. 1512 have different internal characteristics (pulse memory, delays), however, these do not appear on the DMS7000 side.

1510: Addressing

Sector: FIRE or EXTINGUISHING

ADF1/2: Based on sequence number

1510: Valid states

State	Description	Valid commands
NORMAL	The element is in the ON state (connected to the circuit). Incoming danger levels are transmitted to the higher ranking zone.	OFF
ACTIVE	The affiliated detector has reached a danger level > 1.	OFF
TEST ALARM	The higher ranking zone is in the TEST state and a danger level 3 has been detected.	OFF
OFF	Incoming information (danger levels, faults) is not processed.	ON
DRIFT	Detector contaminated but still functional.	ACKNOWLEDGE OFF
FAULTY	Correct functioning of the detector is no longer assured. Causes: - Fatal fault (detector HW) - Detector line faulty	ACKNOWLEDGE OFF

1510: State transition diagram

From	To	ACTIVE	OFF	TEST ALARM ZONE = TEST	DRIFT	FAULTY	NORMAL
ACTIVE		---	↑ Off ----- Q 67 56	---	↓ Active & Drift ----- U 67 48	↓ Active & Faulty ----- U 67 46	↑ ZoneReset & Danger = 0 ----- N 67 3C
OFF		---	---	---	↑ On & Drift ----- U 67 48	↑ On & Faulty ----- U 67 46	↑ On ----- N 67 3C
TEST ALARM ZONE = TEST		---	↑ Off ----- Q 67 56	---	↓ TestAlarm & Drift ----- U 67 48	---	↓ TestAlarm ----- N 67 3C
DRIFT		↑ Danger > 1 ----- Q 67 4F	↑ Off ----- Q 67 56	↑ Danger = 3 ----- Q 67 0B	---	---	↓ Drift ----- N 67 3C
FAULTY		---	↑ Off ----- Q 67 56	---	↓ Faulty & Drift ----- U 67 48	---	↓ Faulty ----- N 67 3C
NORMAL		↑ Danger > 1 ----- Q 67 4F	↑ Off ----- Q 67 56	↑ Danger = 3 ----- Q 67 0B	↑ Drift ----- U 67 48	↑ Faulty ----- U 67 46	---

1510: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
WL	<CCaddr>	<adf12>	Q	67	0B	ANOMALY	Detection device	Test alarm
WL	<CCaddr>	<adf12>	N	67	3C	NORMAL	Detection device	Normal
WL	<CCaddr>	<adf12>	U/Q	67	46	FAULT	Detection device	Faulty
WL	<CCaddr>	<adf12>	U/Q	67	48	ANOMALY	Detection device	Drift
WL	<CCaddr>	<adf12>	Q	67	4F	ANOMALY	Detection device	Active
WL	<CCaddr>	<adf12>	Q	67	56	ANOMALY	Detection device	Off

1510: Telegram repertoire COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
WL	<CCaddr>	<adf12>	R	67	55	Detection device	On
WL	<CCaddr>	<adf12>	R	67	56	Detection device	Off
WL	<CCaddr>	<adf12>	R	67	86	Detection device	Acknowledgment (fault)
WL	<CCaddr>	<adf12>	R	67	89	Detection device	Acknowledgment (anomaly)

5.7.6 Structure 1520: Digital detection device

Abstract representation of digital transmitters (contacts, etc.) whose binary states are translated into danger levels:

- Log. 0 = Danger level 0
- Log. 1 = Danger level 3

1520: Addressing
Sector: FIRE
ADF1/2: Based on sequence number

1520: Valid states

State	Description	Valid commands
NORMAL	The element is in the ON state (connected into the circuit). Incoming danger levels are transmitted to the higher ranking zone.	OFF
ACTIVE	The affiliated detector has reached danger level 3.	OFF
TEST ALARM	The higher ranking zone is in the TEST state and a danger level 3 has been detected.	OFF
OFF	Incoming information (danger levels, faults) is not processed.	ON
FAULTY	Correct operation of the detector is no longer assured. Causes: - Fatal fault (input, HW) - Line short circuit or interruption	ACKNOWLEDGE OFF

1520: State transition diagram

From	To	ACTIVE	OFF	TEST ALARM ZONE = TEST	FAULTY	NORMAL
ACTIVE		---	↑ Off ----- Q 67 56	---	↓ Active & Faulty ----- U 67 46	↑ ZoneReset & Danger = 0 ----- N 67 3C
OFF		---	---	---	↑ On & Faulty ----- U 67 46	↑ On ----- N 67 3C
TEST ALARM ZONE = TEST		---	↑ Off ----- Q 67 56	---	---	↓ TestAlarm ----- N 67 3C
FAULTY		---	↑ Off ----- Q 67 56	---	---	↓ Faulty ----- N 67 3C
NORMAL		↑ Danger > 1 ----- Q 67 4F	↑ Off ----- Q 67 56	↑ Danger = 3 ----- Q 67 0B	↑ Faulty ----- U 67 46	---

1520: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
W	<CCaddr>	<adf12>	Q	67	0B	ANOMALY	Detection device	Test alarm
W	<CCaddr>	<adf12>	N	67	3C	NORMAL	Detection device	Normal
W	<CCaddr>	<adf12>	U/Q	67	46	FAULT	Detection device	Faulty
W	<CCaddr>	<adf12>	U/Q	67	48	ANOMALY	Detection device	Drift
W	<CCaddr>	<adf12>	Q	67	4F	ANOMALY	Detection device	Active
W	<CCaddr>	<adf12>	Q	67	56	ANOMALY	Detection device	Off

1520: Telegram repertoire COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
W	<CCaddr>	<adf12>	R	67	55	Detection device	On
W	<CCaddr>	<adf12>	R	67	56	Detection device	Off
W	<CCaddr>	<adf12>	R	67	86	Detection device	Acknowledgment (fault)
W	<CCaddr>	<adf12>	R	67	89	Detection device	Acknowledgment (anomaly)

5.7.7 Structure 1521: Digital manual callpoint element

Abstract representation of digital transmitters (contacts, etc.) whose binary states are translated into danger levels and which are used as manual callpoints:

- Log. 0 = Danger level 0
- Log. 1 = Danger level 3

1521: Addressing
 Sector: FIRE
 ADF1/2: Based on sequence number

1521: Valid states

State	Description	Valid commands
NORMAL	The element is in the ON state (connected into the circuit). Incoming danger levels are transmitted to the higher ranking zone.	OFF
ACTIVE	The affiliated transmitter has reached a danger level > 3.	OFF
TEST ALARM	The higher ranking zone is in the TEST state and a danger level 3 has been detected.	OFF
OFF	Incoming information (danger levels, faults) is not processed.	ON
NOT READY	After the element has been reset or switched on a pending danger level (push button engaged) was detected.	ACKNOWLEDGE OFF
FAULTY	Correct operation of the detector is no longer assured. Causes: Fatal fault (interruption, short circuit, HW)	ACKNOWLEDGE OFF

1521: State transition diagram

From \ To	ACTIVE	OFF	TEST ALARM ZONE = TEST	NOT READY	FAULTY	NORMAL
ACTIVE	---	↑ Off ----- Q 67 56	---	---	↓ Active & Faulty ----- U 67 46	↑ ZoneReset & Danger = 0 ----- N 67 3C
OFF	---	---	---	↑ On & Not ready ----- U 67 5F	↑ On & Faulty ----- U 67 46	↑ On ----- N 67 3C
TEST ALARM ZONE = TEST	---	↑ Off ----- Q 67 56	---	---	---	↓ TestAlarm ----- N 67 3C
NOT READY	---	↑ Off ----- Q 67 56	---	---	---	↑ Danger = 0 ----- N 67 3C
FAULTY	---	↑ Off ----- Q 67 56	---	---	---	↓ Faulty ----- N 67 3C
<u>NORMAL</u>	↑ Danger = 3 ----- Q 67 4F	↑ Off ----- Q 67 56	↑ Danger = 3 ----- Q 67 0B	↑ N.ready ----- U 67 5F	↑ Faulty ----- U 67 46	---

1521: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
W	<CCaddr>	<adf12>	Q	67	0B	ANOMALY	Detection device	Test alarm
W	<CCaddr>	<adf12>	N	67	3C	NORMAL	Detection device	Normal
W	<CCaddr>	<adf12>	U/Q	67	46	FAULT	Detection device	Faulty
W	<CCaddr>	<adf12>	Q	67	4F	ANOMALY	Detection device	Active
W	<CCaddr>	<adf12>	Q	67	56	ANOMALY	Detection device	Off
W	<CCaddr>	<adf12>	U/Q	67	5F	FAULT	Detection device	Not ready

1521: Telegram repertoire COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
W	<CCaddr>	<adf12>	R	67	55	Detection device	On
W	<CCaddr>	<adf12>	R	67	56	Detection device	Off
W	<CCaddr>	<adf12>	R	67	86	Detection device	Acknowledgment (fault)
W	<CCaddr>	<adf12>	R	67	89	Detection device	Acknowledgment (anomaly)

5.7.8 Structure 1525: Digital element

Abstract representation of digital transmitters (contact, etc.)

1525: Addressing
Sector: EXTINGUISHING or PLANT MONITORING
ADF1/2: Based on sequence number

1525: Valid states

State	Description	Valid commands
NORMAL	The element is in the ON state (connected into the circuit). Incoming danger levels are transmitted to the higher ranking zone.	OFF
ACTIVE	The affiliated transmitter signals Log. 1 at the input	OFF
OFF	Incoming information (binary signals, faults) is not processed.	ON
FAULTY	Correct operation of the transmitter is no longer assured. Causes: - Fatal fault (input, HW) - Line short circuit or interruption	ACKNOWLEDGE OFF

1525: State transition diagram

From	To	ACTIVE	OFF	FAULTY	NORMAL
ACTIVE		---	↑ Off ----- Q 67 56	↓ Active & Faulty ----- U 67 46	↑ ZoneReset & Danger = 0 ----- N 67 3C
OFF		---	---	↑ On & Faulty ----- U 67 46	↑ On ----- N 67 3C
FAULTY		---	↑ Off ----- Q 67 56	---	↓ Faulty ----- N 67 3C
NORMAL		↑ Danger > 1 ----- Q 67 4F	↑ Off ----- Q 67 56	↑ Faulty ----- U 67 46	---

1525: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
LP	<CCaddr>	<adf12>	N	67	3C	NORMAL	Detection device	Normal
LP	<CCaddr>	<adf12>	U/Q	67	46	FAULT	Detection device	Faulty
LP	<CCaddr>	<adf12>	Q	67	4F	ANOMALY	Detection device	Active
LP	<CCaddr>	<adf12>	Q	67	56	ANOMALY	Detection device	Off

1525: Telegram repertoire COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
LP	<CCaddr>	<adf12>	R	67	55	Detection device	On
LP	<CCaddr>	<adf12>	R	67	56	Detection device	Off
LP	<CCaddr>	<adf12>	R	67	86	Detection device	Acknowledgment (fault)

5.8 Hierarchical level: ELEMENT (controls)

Control devices receive control commands from higher ranking instances and transmit these to the physical devices.

5.8.1 Structure 1551: Output element without feedback

Abstract representation of a digital output. Activation of the peripheral devices is not monitored.

1551: Addressing
Sector: PLANT MONITORING
ADF1/2: Based on sequence number

1551: Valid states

State	Description	Valid commands
INACTIVE	The element is in the ON state (connected into the circuit). The affiliated digital output is in the quiescent state.	ACTIVE OFF
ACTIVE	The affiliated digital output is in the active state.	INACTIVE OFF
OFF	The affiliated digital output is in the quiescent state. Incoming control commands are not processed.	ON
FAULTY	Correct functioning of the element is not assured. The affiliated digital output is in the quiescent state.	ACKNOWLEDGE OFF

1551: State transition diagram

From	To	ACTIVE	OFF	FAULTY	INACTIVE
ACTIVE		---	↑ Off ----- Q 68 56	↓ Active & Faulty ----- U 68 46	↑ Inactive ----- N 68 4D
OFF		---	---	↑ On & Faulty ----- U 68 46	↑ On ----- N 68 4D
FAULTY		---	↑ Off ----- Q 68 56	---	↓ Faulty ----- N 68 4D
INACTIVE		↑ Active ----- Q 68 4F	↑ Off ----- Q 68 56	↑ Faulty ----- U 68 46	---

1551: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
P	<CCaddr>	<adf12>	U/Q	68	46	FAULT	Control device	Faulty
P	<CCaddr>	<adf12>	N	68	4D	NORMAL	Control device	Inactive
P	<CCaddr>	<adf12>	Q	68	4F	ANOMALY	Control device	Active
P	<CCaddr>	<adf12>	Q	68	56	ANOMALY	Control device	Off

1551: Telegram repertoire COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
P	<CCaddr>	<adf12>	R	68	4D	Control device	Inactive
P	<CCaddr>	<adf12>	R	68	4F	Control device	Active
P	<CCaddr>	<adf12>	R	68	55	Control device	On
P	<CCaddr>	<adf12>	R	68	56	Control device	Off
P	<CCaddr>	<adf12>	R	68	86	Control device	Acknowledgment (fault)

5.8.2 Structure 1552: Output element with feedback

Abstract representation of a digital output. Activation of the peripheral device is monitored via a separate digital input.

1552: Addressing

Sector: PLANT MONITORING

ADF1/2: Based on sequence number

1552: Valid states

State	Description	Valid commands
INACTIVE	The element is in the ON state (connected into the circuit). The affiliated digital output is in the quiescent state.	ACTIVE OFF
ACTIVE	The affiliated digital output is in the active state and the activation of the peripheral devices has been confirmed.	INACTIVE OFF
OFF	The affiliated digital output is in the quiescent state. Incoming control commands are not processed.	ON
FAULTY	Correct functioning of the element is not assured. The affiliated digital output is in the quiescent state.	ACKNOWLEDGE OFF

1552: State transition diagram

From	To	ACTIVE	ACTIVE – FEEDBACK INACTIVE	OFF	FAULTY	INACTIVE	INACTIVE -- FEEDBACK ACTIVE
ACTIVE		---	---	↑ Off ----- Q 68 56	↓ Active & Faulty ----- U 68 46	↑ Inactive ----- N 68 4D	↑ Inactive ----- N 68 4D
ACTIVE – FEEDBACK INACTIVE		↑ Active ----- Q 68 4F	---	↑ Off ----- Q 68 56	↑ Faulty ----- U 68 46	↓ Inactive ----- N 68 4D	---
OFF		---	---	---	↑ On & Faulty ----- U 68 46	↑ On ----- N 68 4D	↑ On ----- N 68 4D
FAULTY		---	---	↑ Off ----- Q 68 56	---	↓ Faulty ----- N 68 4D	↓ Faulty ----- N 68 4D
INACTIVE -- FEEDBACK ACTIVE		---	---	↑ Off ----- Q 68 56	↑ Faulty ----- U 68 46	↓ Feedb. Inactive ----- N 68 4D	---
INACTIVE		↑ Active ----- Q 68 4F	↑ Active -- No Feedback ----- U 68 2A	↑ Off ----- Q 68 56	↑ Faulty ----- U 68 46	---	↑ Inactive – Feedback active ----- U 68 2B

1552: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
P	<CCaddr>	<adf12>	U/Q	68	2A	FAULT	Control device	Active – no feedback
P	<CCaddr>	<adf12>	U/Q	68	2B	FAULT	Control device	Inactive – feedback active
P	<CCaddr>	<adf12>	U/Q	68	46	FAULT	Control device	Faulty
P	<CCaddr>	<adf12>	N	68	4D	NORMAL	Control device	Inactive
P	<CCaddr>	<adf12>	Q	68	4F	ANOMALY	Control device	Active
P	<CCaddr>	<adf12>	Q	68	56	ANOMALY	Control device	Off

1552: Telegram repertoire COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
P	<CCaddr>	<adf12>	R	68	4D	Control device	Inactive
P	<CCaddr>	<adf12>	R	68	4F	Control device	Active
P	<CCaddr>	<adf12>	R	68	55	Control device	On
P	<CCaddr>	<adf12>	R	68	56	Control device	Off
P	<CCaddr>	<adf12>	R	68	86	Control device	Acknowledgment (fault)

5.8.3 Structure 1560: Internal horn element

Abstract representation of an internal horn output. Internal horn elements receive their control commands directly from the higher ranking AREA. Typically the internal horn is activated simultaneously with the buzzer on the CT11.

1560: Addressing
Sector: FIRE
ADF1/2: Based on sequence number

1560: Valid states

State	Description	Valid commands
INACTIVE	The element is in the ON state (connected into the circuit). The affiliated horn output is in the quiescent state.	---
ACTIVE	The affiliated horn output is in the active state.	ACKNOWLEDGE.
OFF	The affiliated horn output is in the quiescent state. Incoming control commands are not processed.	---
FAULTY	Correct functioning of the element is not assured. The affiliated horn output is in the quiescent state. Causes: - Control line fault	ACKNOWLEDGE.

1560: State transition diagram

From \ To	ACTIVE	OFF	FAULTY	INACTIVE
ACTIVE	---	↑ Off ----- Q 7A 56	↓ Active & Faulty ----- U 7A 46	↑ Inactive ----- N 7A 4D
OFF	---	---	↑ On & Faulty ----- U 7A 46	↑ On ----- N 7A 4D
FAULTY	---	↑ Off ----- Q 7A 56	---	↓ Faulty ----- N 7A 4D
INACTIVE	↑ Active ----- U 7A 4F	↑ Off ----- Q 7A 56	↑ Faulty ----- U 7A 46	---

1560: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
W	<CCaddr>	<adf12>	U/Q	7A	46	FAULT	Internal horn	Faulty
W	<CCaddr>	<adf12>	N	7A	4D	NORMAL	Internal horn	Inactive
W	<CCaddr>	<adf12>	U/Q	7A	4F	ANOMALY	Internal horn	Active
W	<CCaddr>	<adf12>	Q	7A	56	ANOMALY	Internal horn	Off

1560: Telegram repertoire COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
W	<CCaddr>	<adf12>	R	7A	86	Internal horn	Acknowledgment (fault)
W	<CCaddr>	<adf12>	R	7A	89	Internal horn	Acknowledgment (anomaly)

5.8.4 Structure 1561: External horn element

Abstract representation of an external horn output. External horn elements receive their commands directly from the higher ranking AREA. Typically the external horn is activated in accordance with the Cerberus Alarm Concept (CAC) after expiration of the presence monitoring time V1 or alarm investigation time V2.

1561: Addressing
Sector: FIRE
ADF1/2: Based on sequence number

1561: Valid states

State	Description	Valid commands
INACTIVE	The element is in the ON state (connected into the circuit). The affiliated horn output is in the quiescent state.	ACTIVE OFF
ACTIVE	The affiliated horn output is in the active state.	ACKNOWLEDGE INACTIVE OFF
OFF	The affiliated horn output is in the quiescent state. Incoming control commands are not processed.	ON
FAULTY	Correct functioning of the element is not assured. The affiliated horn output is in the quiescent state. Causes: - Control line fault	ACKNOWLEDGE OFF



The ACTIVE, INACTIVE, ON and OFF commands influence all external horn elements of the corresponding area.

The ACTIVE command is only effective if a danger signal is available in the corresponding area, or if the option “Evacuation” has been chosen in the configuration of the area.

1561: State transition diagram

From	To	ACTIVE	OFF	FAULTY	INACTIVE
ACTIVE		---	↑ Off ----- Q 73 56	↓ Active & Faulty ----- U 73 46	↑ Inactive ----- N 73 4D
OFF		---	---	↑ On & Faulty ----- U 73 46	↑ On ----- N 73 4D
FAULTY		---	↑ Off ----- Q 73 56	---	↓ Faulty ----- N 73 4D
INACTIVE		↑ Active ----- U 73 4F	↑ Off ----- Q 73 56	↑ Faulty ----- U 73 46	---

1561: Telegram repertoire: MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
W	<CCaddr>	<adf12>	U/Q	73	46	FAULT	External horn	Faulty
W	<CCaddr>	<adf12>	N	73	4D	NORMAL	External horn	Inactive
W	<CCaddr>	<adf12>	U/Q	73	4F	ANOMALY	External horn	Active
W	<CCaddr>	<adf12>	Q	73	56	ANOMALY	External horn	Off

1561: Telegram repertoire Commands

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
W	<CCaddr>	<adf12>	R	73	4D	External horn	Inactive
W	<CCaddr>	<adf12>	R	73	4F	External horn	Active
W	<CCaddr>	<adf12>	R	73	55	External horn	On
W	<CCaddr>	<adf12>	R	73	56	External horn	Off
W	<CCaddr>	<adf12>	R	73	86	External horn	Acknowledgment (fault)
W	<CCaddr>	<adf12>	R	73	89	External horn	Acknowledgment (anomaly)

5.8.5 Structure 1562 (attr = RTFIRE): ALARM remote transmission channel element

Abstract representation of a remote transmission output for ALARMS. Remote transmission channels receive their control commands directly from the higher ranking AREA. Typically it is activated in accordance with the CERBERUS Alarm Concept (CAC), after expiration of the presence monitoring time V1 or alarm investigation time V2.

1562/RTFIRE: Addressing

An *ALARM remote transmission channel* element is uniquely identified by StrucNr = 1562 and the attribute RTFIRE (in the configuration file).

Sector: FIRE

ADF1/2: Based on sequence number

1562/RTFIRE: Valid states

State	Description	Valid commands
INACTIVE	The element is in the ON state (connected into the circuit). The affiliated output is in the quiescent state.	
ACTIVE	The affiliated output is in the active state.	
OFF	The affiliated output is in the quiescent state. Incoming control commands are not processed.	
FAULTY	Correct functioning of the element is not assured. The affiliated output is in the quiescent state. Causes: - Control line fault	ACKNOWLEDGE

1562/RTFIRE: State transition diagram

From	To	ACTIVE	OFF	FAULTY	INACTIVE
ACTIVE		---	↑ Off ----- Q 09 56	↓ Active & Faulty ----- U 09 46	↑ Inactive ----- N 09 4D
OFF		---	---	↑ On & Faulty ----- U 09 46	↑ On ----- N 09 4D
FAULTY		---	↑ Off ----- Q 09 56	---	↓ Faulty ----- N 09 4D
INACTIVE		↑ Active ----- U 09 4F	↑ Off ----- Q 09 56	↑ Faulty ----- U 09 46	---

1562/RTFIRE: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
W	<CCaddr>	<adf12>	U/Q	09	46	FAULT	Remote transmission ALARM	Faulty
W	<CCaddr>	<adf12>	N	09	4D	NORMAL	Remote transmission ALARM	Inactive
W	<CCaddr>	<adf12>	Q	09	4F	ANOMALY	Remote transmission ALARM	Active
W	<CCaddr>	<adf12>	Q	09	56	ANOMALY	Remote transmission ALARM	Off

1562/RTFIRE: Telegram repertoire: COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
W	<CCaddr>	<adf12>	R	09	86	Remote transmission ALARM	Acknowledgment (fault)

5.8.6 Structure 1562 (attr = RTFAULT): FAULT remote transmission channel element

Abstract representation of a remote transmission output for FAULTS. Remote transmission channels receive their control commands directly from the higher ranking AREA. Typically it is activated in accordance with the CERBERUS Alarm Concept (CAC), after expiration of the presence monitoring time V1.

1562/RTFAULT: Addressing

A *FAULT remote transmission channel* element is uniquely identified by StrucNr = 1562 and the attribute RTFAULT (in the configuration file).

Sector: BASIC

ADF1/2: Based on sequence number

1562/RTFAULT: Valid states

State	Description	Valid commands
INACTIVE	The element is in the ON state (connected into the circuit). The affiliated output is in the quiescent state.	
ACTIVE	The affiliated output is in the active state.	
OFF	The affiliated output is in the quiescent state. Incoming control commands are not processed.	
FAULTY	Correct functioning of the element is not assured. The affiliated output is in the quiescent state. Causes: - Control line fault	ACKNOWLEDGE

1562/RTFAULT: State transition diagram

From \ To	ACTIVE	OFF	FAULTY	INACTIVE
ACTIVE	---	↑ Off ----- Q 3B 56	↓ Active & Faulty ----- U 3B 46	↑ Inactive ----- N 3B 4D
OFF	---	---	↑ On & Faulty ----- U 3B 46	↑ On ----- N 3B 4D
FAULTY	---	↑ Off ----- Q 3B 56	---	↓ Faulty ----- N 3B 4D
INACTIVE	↑ Active ----- U 3B 4F	↑ Off ----- Q 3B 56	↑ Faulty ----- U 3B 46	---

1562/RTFAULT: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
Z	<CCaddr>	<adf12>	U/Q	3B	46	FAULT	FAULT remote transmission	Faulty
Z	<CCaddr>	<adf12>	N	3B	4D	NORMAL	FAULT remote transmission	Inactive
Z	<CCaddr>	<adf12>	Q	3B	4F	ANOMALY	FAULT remote transmission	Active
Z	<CCaddr>	<adf12>	Q	3B	56	ANOMALY	FAULT remote transmission	Off

1562/RTFAULT: Telegram repertoire COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
Z	<CCaddr>	<adf12>	R	3B	86	FAULT remote transmission	Acknowledgment (fault)

5.8.7 Structure 1562 (attr = RTOTHER): OTHER remote transmission channel element

Abstract representation of a remote transmission output for OTHER (selectable) events. Remote transmission channels receive their control commands directly from the higher ranking AREA. Typically it is activated in accordance with the CERBERUS Alarm Concept (CAC), after expiration of the presence monitoring time V1.

1562/RTOTHER: Addressing

An *OTHER remote transmission channel* element is uniquely identified by StrucNr = 1562 and the attribute OTHER (in the configuration file).

Sector: BASIC

ADF1/2: Based on sequence number

1562/RTOTHER: Valid states

State	Description	Valid commands
INACTIVE	The element is in the ON state (connected into the circuit). The affiliated output is in the quiescent state.	
ACTIVE	The affiliated output is in the active state.	
OFF	The affiliated output is in the quiescent state. Incoming control commands are not processed.	
FAULTY	Correct functioning of the element is not assured. The affiliated output is in the quiescent state. Causes: - Control line fault	ACKNOWLEDGE

1562/RTOTHER: State transition diagram

From \ To	ACTIVE	OFF	FAULTY	INACTIVE
ACTIVE	---	↑ Off ----- Q 37 56	↓ Active & Faulty ----- U 37 46	↑ Inactive ----- N 37 4D
OFF	---	---	↑ On & Faulty ----- U 37 46	↑ On ----- N 37 4D
FAULTY	---	↑ Off ----- Q 37 56	---	↓ Faulty ----- N 37 4D
INACTIVE	↑ Active ----- U 37 4F	↑ Off ----- Q 37 56	↑ Faulty ----- U 37 46	---

1562/RTOTHER: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
Z	<CCaddr>	<adf12>	U/Q	37	46	FAULT	OTHER remote transmission	Faulty
Z	<CCaddr>	<adf12>	N	37	4D	NORMAL	OTHER remote transmission	Inactive
Z	<CCaddr>	<adf12>	Q	37	4F	ANOMALY	OTHER remote transmission	Active
Z	<CCaddr>	<adf12>	Q	37	56	ANOMALY	OTHER remote transmission	Off

1562/RTOTHER: Telegram repertoire COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
Z	<CCaddr>	<adf12>	R	37	86	OTHER remote transmission	Acknowledgment (fault)

5.8.8 Structure 1563: Remote transmission device element

DOES NOT EXIST ANYMORE. The information content of structure 1563 can be found in structure 1801.

5.8.9 Structure 1564: Alarmhorn (under area CAC control)

Abstract representation of an alarmhorn whose activation / deactivation is controlled by the area CAC. The behavior is identical to structure 1561 (External horn).

5.8.10 Structure 1565: Alarmhorn

Abstract representation of an alarmhorn whose activation / deactivation can be user-programmed. The behavior is identical to structure 1561 (External horn).

5.9 Hierarchical level: FUNCTION UNIT

Function units are devices on the internal bus (I-bus) of a CC11 control unit. Typical function units are:

- Line modules
- Digital I/O modules
- Power supply monitoring units

Function units contain parallel information that cannot be combined into one unique state. For this reason the information is mapped to two datapoints (ALARM and FAULT).

5.9.1 Structure 1301: Function unit DS11-I line

Abstract representation of a DS11-I (interactive line). The function unit contains the two datapoints ALARM and FAULT. The datapoints appear under the same ADF1/2 address, however, with different sector ID. Together this results in a unique datapoint address.

Datapoint ALARM (ALM)

1301/ALM: Addressing

Sector: FIRE

ADF1/2: Based on sequence number

1301/ALM: Valid states

State	Description	Valid commands
RESET	The function unit is not in the alarm state.	
ALARM	Collective alarm. An unidentifiable detector has responded. Causes: <ul style="list-style-type: none">- Detector installed but not configured in the system.- Due to a fault the detector cannot be identified individually.	ACKNOWLEDGE RESET

1301/ALM: State transition diagram

	To	ALARM	RESET
From			
ALARM		---	↓ Alarm ----- N 01 85
RESET		↑ Alarm ----- U 01 00	---

1301/ALM: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
W	<CCaddr>	<adf12>	U/Q	01	00	ALARM	Alarm	---
W	<CCaddr>	<adf12>	N	01	85	NORMAL	Alarm	Reset

1301/ALM: Telegram repertoire COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
W	<CCaddr>	<adf12>	R	01	80	Alarm	Acknowledgment (Alarm)
W	<CCaddr>	<adf12>	R	01	83	Alarm	Reset

Datapoint FAULT (FLT)

1301/FLT: Addressing

Sector: BASIC

ADF1/2: Based on sequence number

1301/FLT: Valid states

State	Description	Valid commands
NORMAL	No fault in the function unit.	
FAULTY	One of the following faults exists in the function unit: - Processor failure - Emergency operation monitoring defective - Line faulty - Line does not respond - Configuration error - Ground fault	ACKNOWLEDGE

1301/FLT: State transition diagram

From	To	FAULTY	NORMAL
FAULTY		---	↓ Fault ----- N 34 3C
NORMAL		↑ Fault ----- U 34 46	---

1301/FLT: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
Z	<CCaddr>	<adf12>	N	34	3C	NORMAL	Function unit	Normal
Z	<CCaddr>	<adf12>	U/Q	34	46	FAULT	Function unit	Faulty

1301/FLT: Telegram repertoire COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
Z	<CCaddr>	<adf12>	R	34	86	Function unit	Acknowledgment (fault)

5.9.2 Structure 1302: Function unit MS9I Line

Abstract representation of an MS9I line. The function unit contains the two datapoints ALARM and FAULT. The datapoints appear under the same ADF1/2 address, but with different sector ID. Together this results in a unique datapoint address.

Datapoint ALARM (ALM)

1302/ALM: Addressing

Sector: FIRE

ADF1/2: Based on sequence number

1302/ALM: Valid states

State	Description	Valid commands
RESET	The function unit is not in the alarm state.	
ALARM	Collective alarm. An unidentifiable detector has responded. Causes: - Detector installed but not configured in the system. - Due to a fault the detector cannot be identified individually.	ACKNOWLEDGE RESET

1302/ALM: State transition diagram

To From	ALARM	RESET
ALARM	---	↓ Alarm ----- N 01 85
RESET	↑ Alarm ----- U 01 00	---

1302/ALM: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
W	<CCaddr>	<adf12>	U/Q	01	00	ALARM	Alarm	---
W	<CCaddr>	<adf12>	N	01	85	NORMAL	Alarm	Reset

1302/ALM: Telegram repertoire COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
W	<CCaddr>	<adf12>	R	01	80	Alarm	Acknowledgment (Alarm)
W	<CCaddr>	<adf12>	R	01	83	Alarm	Reset

Datapoint FAULT

1302/FLT: Addressing

Sector: BASIC

ADF1/2: Based on sequence number

1302/FLT: Valid states

State	Description	Valid commands
NORMAL	No fault in the function unit.	
FAULTY	One of the following faults exists in the function unit: - Processor failure - Emergency operation monitoring defective - Line faulty - Line does not respond - Configuration error	ACKNOWLEDGE

1302/FLT: State transition diagram

From	To	FAULTY	NORMAL
FAULTY		---	↓ Fault ----- N 34 3C
NORMAL		↑ Fault ----- U 34 46	---

1302/FLT: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
Z	<CCaddr>	<adf12>	N	34	3C	NORMAL	Function unit	Normal
Z	<CCaddr>	<adf12>	U/Q	34	46	FAULT	Function unit	Faulty

1302/FLT: Telegram repertoire COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
Z	<CCaddr>	<adf12>	R	34	86	Function unit	Acknowledgment (fault)

5.9.3 Structure 1303: Function unit DS11-A Line

Abstract representation of an DS11-A (AnalogPlus). The function unit contains the two datapoints ALARM and FAULT. The datapoints appear under the same ADF1/2 address, but with different sector ID. Together this results in a unique datapoint address.

Datapoint ALARM (ALM)

1303/ALM: Addressing

Sector: FIRE

ADF1/2: Based on sequence number

1303/ALM: Valid states

State	Description	Valid commands
RESET	The function unit is not in the alarm state.	
ALARM	Collective alarm. An unidentifiable detector has responded. Causes: - Detector installed but not configured in the system. - Due to a fault the detector cannot be identified individually.	ACKNOWLEDGE RESET

1303/ALM: State transition diagram

To From	ALARM	RESET
ALARM	---	↓ Alarm ----- N 01 85
RESET	↑ Alarm ----- U 01 00	---

1303/ALM: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
W	<CCaddr>	<adf12>	U/Q	01	00	ALARM	Alarm	---
W	<CCaddr>	<adf12>	N	01	85	NORMAL	Alarm	Reset

1303/ALM: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
W	<CCaddr>	<adf12>	R	01	80	Alarm	Acknowledgment (Alarm)
W	<CCaddr>	<adf12>	R	01	83	Alarm	Reset

Datapoint FAULT (FLT)

1303/FLT: Addressing

Sector: BASIC

ADF1/2: Based on sequence number

1303/FLT: Valid states

State	Description	Valid commands
NORMAL	No fault in the function unit.	
FAULTY	One of the following faults exists in the function unit: - Processor failure - Emergency operation monitoring defective - Line faulty - Line does not respond - Configuration error	ACKNOWLEDGE

1303/FLT: State transition diagram

From	To	FAULTY	NORMAL
FAULTY		---	↓ Fault ----- N 34 3C
NORMAL		↑ Fault ----- U 34 46	---

1303/FLT: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
Z	<CCaddr>	<adf12>	N	34	3C	NORMAL	Function unit	Normal
Z	<CCaddr>	<adf12>	U/Q	34	46	FAULT	Function unit	Faulty

1303/FLT: Telegram repertoire COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
Z	<CCaddr>	<adf12>	R	34	86	Function unit	Acknowledgment (fault)

5.9.4 Structure 1310: Function unit DS11-C line

Abstract representation of a DS11-C (collective) line.

1310: Addressing

Sector: BASIC

ADF1/2: Based on sequence number

1310: Valid states

State	Description	Valid commands
NORMAL	No fault in the function unit.	
FAULTY	One of the following faults exists in the function unit: - Processor failure - Emergency operation monitoring defective - Line faulty - Line does not respond - Configuration error	ACKNOWLEDGE

1310: State transition diagram

From	To	FAULTY	NORMAL
FAULTY		---	↓ Fault ----- N 34 3C
NORMAL		↑ Fault ----- U 34 46	---

1310: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
Z	<CCaddr>	<adf12>	N	34	3C	NORMAL	Function unit	Normal
Z	<CCaddr>	<adf12>	U/Q	34	46	FAULT	Function unit	Faulty

1310: Telegram repertoire COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
Z	<CCaddr>	<adf12>	R	34	86	Function unit	Acknowledgment (fault)

5.9.5 Structure 1320: Function unit Digital I/O interface

Abstract representation of a digital I/O module.

1320: Addressing

Sector: BASIC

ADF1/2: Based on sequence number

1320: Valid states

State	Description	Valid commands
NORMAL	No fault in the function unit.	
FAULTY	One of the following faults exists in the function unit: - Processor failure - General fault - Configuration error	ACKNOWLEDGE

1320: State transition diagram

From	To	FAULTY	NORMAL
FAULTY		---	↓ Fault ----- N 34 3C
NORMAL		↑ Fault ----- U 34 46	---

1320: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
Z	<CCaddr>	<adf12>	N	34	3C	NORMAL	Function unit	Normal
Z	<CCaddr>	<adf12>	U/Q	34	46	FAULT	Function unit	Faulty

1320: Telegram repertoire COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
Z	<CCaddr>	<adf12>	R	34	86	Function unit	Acknowledgment (fault)

5.9.6 Structure 1340: Function unit Supply monitoring

Abstract representation of a power supply monitoring module.

1340: Addressing
Sector: BASIC
ADF1/2: Based on sequence number

1340: Valid states

State	Description	Valid commands
NORMAL	No fault in the function unit.	
FAULTY	One of the following faults exists in the function unit: - Power supply failure - Battery failure - End of battery autonomy - Module does not respond - Configuration error	ACKNOWLEDGE
EMERGENCY POWER OPERATION	A mains failure was detected and the "Mains failure" delay (default 30 min) has expired.	ACKNOWLEDGE

1340: State transition diagram

From	To	FAULTY	EMERGENCY POWER OPERATION	NORMAL
FAULTY		---	↓ Fault & Emergency power operation ----- N 3C 3D	↓ Fault ----- N 3C 3C
EMERGENCY POWER OPERATION		↑ Fault ----- U 3C 46	---	↓ Emergency power operation ----- N 3C 3C
NORMAL		↑ Fault ----- U 3C 46	↑ Emergency power operation ----- N 3C 3D	---

1340: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
Z	<CCaddr>	<adf12>	N	3C	3C	NORMAL	Power supply	Normal
Z	<CCaddr>	<adf12>	U/Q	3C	3D	FAULT	Power supply	Emergency power operation
Z	<CCaddr>	<adf12>	U/Q	3C	46	FAULT	Power supply	Faulty

1340: Telegram repertoire COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
Z	<CCaddr>	<adf12>	R	3C	86	Power supply	Acknowledgment (fault)

5.9.7 Structure 1390: Function unit display panel (C111 only)

Abstract representation of a C111 display panel. This structure is only visible in C111 control panels.

1390: Addressing
 Sector: BASIC
 ADF1/2: Based on sequence number

1390: Valid states

State	Description	Valid commands
NORMAL	No fault in the function unit.	
FAULTY	One of the following faults exists in the function unit: - No connection to display panel - General fault	ACKNOWLEDGE

1391: State transition diagram

From	To	FAULTY	NORMAL
FAULTY		---	↓ Fault ----- N 34 3C
NORMAL		↑ Fault ----- U 34 46	---

1391: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
Z	<CCaddr>	<adf12>	N	34	3C	NORMAL	Function unit	Normal
Z	<CCaddr>	<adf12>	U/Q	34	46	FAULT	Function unit	Faulty

1391: Telegram repertoire COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
Z	<CCaddr>	<adf12>	R	34	86	Function unit	Acknowledgment (fault)

5.9.8 Structure 1391: Function unit FBA panel (C111 only)

Abstract representation of a FBA panel (fire brigade control panel). This structure is only visible in C111 control panels.

1391: Addressing
Sector: BASIC
ADF1/2: Based on sequence number

1391: Valid states

State	Description	Valid commands
NORMAL	No fault in the function unit.	
FAULTY	One of the following faults exists in the function unit: - No connection to FBA - General fault	ACKNOWLEDGE

1391: State transition diagram

From	To	FAULTY	NORMAL
FAULTY		---	↓ Fault ----- N 34 3C
NORMAL		↑ Fault ----- U 34 46	---

1391: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
Z	<CCaddr>	<adf12>	N	34	3C	NORMAL	Function unit	Normal
Z	<CCaddr>	<adf12>	U/Q	34	46	FAULT	Function unit	Faulty

1391: Telegram repertoire COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
Z	<CCaddr>	<adf12>	R	34	86	Function unit	Acknowledgment (fault)

5.9.9 Structure 1392: CC11 VDS Interface Part 1

Datapoint: VDS_FBF (FBF)

This datapoint covers the fault signals of the FBF (fire brigade operating panel) and the basic function unit.

1392/FBF: Addressing

Sector: BASIC

ADF1/2: sequence number based

1392/FBF: Valid states

State	Description	Valid commands
NORMAL	No faults in the FBF or function unit.	
FAULTY	One of the following faults exists: - Processor failure - Emergency operation monitoring defective - Configuration error - FBF faulty - FBF Power Supply faulty	ACKNOWLEDGE

1392/FBF: State transition diagram

From	To	FAULTY	NORMAL
FAULTY		---	↓ Fault ----- N 34 3C
NORMAL		↑ Fault ----- U 34 46	---

1392/FBF: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
Z	<CCaddr>	<adf12>	N	34	3C	NORMAL	Function unit	Normal
Z	<CCaddr>	<adf12>	U/Q	34	46	FAULT	Function unit	Faulty

1392/FBF: Telegram repertoire COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
Z	<CCaddr>	<adf12>	R	34	86	Function unit	Acknowledgment (fault)

Datapoint: VDS_FUE (FUE)

This datapoint covers the state of the alarm remote transmission (FUE).

1392/FUE: Addressing

Sector: FIRE

ADF1/2: sequence number based

1392/FUE: Valid states

State	Description	Valid commands
INACTIVE	The remote transmission (FUE) is ready and in the quiescent state.	
ACTIVE	The FUE is activated.	
OFF	The FUE is switched-off.	ACKNOWLEDGE
FAULTY	One or more faults exist in the FUE part of the function unit: - Processor failure - line fault - Activation error - Deactivation error	ACKNOWLEDGE

1392/FUE: State transition diagram

From	To	ACTIVE	OFF	FAULTY	INACTIVE
ACTIVE		---	↑ Off ----- U 09 56	↓ Active & Faulty ----- U 09 46	↑ Inactive ----- N 09 4D
OFF		---	---	↑ On & Faulty ----- U 09 46	↑ On ----- N 09 4D
FAULTY		---	↑ Off ----- U 09 56	---	↓ Faulty ----- N 09 4D
INACTIVE		↑ Active ----- U 09 4F	↑ Off ----- U 09 56	↑ Faulty ----- U 09 46	---

1392/FUE: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
W	<CCaddr>	<adf12>	U/Q	09	46	FAULT	Remote transmission ALARM	Faulty
W	<CCaddr>	<adf12>	N	09	4D	NORMAL	Remote transmission ALARM	Inactive
W	<CCaddr>	<adf12>	Q	09	4F	ANOMALY	Remote transmission ALARM	Active
W	<CCaddr>	<adf12>	U/Q	09	56	ANOMALY	Remote transmission ALARM	Off

1392/FUE: Telegram repertoire: COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
W	<CCaddr>	<adf12>	R	09	86	Remote transmission ALARM	Acknowledgment (fault)
W	<CCaddr>	<adf12>	R	09	89	Remote transmission ALARM	Acknowledgment (anomaly)

5.9.10 Structure 1393: CC11 VDS Interface Part 2

Datapoint: VDS_LSE (LSE)

This datapoint covers the states of the extinguishing interface (LSE).

1393/LSE: Addressing

Sector: EXTINGUISHING

ADF1/2: sequence number based

1393/LSE: Valid states

State	Description	Valid commands
ENABLED	The extinguishing system (LSE) is ready and in the quiescent state.	
ALARM	The LSE is activated.	ACKNOWLEDGE RESET
DISABLED	The LSE is disabled.	ACKNOWLEDGE
FAULTY	One or more faults exist in the LSE part of the function unit: - Processor failure - line fault - Activation error - Deactivation error	ACKNOWLEDGE

1393/LSE: State transition diagram

From	To	ALARM	DISABLED	FAULTY	ENABLED
ALARM		---	↑ Disable ----- N 08 85 U 4D 5D	---	↑ Reset ----- N 08 85 N 4D 5A
DISABLED		---	---	↑ Enable & Faulty ----- U 4D 46	↑ On ----- N 4D 5A
FAULTY		---	↑ Disable ----- U 4D 5D	---	↓ Faulty ----- N 4D 5A
ENABLED		↑ Alarm ----- U 08 00	↑ Disable ----- U 4D 5D	↑ Faulty ----- U 4D 46	---

1393/LSE: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
L	<CCaddr>	<adf12>	U/Q	08	00	ALARM	Extinguishing alarm	---
L	<CCaddr>	<adf12>	N	08	85	NORMAL	Extinguishing alarm	Reset
L	<CCaddr>	<adf12>	U/Q	4D	46	FAULT	Release	Faulty
L	<CCaddr>	<adf12>	U/Q	4D	5D	ANOMALY	Release	Disabled
L	<CCaddr>	<adf12>	N	4D	5A	NORMAL	Release	Enabled

1393/LSE: Telegram repertoire: COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
L	<CCaddr>	<adf12>	R	08	80	Extinguishing alarm	Acknowledgment (alarm)
L	<CCaddr>	<adf12>	R	08	80	Extinguishing alarm	Reset (alarm)
L	<CCaddr>	<adf12>	R	4D	86	Release	Acknowledgment (fault)
L	<CCaddr>	<adf12>	R	4D	89	Release	Acknowledgment (anomaly)

Datapoint: VDS_FSK (FSK)

This datapoint covers the states of the fire brigade key (FSK).

1393/FSK: Addressing

Sector: FIRE

ADF1/2: sequence number based

1393/FSK: Valid states

State	Description	Valid commands
NORMAL	The key box (FSK) is ready and in the quiescent state.	
SABOTAGE	The FSK is tampered.	ACKNOWLEDGE RESET
FSK MANUALLY UNLOCKED	the FSK is manually unlocked via switch on the VDS interface board	
FSK UNLOCKED	FSK door is unlocked due to fire alarm	
FSK OPEN	FSK door is open	
FSK KEY MISSING	the key in the FSK key box is missing	
FAULTY	One or more faults exist in the FSK part of the function unit: - Processor failure - others	ACKNOWLEDGE

1393/FSK: State transition diagram

From \ To	SABOTAGE	KEY MISSING	MANUALLY UNLOCKED	UNLOCKED	OPEN	FAULTY	NORMAL
SABOTAGE	---	---	---	---	---	---	↑ Reset ----- N 0C 85 N 34 3C
KEY MISSING	---	---	---	---	---	---	↓ Key missing ----- N 34 3C
MANUALLY UNLOCKED	---	---	---	---	---	↑ Faulty ----- U 34 46	↓ M.unlocked ----- N 34 3C
UNLOCKED	---	---	---	---	Alarm AND ↑ Open ----- U 34 27	↑ Faulty ----- U 34 46	↓ Unlocked ----- N 34 3C
OPEN	---	Alarm Reset AND ↑ Key missing ----- U 34 28	---	---	---	↑ Faulty ----- U 34 46	↓ Open ----- N 34 3C
FAULTY	---	↑ Key missing ----- U 34 28	---	---	---	---	↓ Faulty ----- N 34 3C
NORMAL	↑ Sabotage ----- U 0C 00	---	↑ Man.unlocked ----- U 34 25	Alarm AND ↑ Unlocked ----- U 34 26	---	↑ Faulty ----- U 34 46	---

1393/FSK: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
W	<CCaddr>	<adf12>	U/Q	0C	00	ALARM	Sabotage	---
W	<CCaddr>	<adf12>	N	0C	85	ALARM	Sabotage	Reset
W	<CCaddr>	<adf12>	U/Q	34	46	FAULT	Function unit	Faulty
W	<CCaddr>	<adf12>	U/Q	34	25	ANOMALY	Function unit	FSK manually unlocked
W	<CCaddr>	<adf12>	U/Q	34	26	ANOMALY	Function unit	FSK unlocked
W	<CCaddr>	<adf12>	U/Q	34	27	ANOMALY	Function unit	FSK open
W	<CCaddr>	<adf12>	U/Q	34	28	FAULT	Function unit	FSK key missing
W	<CCaddr>	<adf12>	N	34	3C	NORMAL	Function unit	Normal

1393/FSK: Telegram repertoire: COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
W	<CCaddr>	<adf12>	R	0C	80	Sabotage	Acknowledgment (alarm)
W	<CCaddr>	<adf12>	R	0C	83	Sabotage	Reset (alarm)
W	<CCaddr>	<adf12>	R	34	86	Function unit	Acknowledgment (fault)

5.9.11 Structure 1395: Function unit EXTINGUISHING control module

Abstract representation of an EXTINGUISHING control module.

1395: Addressing
Sector: BASIC
ADF1/2: Based on sequence number

1395: Valid states

State	Description	Valid commands
NORMAL	No fault in the function unit.	
FAULTY	One of the following faults exists in the function unit: - Processor failure - General fault - Configuration error - Failure of an extinguishing control	ACKNOWLEDGE

1395: State transition diagram

	To	FAULTY	NORMAL
From			
FAULTY		---	↓ Fault ----- N 34 3C
NORMAL		↑ Fault ----- U 34 46	---

1395: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
Z	<CCaddr>	<adf12>	N	34	3C	NORMAL	Function unit	Normal
Z	<CCaddr>	<adf12>	U/Q	34	46	FAULT	Function unit	Faulty

1395: Telegram repertoire COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
Z	<CCaddr>	<adf12>	R	34	86	Function unit	Acknowledgment (fault)

5.9.12 Structure 1396: Function unit LON interface part 1

Abstract representation of a LON network with attached nodes 1..10.

1396: Addressing
Sector: BASIC
ADF1/2: Based on sequence number

1396: Valid states

State	Description	Valid commands
NORMAL	No fault in the function unit.	
FAULTY	One of the following faults exists in the function unit: - No connection to LON interface - one or more nodes on the LON network faulty - General fault	ACKNOWLEDGE

1396: State transition diagram

From	To	FAULTY	NORMAL
FAULTY		---	↓ Fault ----- N 34 3C
NORMAL		↑ Fault ----- U 34 46	---

1396: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
Z	<CCaddr>	<adf12>	N	34	3C	NORMAL	Function unit	Normal
Z	<CCaddr>	<adf12>	U/Q	34	46	FAULT	Function unit	Faulty

1396: Telegram repertoire COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
Z	<CCaddr>	<adf12>	R	34	86	Function unit	Acknowledgment (fault)

5.9.13 Structure 1397: Function unit LON interface part 2

Abstract representation of a LON network with attached nodes 11..32.

1397: Addressing
Sector: BASIC
ADF1/2: Based on sequence number

1397: Valid states

State	Description	Valid commands
NORMAL	No fault in the function unit.	
FAULTY	One of the following faults exists in the function unit: - No connection to LON interface - one or more nodes on the LON network faulty - General fault	ACKNOWLEDGE

1397: State transition diagram

From	To	FAULTY	NORMAL
FAULTY		---	↓ Fault ----- N 34 3C
NORMAL		↑ Fault ----- U 34 46	---

1397: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
Z	<CCaddr>	<adf12>	N	34	3C	NORMAL	Function unit	Normal
Z	<CCaddr>	<adf12>	U/Q	34	46	FAULT	Function unit	Faulty

1397: Telegram repertoire COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
Z	<CCaddr>	<adf12>	R	34	86	Function unit	Acknowledgment (fault)

5.10 Hierarchical level: STATION

The following devices are *Stations* on the C-bus:

- CC11Control units
- CI11 Compact control units (CC11 and CT11 integrated on the same hardware)
- CT11 Display terminals
- CK11DMS7000 Gateway

Stations contain parallel information that cannot be combined into a unique state. For this reason the information is mapped to several datapoints.

5.10.1 Structure 1201: CC11 Control unit

Abstract representation of a CC11 control unit. The station contains the datapoints:

- ALARM
- CONTROL UNIT
- PRINTER

Datapoint ALARM (ALM)

1201/ALM: Addressing

Sector: FIRE

ADF1/2: Based on sequence number

1201/ALM: Valid states

State	Description	Valid commands
RESET	The function unit is not in the alarm state.	
ALARM	Emergency operation alarm. An alarm has been signalled via the emergency operation system. This points to a fault in a lower ranking function unit. The alarm point cannot be localized.	ACKNOWLEDGE RESET

1201/ALM: State transition diagram

From	To	ALARM	RESET
ALARM		---	↓ Alarm ----- N 01 85
RESET		↑ Alarm ----- U 01 00	---

1201/ALM: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
W	<CCaddr>	<adf12>	U/Q	01	00	ALARM	Alarm	---
W	<CCaddr>	<adf12>	N	01	85	NORMAL	Alarm	Reset

1201/ALM: Telegram repertoire COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
W	<CCaddr>	<adf12>	R	01	80	Alarm	Acknowledgment (Alarm)
W	<CCaddr>	<adf12>	R	01	83	Alarm	Reset

Datapoint CONTROL UNIT (CTP)

1201/CTP: Addressing

Sector: BASIC

ADF1/2: 0003

1201/CTP: Valid states

State	Description	Valid commands
NORMAL	No fault exists in the station	
FAULTY	One of the following faults exists in the station: - Emergency operation monitoring defective - C-Bus fault - I-Bus fault - Configuration error	ACKNOWLEDGE

1201/CTP: State transition diagram

From	To	FAULTY	NORMAL
FAULTY		---	↓ Fault ----- N 33 3C
NORMAL		↑ Fault ----- U 33 46	---

1201/CTP: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
Z	<CCaddr>	<adf12>	N	33	3C	NORMAL	Control unit	Normal
Z	<CCaddr>	<adf12>	U/Q	33	46	FAULT	Control unit	Faulty

1201/CTP: Telegram repertoire COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
Z	<CCaddr>	<adf12>	R	33	86	Control unit	Acknowledgment (fault)

Datapoint PRINTER (PRT)

1201/PRT: Addressing

Sector: BASIC

ADF1/2: 000D

1201/PRT: Valid states

State	Description	Valid commands
NORMAL	The printer is switched on and there is no fault.	
OFF	The printer is switched off.	
FAULTY	One of the following faults exists in the printer: - XOFF or DTR Timeout - End of paper - Printing mechanism blocked.	ACKNOWLEDGE

1201/PRT: State transition diagram

From \ To	OFF	FAULTY	NORMAL
OFF	---	↑ On & Fault ----- U 36 46	↑ On ----- N 36 3C
FAULTY	↑ Off ----- Q 36 56	---	↓ Fault ----- N 36 3C
<u>NORMAL</u>	↑ Off ----- Q 36 56	↑ Fault ----- U 36 46	---

1201/PRT: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
Z	<CCaddr>	<adf12>	N	36	3C	NORMAL	Printer	Normal
Z	<CCaddr>	<adf12>	U/Q	36	46	FAULT	Printer	Faulty
Z	<CCaddr>	<adf12>	Q	36	56	ANOMALY	Printer	Off

1201/PRT: Telegram repertoire COMMAND

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
Z	<CCaddr>	<adf12>	R	36	86	Printer	Acknowledgment (fault)

5.10.2 Structure 1202: CT11 Terminal

Abstract representation of a CT 11 terminal

1202: Addressing
Sector: BASIC
ADF1/2: Based on sequence number

1202: Valid states

State	Description	Valid commands
NORMAL	There is no fault in the station	
FAULTY	One of the following faults exists in the station: - Connection CC11 <> CT11 faulty - Power supply failure - C-Bus fault - I-Bus fault - Configuration error	ACKNOWLEDGE

1202: State transition diagram

From	To	FAULTY	NORMAL
FAULTY		---	↓ Fault ----- N 4C 3C
NORMAL		↑ Fault ----- U 4C 46	---

1202: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
Z	<CCaddr>	<adf12>	N	4C	3C	NORMAL	Terminal	Normal
Z	<CCaddr>	<adf12>	U/Q	4C	46	FAULT	Terminal	Faulty

1202: Telegram repertoire COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
Z	<CCaddr>	<adf12>	R	4C	86	Terminal	Acknowledgment (fault)

5.10.3 Structure 1203: CK11 Gateway

Abstract representation of a CK11 gateway. The station contains the datapoints:

- POWER SUPPLY
- DMS7000 NETWORK
- C-BUS

Datapoint DMS7000 NETWORK (NET)

This datapoint relates to the DMS7000 communication interface of the CK11.

1203/NET: Addressing

Sector: BASIC

ADF1/2: 0008

1203/NET: Valid states

State	Description	Valid commands
NORMAL	No DMS7000 network fault exists in the station.	
FAULTY	The station has detected the failure of a data link of the DMS7000 (CERLOOP) network.	ACKNOWLEDGE

1203/NET: State transition diagram

From	To	FAULTY	NORMAL
FAULTY		---	↓ Fault ----- N 38 3C
NORMAL		↑ Fault ----- U 38 46	---

1203/NET: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
Z	<CCaddr>	<adf12>	N	38	3C	NORMAL	Data network	normal
Z	<CCaddr>	<adf12>	U/Q	38	46	FAULT	Data network	Faulty

1203/NET: Telegram repertoire COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
Z	<CCaddr>	<adf12>	R	38	86	Data network	Acknowledgment (fault)

Datapoint C-BUS (BUS)

This datapoint relates to the C-BUS interface of the CK11.

1203/NET: Addressing

Sector: BASIC

ADF1/2: 0009

1203/BUS: Valid states

State	Description	Valid commands
NORMAL	No DMS7000 network fault exists in the station.	
FAULTY	The station has detected the failure of a data link of the DMS7000 (CERLOOP) network.	ACKNOWLEDGE

1203/BUS: State transition diagram

From	To	FAULTY	NORMAL
FAULTY		---	↓ Fault ----- N 38 3C
NORMAL		↑ Fault ----- U 38 46	---

1203/BUS: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
Z	<CCaddr>	<adf12>	N	38	3C	NORMAL	Data network	normal
Z	<CCaddr>	<adf12>	U/Q	38	46	FAULT	Data network	Faulty

1203/BUS: Telegram repertoire COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
Z	<CCaddr>	<adf12>	R	38	86	Data network	Acknowledgment (fault)

Datapoint POWER SUPPLY (PWR)

This datapoint relates to the autonomous power supply of the CK11.

1203/PWR: Addressing

Sector: BASIC

ADF1/2: 0007

1203/PWR: Valid states

State	Description	Valid commands
NORMAL	No power supply fault exists in the station.	
FAULTY	One of the following power supply faults exists in the station: - Power supply fault - Battery failure - End of battery autonomy	ACKNOWLEDGE
BATTERY OPERATION	A mains failure has been detected and the "Mains failure" delay (default = 30 min) has expired.	ACKNOWLEDGE

1203/PWR: State transition diagram

From	To	FAULTY	BATTERY OPERATION	NORMAL
FAULTY		---	↓ Fault & Battery operation ----- N 3C 3D	↓ Fault ----- N 3C 3C
BATTERY OPERATION		↑ Fault ----- U 3C 46	---	↓ Battery operation ----- N 3C 3C
NORMAL		↑ Fault ----- U 3C 46	↑ Battery operation ----- N 3C 3D	---

1203/PWR: Telegram repertoire: MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
Z	<CCaddr>	<adf12>	N	3C	3C	NORMAL	Power supply	Normal
Z	<CCaddr>	<adf12>	U/Q	3C	3D	FAULT	Power supply	Battery operation
Z	<CCaddr>	<adf12>	U/Q	3C	46	FAULT	Power supply	Faulty

1203/PWR: Telegram repertoire: COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
Z	<CCaddr>	<adf12>	R	3C	86	Power supply	Acknowledgment (fault)

5.10.4 Structure 1210: CI11 Compact control unit

Abstract representation of a CI11 compact control unit. [See structure 1201 for details.](#)

5.10.5 Structure 1211: CC11 Control unit (Remote)

Abstract representation of the connection status of a remote CC11 control unit. Each CC11 may have up to 3 instances of structure 1211 representing the connection status to the other CC11 stations on the same C-Bus. These connection information is required if the different CC11s depend on a centralized remote transmission device or include distributed controls. The structure contains the datapoint CONNECTION.

1211/CON: Addressing

Sector: BASIC

ADF1/2: Based on sequence number

1211/CON: Valid states

State	Description	Valid commands
NORMAL	Normal connection to remote CC11.	
FAULTY	Connection to remote CC11 failed.	ACKNOWLEDGE

1211/CON: State transition diagram

From	To	FAULTY	NORMAL
FAULTY		---	↓ Fault ----- N 38 3C
NORMAL		↑ Fault ----- U 38 46	---

1211/CON: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
Z	<CCaddr>	<adf12>	N	38	3C	NORMAL	Data network	normal
Z	<CCaddr>	<adf12>	U/Q	38	46	FAULT	Data network	Faulty

1211/CON: Telegram repertoire COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
Z	<CCaddr>	<adf12>	R	38	86	Data network	Acknowledgment (fault)

5.11 Polling Procedure

To initialize the process image in the management system after a communications failure, the individual CC11 control units must be polled. Rules:

- A special set of telegrams has been defined for the polling sequence.
- The polling sequence is typically used when a control unit is signalled signed back onto the network, or when the management system is started.
- Each CC11 station within a CS 11 system must be polled separately because on the DMS7000 side each CC11 system functions like an autonomous control unit.
- Each defined danger sector of a CC11 must be polled separately. The existing sectors can be determined from the configuration file.
- Polling is sequential in order to minimize the network load.
- If a station does not respond to the polling commands within the predefined time (approx. 20 sec.), the next station shall be polled.
- The responses to a polling command consist only of anomalies, embedded between a polling begin and polling end telegram.

5.11.1 Telegram repertoire

Commands

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
P W Z	<CCaddr>	0000	R	53	55	Polling	On
P W Z	<CCaddr>	0000	R	53	52	Polling	Perform

Messages

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
P W Z	<CCaddr>	0000	N	53	3A	NORMAL	Polling	Begin
P W Z	<CCaddr>	0000	N	53	3B	NORMAL	Polling	End

5.11.2 Example: Polling a CS11 Systems

Sample system configuration

The CS11 system consists of two CC11 stations and the CK11 gateway.

- CK11 Gateway: DMS address 860 Sectors: BASIC (Z).
- CC11 Nr.1: DMS address: 111 Sectors: BASIC (Z), FIRE (W), PLANT MONITORING (P).
- CC11 Nr.2: DMS address: 112 Sectors: BASIC (Z), FIRE (W).

Polling sequence

Management system	Telegram	CS11 station
Polling CK11, Sector Z	Z860000R5355 → Z860000R5352 →	
	← Z860000N533A ← Z8600008Q3846 ← Z860000N533B	CK11 reply: - Data network faulty
Polling CC11 No.1, Sector Z	Z1110000R5355 → Z1110000R5352 →	
	← Z1110000N533A ← Z111000DQ3656 ← Z1110E38U3446 ← Z1110000N533B	CC11 (1) Reply: - Printer switched off - Function unit faulty
Polling CC11 No.1, Sector W	W1110000R5355 → W1110000R5352 →	
	← W1110000N533A ← W111A1EFN5560 ← W111A2EFN5560 ← W11101B2U033A ← W11101B9Q6457 ← W1110185U6746 ← W1110000N533B	CC11 (1) Reply: - Organization "Night" mode (area 1) - Organization "Night2 MODE" (area 2) - Detector zone warning - Detector zone test - Element faulty
Polling CC11 No.1, Sector P	P1110000R5355 → P1110000R5352 →	
	← P1110000N533A ← P11101A5U624F ← P11101A0Q6246 ← P1110000N533B	CC11 (1) Reply: - Control group active - Control zone faulty
Polling CC11 No. 2, Sector Z	Z1120000R5355 → Z1120000R5352 →	
	← Z1120000N533A ← Z1120003U3346 ← Z1120000N533B	CC11 (1) Reply: - Control unit faulty
Polling CC11 No.2, Sector W	W1120000R5355 → W1120000R5352 →	
	← W1120000N533A ← W112A5EFN5560 ← W1120000N533B	CC11 (1) Reply: - Organization "Night" mode
Polling completed.		

5.12 Time Telegram

The clock of the devices connected to a DMS7000 network can be synchronized with time telegrams. The CK11 gateway transmit the time information to the CC11 stations.

Example

Management system	Telegram	CK11-Station
Management system transmits one time telegram every 10 minutes (default)	T100296113500 →	CK11 receives time telegrams and synchronizes the clocks of all C-bus devices.

6 Examples

The following examples show typical events and how they are processed.

6.1 Alarms

6.1.1 Local alarm in DAY mode

Assumptions: CC11 with DMS address 111, organization DAY MODE, Operation before expiration CAC

CC11	Telegram	Management system
Detector generates danger level = 2 (Pre-alarm state)	W1110B33U033A → W1110B6BQ674F →	(Warning) (Element active)
(Command acknowledgment warning)	←W1110B33R0389	Warning is acknowledged by operator
'Warning' state is acknowledged	W1110B33Q033A →	
Detector generates danger level = 3 (Alarm-State). CAC-V1 starts.	W1110B33N033B → W1110B33U0101 → W1110B30Q0101 → W111A1CDQ0500 → W1110279U7A4F →	(Warning end) (Autom. detector alarm) (Collective alarm, Section) (Local alarm area 1) (Internal horn Active)
(Command acknowledgment alarm)	←W1110B33R0180	Alarm is acknowledged by the operator (before expiration of CAC V1).
'Alarm' state is acknowledged. CAC-V1 stops, CAC-V2 starts.	W1110B33Q0101 → W1110279Q7A4F → W1110279N7A4D →	(Alarm acknowledged) (Internal horn acknowledged) (Internal horn inactive)
		Cause of alarm is being investigated and remedied.
(Command reset alarm)	←W1110B33R0183	Alarm is reset by operator (before expiration of CAC-V2).
Alarm reset. Detector and zone in normal state, CAC-V2 stops.	W1110B33N0185 → W1110B30Q0185 → W111A1CDQ0585 → W1110B33N643C → W1110B6BN673C →	(Alarm reset) (Collective section alarm reset) (Local alarm area 1 reset) (Zone normal) (detection device normal)

6.1.2 General alarm in day mode

Assumptions: CC11 with DMS address 111, organization DAY mode, operation before expiration of CAC.

CC11	Telegram	Management system
Detector generates danger level = 2 (Pre-alarm state)	W1110B33U033A → W1110B6BQ674F →	(Warning) (Element active)
(Command acknowledgment warning)	←W1110B33R0389	Warning is acknowledged by operator.
'Warning' state is acknowledged	W1110B33Q033A →	
Detector generates danger level = 3 (alarm state). CAC-V1 starts.	W1110B33N033B → W1110B33U0101 → W1110B30Q0101 → W111A1CDQ0500 → W1110277U7A4F →	(Warning end) (Autom. detector alarm) (Collective alarm Section) (Local alarm Sector 1) (Internal horn active)
(Command acknowledgment alarm)	←W1110B33R0180	Alarm is acknowledged by operator (before expiration of CAC-V1).
'Alarm' state is acknowledged. CAC-V1 stops, CAC-V2 starts.	W1110B33Q0101 → W1110277Q7A4F → W1110277N7A4D →	(Alarm acknowledged) (Internal horn acknowledged) (Internal horn inactive)
		The cause of the alarm is being investigated.
The situation proves to be so serious that the fire brigade has to be summoned immediately. Manual manual callpoint is pressed.	W1110B40U0102 → W1110B41Q674F → W111A1CDQ0600 → W1110277U7A4F → W1110278U734F → W111027EQ094F →	(Man. detector alarm) (Detection device active) (General alarm Sector 1) (Internal horn active) (External horn active) (Remote transmission alarm active)
Fire fighting in progress.		
(Command acknowledgment alarm)	←W1110B40R0180	Alarm is acknowledged by the operator
	W1110B40Q0102 → W1110277Q7A4F → W1110277N7A4D → W1110278Q734F →	(Alarm acknowledged) (Internal horn acknowledged) (Internal horn inactive) (External horn acknowledged)
(External horn inactive command)	←W1110278R734D	External horn is switched off by the operator.
External horn switched off	W1110278N734D →	(External horn inactive)
(Command reset alarm)	←W111A1CDR0683	Fire extinguished. Alarm reset by the operator (via the Sector)
Alarms reset. Everything back in normal condition.	W1110B33N0185 → W1110B40N0185 → W1110B30Q0185 → W111A1CDQ0585 → W111027EN094D → W1110B33N643C → W1110B6BN673C → W1110B40N643C → W1110B41N673C →	(Autom. detector alarm reset) (Man. detector alarm reset) (Collective section alarm reset) (General alarm Sector 1 reset) (Remote transmission alarm inactive) (Zone normal) (Detection device normal) (Zone normal) (Detection device normal)

6.1.3 General alarm in night mode

Assumptions: CC11 with DMS address 111, organization NIGHT mode.

CC11	Telegram	Management system
Detector generates danger level = 3 (Alarm-State)	W1110B33U033A → W1110B6BQ674F → W1110B33N033B → W1110B33U0101 → W1110B30Q0101 → W111A1CDQ0500 → W111A1CDQ0600 → W1110277U7A4F → W1110278U734F → W111027EQ094F →	(Warning) (Element active) (Warning end) (Autom. detector alarm) (Collective section alarm) (Sector 1 = Local alarm) (Sector 1 = General alarm) (Internal horn active) (External horn active) (Remote transmission alarm active)
(Command acknowledgment alarm)	←W1110B33R0180	Alarm is acknowledged by the operator
'Alarm' state is acknowledged	W1110B33Q0101 → W1110277Q7A4F → W1110277N7A4D → W1110278Q734F →	(Alarm acknowledged) (Internal horn acknowledged) (Internal horn inactive) (External horn acknowledged)
(External horn inactive commando)	←W1110278R734D	External horn is deactivated by the operator
External horn deactivated	W1110278N734D →	(External horn Inactive)
		The cause of the alarm is being investigated and remedied.
(Command reset alarm)	←W1110B33R0183	Alarm is reset by the operator.
Alarm reset. Detector and zone in normal state.	W1110B33N0185 → W1110B30N0185 → W1110B33N643C → W1110B6BN673C → W111A1CDN0685 → W111027EN094D →	(Alarm reset) (Collective section alarm reset) (Zone normal) (Detection device normal) (General alarm reset) (Remote transmission alarm inactive)

6.1.4 Extinguishing sequence

Assumptions: CC11 with DMS address 111, extinguishing system triggered by automatic detectors

CC11	Telegram	Management system
1st detector generates danger level = 2	L11103B1U033A → L11103B4Q674F →	(Warning) (Detection device active)
1st detector generates danger level = 3	L11103B1N033B → L11103B1U0401 → W111A4CDQ0500 → W111027EU7A4F →	(Warning end) (Pre-alarm autom. detector) (Local alarm area 4) (Internal horn active)
2nd detector generates danger level = 3	L11103B5Q674F → L11103B1U0801 → L111B6EBU0801 → W111A4CDQ0600 → W111029FU734F → W1110294Q094F →	(Detection device active) (Extinguishing alarm autom. detector, zone) (Extinguishing alarm autom. detector, section) (General alarm area 4) (External horn active) (Remote transmission alarm active)
State = Evacuation. The delay before the extinguishing valve opens is counted down. To ensure that sufficient time remains for evacuation, the emergency stop button is pressed. The delay timer is interrupted.	W111A4ECQ753A → L111B6AEU4D5D →	(Part of system off, area 4) (Release inhibited, extinguishing section 6)
The personnel is evacuated. The emergency stop button is released. Countdown of the delay for opening the extinguishing valve continues.	L111B6AEN4D5A → W111A4ECN753B →	(Release not inhibited, exting. section 6) (Part of system off ended, area 4)
Delay expires. Extinguishing valve opens.	L111B6AEQ4D4F →	(Release active, extinguishing section 6)
	←W111A4CDR0680	Acknowledge alarms (via area)
All alarms are acknowledged.	L11103B1Q0801 → L111B6EBQ0801 → W111027EQ7A4F → W111027EN7A4D → W111029FQ734F →	(Extinguishing alarm exting. zone acknowledged) (Extinguishing alarm extinguishing zone acknowledged) (Internal horn acknowledged) (Internal horn Inactive) (External horn acknowledged)
	←W111A4CDR0683	Reset alarms (via area)
	L11103B4N674D → L11103B5N674D → L11103B1N0885 → L11103B1N643C → L111B6EBN0885 → L111B6AEN4D5A → W111A4CDN0685 → W111029FN734N → W1110294N094D →	(Detection device normal) (Detection device normal) (Extinguishing alarm exting. zone reset) (Zone normal) (Extinguishing alarm exting. section reset) (Release not inhibited, exting. section 6) (General alarm area 4 reset) (External horn Inactive) (Remote transmission alarm inactive)
Extinguishing system not ready (extinguishing valve, extinguishant supply)	W111A4EDQ743A → L111B6EDU3A3A → W111A4ECQ753A → L111B6AEQ4D5D →	(Collective fault area 4) Sector 4) (Fault extinguishing section 6) (Collective switch-off area 4) (Release inhibited, exting. section 6)
	←L111B6EDR3A86	(Acknowledge fault ext. section 6)
Fault is acknowledged.	L111B6EDQ3A3A →	(Fault exting. section 6 acknowledged)
Extinguishing ready again (valve armed, extinguishant replenished)	W111A4EDN743B → L111B6EDN3A3N → W111A4ECN753B → L111B6AEN4D5A →	(Collective fault end, area 4) (Fault end, exting. section 6) (Collective switch-off area 4) (Release inhibited, exting. section 6)

6.2 Faults

6.2.1 Detector fault

Assumptions: CC11 with DMS address 111, organization DAY mode, operation before expiration of fault CAC.

CC11	Telegram	Management system
Detector faulty	W1110B6BU6746 → W111A1EDQ743A →	(Detection device faulty) (Collective fault area 1)
(Fault acknowledgment command)	←W1110B6BR6786	Fault is acknowledged by the operator
'Fault' state is acknowledged	W1110B6BQ6746 →	
		The cause of the fault is being investigated and remedied.
Detector in normal state	W1110B6BN673C → W111A1EDN743B →	(Detection device normal) (Collective fault area 1 ended)

6.3 Others

6.3.1 Organization changeover

Assumptions: CC11 with DMS address 111, organization DAY mode

CC11	Telegram	Management system
(<i>Night</i>) command	←W111A1EFR5555	Area 1 is switched to <i>Night</i> mode by the operator.
Area 1 is switched to <i>Night</i> mode.	W111A1EFN5560 →	

Assumptions: CC11 with DMS address 111, organization NIGHT mode.

CC11	Telegram	Management system
(<i>Day</i> command)	←W111A1EFR5556	Area 1 is switched to <i>Day</i> mode by the operator.
Area 1 is switched to <i>Day</i> mode.	W111A1EFN5561 →	

6.3.2 Switching a detection zone

Assumptions: CC11 with DMS address 111

CC11	Telegram	Management system
(<i>Off</i> command)	←W1110B33R6456	Zone x is switched off by the operator.
Zone x is switched off.	W1110B33Q6456 → W111A1ECQ753A →	(Zone Off) (Collective switch-off area 1)
(<i>On</i> command)	←W1110B33R6455	Zone x is switched on by the operator.
Zone x is switched on.	W1110B33Q643C → W111A1ECN753B →	(Zone in normal operation) (Collective switch-off area 1 ended)

6.3.3 Switching a detection zone to TEST

Assumptions: CC11 with DMS address 111

CC11	Telegram	Management system
(Off Command)	←W1110B33R6457	Zone x is switched to test by the operator.
Zone x in test state.	W1110B33Q6457 → W111A1ECQ753A →	(Zone in test mode) (Collective switch-off area 1)
Affiliated detector is activated = test alarm on element level.	W1110B6BQ670B →	(Detection device test alarm)
Affiliated detector automatically returns to the normal state.	W1110B6BN673C →	
(On Command)	←W1110B33R6455	Detector test ended. Zone x is switched on by the operator (test off).
Zone x is switched on.	W1110B33Q643C → W111A1ECN753B →	(Zone in normal operation) (Collective switch-off area 1 ended)

7 Terminology and abbreviations

AlgoRex®	Registered trade name for the CS11 fire detection system
Area	The system behavior is determined by the two alarm organizations “Day” and “Night”. All system components that are controlled by a common alarm organization belong to the same Area. The changeover of the alarm organization can influence the operating states of the lower ranking system levels <i>Section</i> , <i>Zone</i> , and <i>Element</i> .
C-Bus	Fault-tolerant communications network for data exchange between the <i>Stations</i> .
CAC	Abbreviation for <u>C</u> ERBERUS <u>A</u> larm <u>C</u> oncept. The CAC defines the behavior of the security system control unit in <i>Day</i> and <i>Night</i> mode. In <i>Day</i> mode remote transmission of alarms is initiated only after expiration of the presence monitoring time (V1) or the alarm investigation time (V2). In <i>Night</i> mode remote transmission of alarms and faults is initiated without delay.
CBD	See <i>Station</i>
CC11	Control unit station with the CS11. Maximum 4 per CS11.
CK11	Gateway station between the CS11 and a DMS7000 network.
CT11	Display terminal station within the CS11. Maximum 12 per CS11.
D-Bus	Sensor/Actor bus, starting at an IBD, allows operation of detectors and digital I/O units.
DBD	See <i>Device</i>
Device	The detectors and actors on the D-bus are referred to as <i>Device</i> . These are only visible via the affiliated <i>Element</i> .
DMS7000 network	Message-oriented communications network that allows data exchange between fire and security controlunits and Cerberus or external management systems.
Element	Logical mapping of a <i>Device</i> . Supplies the higher ranking zone with current information, e.g. danger levels.
Function unit	Devices on the I-bus are referred to as <i>Function units</i> . Typical function units are detector line modules, emergency power monitoring units, digital I/O modules, etc.
I-Bus	Internal communications bus of a station. Provides the connection between the station and the connected function units.
IBD	See <i>Function unit</i>
Logical tree	Data map of the logical / geographical CS11 structure.
Physical tree	Data map of the CS11 hardware
Section	<i>Sections</i> combine the states of several zones and represent these in a concentrated form. <i>Sections</i> allow collective operation of the corresponding <i>Zones</i> .
SeqNr	Represents the station-wide unique key of a tree node.
Station	Device on the C-bus.
StrucNr	Identifies the data type of a specific tree node.
Zone	Derived from the term <i>Protection zone</i> . The zone evaluates the information of the affiliated elements and initiates an alarm, if required.

8 APPENDIX A: Telegram list CS11 V5.1x

All DMS7000 telegrams used in version 5.1 are listed in the Appendix, sorted by structure number.

(See doc. no. e2017a : Telegram tables CS11 V5.1x APPENDIX A to doc. No. e1964a)

Siemens Building Technologies AG
Alte Landstrasse 411
CH-8708 Männedorf
Tel. +41 1 - 922 61 11
Fax +41 1 - 922 64 50
www.cerberus.ch