

# SIEMENS



## MK8000 OPC Server Interface

### Specifications for CS11 EP5

**Building Technologies**

Fire Safety & Security Products

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# About This Document

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## Purpose

The aim of this manual is to identify how the components of the CS11 EP5 AlgoRex are mapped and represented in the MK8000 OPC Server.

## Audience

This manual was written for software integrators responsible for connecting their SCADA and OPC Client applications to the CS11 EP5 Fire Subsystem (made up by CC11 control units and a CK11 interface) via MK8000 OPC Server. The reader should be familiar with OPC Specifications and software technologies such as COM/DCOM/OLE. Also, the reader should have been given a basic introduction to fire systems and more specifically to the CS11 AlgoRex.

## Scope

This document was last updated for market package MP1.31. It is intended as a supplement to the general MK8000 OPC Interface Specification.

## Reference documents

There are a few documents published by the OPC Foundation that are necessary and/or useful for understanding the underlying principles used in the MK8000 OPC Server. These PDF documents can be downloaded from [www.opcfoundation.org](http://www.opcfoundation.org). Select Latest Downloads from the Tech Info drop down menu on the main page of the site.

Name	Date	Comments
OPC Common 1.00	1998-10-27	
OPC DA 2.05 (Data Access Interface Specifications)	2001-12-17	
Using OPC via DCOM with Microsoft Windows XP Service Pack 2	2004	

## Modification index

### Modification index

Current version	Date	Notes
004974_d_en	02.2004	Corresponds to market package MP1.31 of MK8000 OPC Server Software
004974_c_en	10.2003	Corresponds to market package MP1.30 of MK8000 OPC Server Software
004974_b_en	07.2003	Corresponds to market package MP1.20 of MK8000 OPC Server Software
004974_a_en	05.2002	Corresponds to release 1.0 of MK8000 OPC Server Software

## Abbreviations

AlgoRex®	Registered trade name for the CS11 fire detection system
Area	All system components that are controlled by a common alarm organization belong to the same Area. The system behaviour is determined by the two alarm organizations "Day" and "Night". 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> .
Binary Alarm Activation	This concept is related to HOW an alarm is triggered. The binary trigger (also called "logical TRUE or FALSE" signal) means that if the detector senses the presence of something (for example, smoke or an intruder) it is triggered. The other concept is the Threshold trigger that occurs when an alarm is only triggered only when a device detects something beyond a certain quantity, for example when there is a high concentration of smoke (a cigarette wouldn't trigger the alarm, but a fire would).
BMS	Building Management Systems.
C-Bus	Fault-tolerant communications network for data exchange between the <i>Stations</i> .
CAC	Abbreviation for CERBERUS Alarm Concept. The CAC defines the behaviour 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). That is, a signal is sent at the first detection of an alarm. The operator has a fixed period of time in which he can respond to the alarm. Once he has acknowledged it, he has a fixed period of time in which he can respond to the event. If either of these times expires before action has been taken by the operator, the alarm severity is escalated. In <i>Night</i> mode remote transmission of alarms and faults is initiated without delay since it is generally expected that there will not be anyone present to respond to the alarm.
CBD	See <i>Station</i> .
CC11	Control unit station with the CS11. Maximum 4 per CS11.
CerBan / Cer-Loop network	Message-oriented communications network that allows data exchange between fire and security control units and Cerberus or external management systems.
CK11	Gateway station between the CS11 and a DMS7000 network.
COM/DCOM	Component Object Model / Distributed Component Object Model; software technology applied in MK8000.
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>Devices</i> . These are only visible via the affiliated <i>Element</i> .
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> .
Latched alarm	"Acknowledge" and "reset" commands are required to clear the alarm.
Logical tree	Data map of the logical / geographical CS11 structure.
N/A	Not-Applicable.
OPC	Ole for Process Control.
OLE	Object Linking and Embedding.
Physical tree	Data map of the CS11 hardware.
SCADA	Supervision Control And Data Acquisition.
Section	<i>Sections</i> combine the states of several zones and represent them 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.
Threshold Alarm Activation	This concept is related to HOW an alarm is triggered. The Threshold trigger occurs when an alarm is only triggered only when a device detects something beyond a certain quantity, for example when there is a high concentration of smoke (a cigarette wouldn't trigger the alarm, but a fire would). The other concept is the binary trigger (also called "logical TRUE or FALSE" signal), which means that if the detector senses the presence of something (for example, smoke or an intruder) it is triggered.
Zone	Derived from the term <i>Protection zone</i> . The zone evaluates the information of the affiliated elements and initiates an alarm, if required.

# 1 How to Use This Document

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Each CS11 AlgoRex<sup>®</sup> Object is listed in terms of OPC server representation with a brief explanation what it is, followed by a table detailing all possible states for that object and commands for those states.

The primary concepts that should be remembered when reading this document are:

## **Go Get the MK8000 OPC Interface Specification Manual**

*If you haven't read the MK8000 OPC Interface Specification Manual, this document won't make sense.* This document was written as a companion to the MK8000 OPC Interface Specification Manual containing explanations of concepts necessary to use this document, such as the significance of object states and commands, and what the 8-digit codes associated with each object represent.

## **“Quiet” Means Normal**

'Quiet' is the normal state of the object. It indicates that the object is functioning normally and there is no presence of danger (i.e. alarm).

## **One State Hides Another**

An object can be in more than one state at the same time, for example, Alarm and Anomaly. Only the object state with the highest priority can be seen at any given time so in this example, the object would be displayed as in “Alarm”.

## **The Lower the ID Number, the Higher the Priority**

All states are listed in the tables in descending order from highest to lowest priority.

## 2 CS11 OPC Object States

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### Types of Objects

CS11 AlgoRex<sup>®</sup> Objects represent parts of the central control unit(s) as well as external distributed devices devoted to fire detection.

The central control units include the general conditions of the fire supervision system, whereas the distributed device objects are organised in a 4-level hierarchical structure:

- **Areas:** Groups of sections, which can be controlled and managed as a whole.
- **Sections:** Groups of zones that belong to the same building, floor, room, etc. The *Section* contains collective information about the affiliated detection zones and reflects the states of those zones.
- **Zones:** Each zone represents one or more detector(s) (elements) that generate a unique latched alarm. That is, “acknowledge” and “reset” commands are required to clear the alarm. The *Zone* evaluates the alarm to verify whether the alarm is real or false based on the information supplied by the associated elements.
- **Elements:** Elements are individual detectors that can report a dynamic state but don't generate a latched alarm. The detection elements evaluate the information supplied by physical sensors and digital inputs, and transmit the results to the higher-ranking zones.

**Type 5 Object:** There is one additional category that is outside of this 4-level structure. This category is made up of hardware components and controllers.



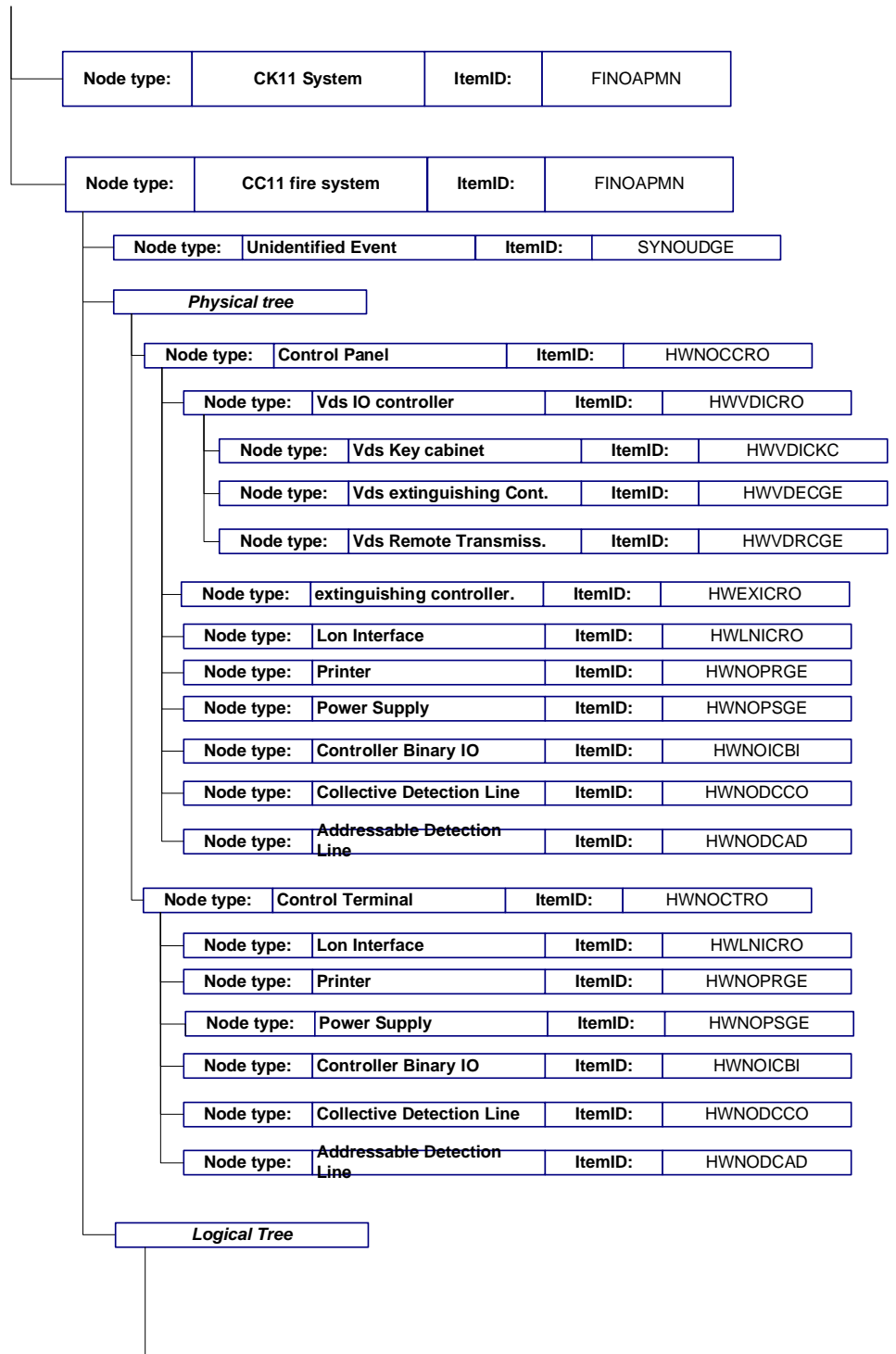


Fig. 1 CS11 Physical Tree Model

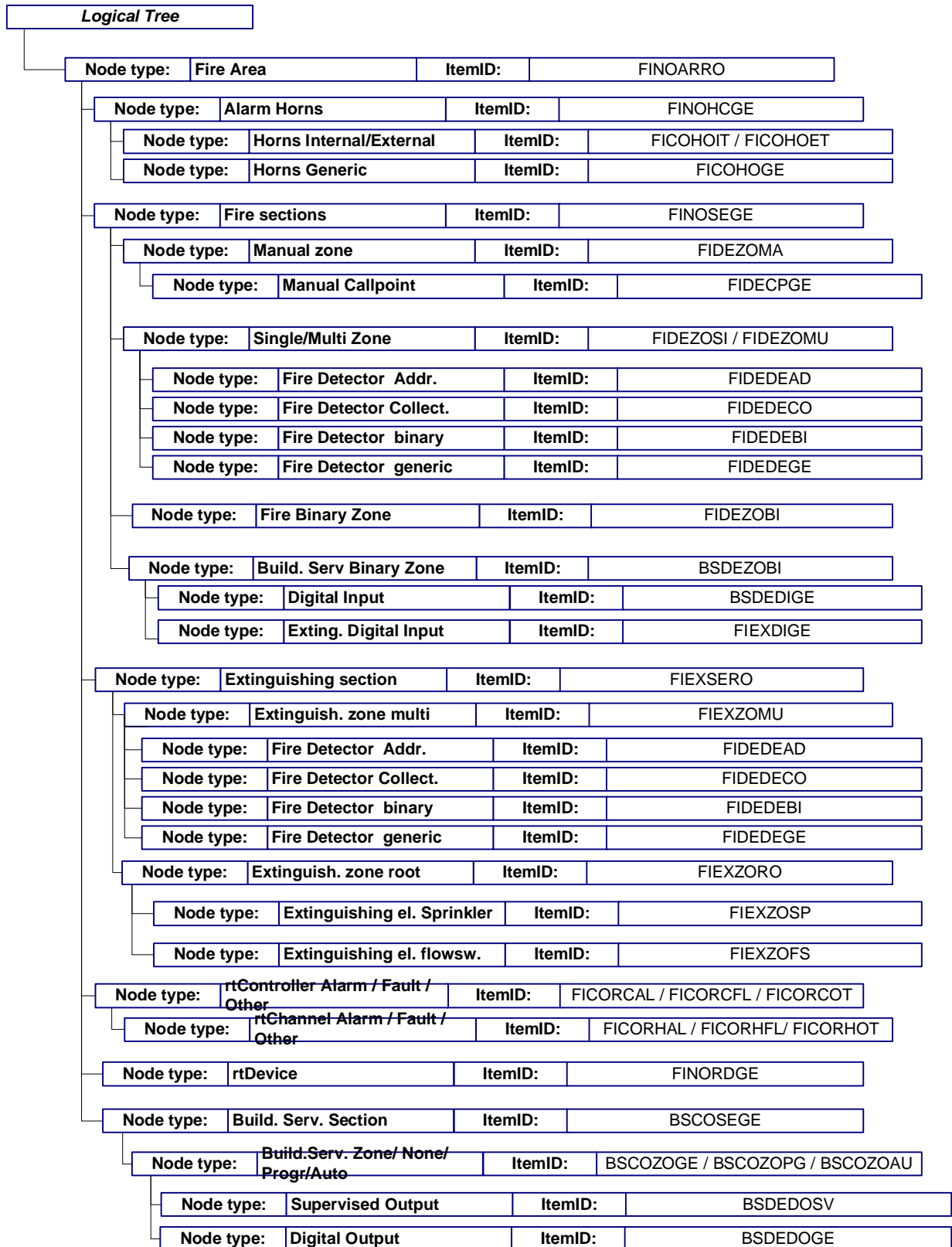


Fig. 2 CS11 Logical Tree Model

### Organisation of the Following Sections

Each CS11 Object is listed in terms of OPC server representation with a brief explanation of what it is, followed by a table detailing all possible states for that object and commands for those states.

## 2.1 Application - CK11 (FINOAPMN)

The *Application* object represents the events related to the entire CK11 communication gateway.

A **Fault** is caused when a problem is detected with the connection (Communication fault), with the power supply (Power Supply fault), or when the power supply has been switched to battery (Battery Operational Fault). An **Anomaly** is caused when the application is partially not reachable.

State	State ID No.	Command ID No.	Command Name
ALARM UNACK	500	1	Ack
		2048	Status Request
ALARM ACK	501	2048	Status Request
ALARM & FAULT UN-ACK	510	1	Ack
		2048	Status Request
ALARM & FAULT ACK	511	2048	Status Request
ALARM & FAULT UN-ACK	512	2	Reset
		2048	Status Request
QUIET	1000	2048	Status Request
ANOMALY ACK	1351	-	Status Request
NOT ALIGNED	1369	-	-
ALIGNMENT IN PROG..	1370	-	-
FAULT ACK	1999	-	-
FAULT UNACK	2000	1	Ack
		2048	Status Request
VITALITY FAULT	2051	-	-

## 2.2 Application - CC11 (FINOAPMN)

The *Application* object represents the events related to the entire CS11 detection system and the terminal that controls it.

The object can be put into **Fault** when a problem has been detected with a control unit connection (interrupted or broken). It is put into **Anomaly** when it is partially connected.

State	State ID No.	Command ID No.	Command Name
QUIET	1000	2048	Status Request
ANOMALY ACK	1351	2048	Status Request
NOT ALIGNED	1369	-	-
ALIGNMENT IN PROG..	1370	-	-
FAULT ACK	1999	-	-
VITALITY FAULT	2051	-	-

## 2.3 Fire Area (FINOARRO)

*Fire Area* represents the highest logical level in the CS11 logical structure. The area can be **disarmed**, i.e. set to operate in Manned (day) mode: when an alarm occurs external intervention squads are summoned only after predefined delay times (see definition of CAC), or systematic human action (pressing an manual call-point). However, when operating in Unmanned (night) mode, the external intervention squads are summoned immediately.

The area also reports a general **alarm state**, reflecting the alarm state of that part of the detection system.

The **pre alarm** state is the local alarm and the imminent general alarm.

The **anomaly** state is the partially off for the area.

The **faulty** state is the fault of the area.

State	State ID No.	Command ID No.	Command Name
ALARM UNACK	500	8	Disarm
		4	Arm
		1	Ack
ALARM UNRESET	502	2	Reset
		4	Arm
		8	Disarm
ALAM & FAULT UNACK	510	1	Ack
		4	Arm
		8	Disarm
ALAM & FAULT ACK	511	4	Arm
		8	Disarm
		2	Reset
ALAM & FAULT UNRESET	512	4	Arm
		8	Disarm
		2	Reset
PREALARM UNACK	800	8	Disarm
		4	Arm
		1	Ack
PREALARM UNRESET	802	2	Reset

State	State ID No.	Command ID No.	Command Name
		4	Arm
		8	Disarm
PREALAM & FAULT UNACK	810	1	Ack
		4	Arm
		8	Disarm
PREALAM & FAULT ACK	811	4	Arm
		8	Disarm
PREALAM & FAULT UNRESET	812	2	Reset
		4	Arm
		8	Disarm
QUIET	1000	8	Disarm
		2048	Status Request
DISARMED	1300	4	Arm
ANOMALY	1351	4	Arm
		8	Disarm
FAULT ACK	1999	4	Arm
		8	Disarm
FAULT UNACK	2000	1	Ack
		4	Arm
		8	Disarm

## 2.4 Unidentified Event (SYNOUDGE)

The "unidentified event" indicates the conditions that could not be associated with any known object in the current structure. This typically happens when the logical tree imported into the system configuration does not exactly match the local CS11 settings.

State	State ID No.	Command ID No.	Command Name
ALARM UNACK	500	-	-
TAMPER UNACK	900	-	-
QUIET	1000	-	-
DISARMED	1300	-	-
ANOMALY UNACK	1352	-	-
FAULT UNACK	2000	-	-

## 2.5 Fire Section (FINOSEGE)

The *Fire Section* represents the logical level below the Area in the CS11 structure and reports the following conditions of the affiliated detection zones:

- § **Alarm** - At least one affiliated zones is in alarm state;
- § **Disarmed** - The entire section is switched off;
- § **Test** - The entire section is switched in test mode;
- § **Fast reaction** (Revision/System test mode, i.e. higher sensitivity set in detection sensors) – Causes an **Anomaly**.

State	State ID No.	Command ID No.	Command Name
ALARM UNACK	500	1	Ack
		8	Disarm
		16	Test
ALARM UNRESET	502	2	Reset

State	State ID No.	Command ID No.	Command Name
		8	Disarm
		16	Test
QUIET	1000	8	Disarm
		16	Test
TEST	1100	64	End Test
ANOMALY ACK	1351	4	Arm
		8	Disarm
DISARMED	1300	4	Arm

## 2.6 Extinguishing Section (FIEXSERO)

The *Extinguishing Section* represents the logical level below the Area in the CS11 structure and can report the following conditions of the affiliated detection zones:

- § **Disarmed** - The entire section is switched off if its zones are in disarmed;
- § **Test** - The entire section is switched in test mode if all its zones are in test;
- § **Fast reaction** (Revision/System test mode) – Causes an **Anomaly**.

State	State ID No.	Command ID No.	Command Name
QUIET	1000	8	Disarm
		16	Test
TEST	1100	64	End Test
DISARMED	1300	4	Arm
ANOMALY ACK	1351	-	-

## 2.7 Extinguishing Zones Root (FIEXZORO)

The *Extinguishing Zones Root* contains multiple pieces of information about the extinguishing system, namely:

- § **Alarm** - Caused by manual activation of extinguisher, auto-alarm, or manual alarm;
- § **Active** - When the extinguisher has been activated;
- § **Manual** - When the Extinguishing works in Manual Mode;
- § **Blocked** - When the Extinguishing is Disabled.

State	State ID No.	Command ID No.	Command Name
ALARM UNACK	500	1	Ack
		64	Quiet
		512	Manual
		1024	Block
ALARM UNRESET	502	2	Reset
		64	Quiet
		512	Manual
		1024	Block
ALARM & FAULT UNACK	510	1	Ack
		64	Quiet
		512	Manual
		1024	Block
ALARM & FAULT ACK	511	64	Quiet
		512	Manual

State	State ID No.	Command ID No.	Command Name
		1024	Block
ALARM & FAULT UNRESET	512	2	Reset
		64	Quiet
		512	Manual
		1024	Block
ACTIVE	950	512	Manual
		1024	Block
QUIET	1000	512	Manual
		1024	Block
MANUAL ACK	1316	64	Quiet
		1024	Block
		64	Quiet
BLOCKED ACK	1329	64	Quiet
BLOCKED UNACK	1330	1	Ack
		64	Quiet
FAULT ACK	1999	64	Quiet
		512	Manual
		1024	Block
FAULT UNACK	2000	1	Ack
		64	Quiet
		512	Manual
		1024	Block

## 2.8 Building Services Section (BSCOSEGE)

The *Building Services Section* is a type of section made up of zones (and in turn elements) that monitor or control devices for general services in the supervised building. The section can be **disarmed**, i.e. the associated zones can be excluded.

State	State ID No.	Command ID No.	Command Name
QUIET	1000	8	Disarm
DISARMED	1300	4	Arm

## 2.9 Fire Zone manual (FIDEZOMA)

The *Fire Zone Manual* object represents a zone made up of manual call-points (emergency alarm buttons). The zone reports **alarm** states. It can also be set in **test** mode and can be **disarmed**. An **anomaly** is also reported if the zone is “Not ready”: i.e. if a pending alarm was detected when the zone was switched on.

State	State ID No.	Command ID No.	Command Name
ALARM UNACK	500	4	Arm
		8	Disarm
		1	Ack
ALARM UNRESET	502	4	Arm
		8	Disarm
		2	Reset
QUIET	1000	8	Disarm
		16	Test
TEST	1100	8	Disarm
		64	End test
DISARMED	1300	4	Arm
ANOMALY ACK	1351	8	Disarm
		4	Arm

## 2.10 Fire Zone single-logic (FIDEZOSI)

The *Single-Logic Fire Zone* object represents a zone made up of a single detection element. The zone reports **alarm** and **pre-alarm** states. It can also be set in **test** mode and can be **disarmed**. An **anomaly** is also reported if one of the following conditions is present:

- § *Renovation* mode: The affiliated detection devices respond more slowly than in the normal state. For example, when maintenance in an area will be temporarily generating a high level of dust;
- § *Revision/System test* mode: The affiliated detection devices respond more quickly than in the normal state;
- § *Not ready*: A pending alarm was detected when the zone was switched on.

State	State ID No.	Command ID No.	Command Name
ALARM UNACK	500	4	Arm
		8	Disarm
		1	Ack
ALARM UNRESET	502	4	Arm
		8	Disarm
		2	Reset
PREALARM UNACK	800	4	Arm
		8	Disarm
		1	Ack
PREALARM UNRESET	802	4	Arm
		8	Disarm
		2	Reset
QUIET	1000	8	Disarm
		16	Test



State	State ID No.	Command ID No.	Command Name
TEST	1100	8	Disarm
		64	End test
DISARMED	1300	4	Arm
ANOMALY ACK	1351	8	Disarm
		4	Arm

## 2.11 Fire Zone Multi-logic (FIDEZOMU)

In a *Multi-Logic Fire Zone* the alarm decision is based on the response of multiple detection elements affiliated with the zone. The conditions can be parameterised within the CC11. The zone reports **alarm** and **pre-alarm** states. It can also be set in **test** mode and can be **disarmed**. An **anomaly** is also reported if one of the following conditions is present:

- § *Renovation* mode: The affiliated detection devices respond more slowly than in the normal state. For example, when maintenance in an area will be temporarily generating a high level of dust;
- § *Revision/System test* mode: The affiliated detection devices respond more quickly than in the normal state;
- § *Not ready*: A pending alarm was detected when the zone was switched on.

State	State ID No.	Command ID No.	Command Name
ALARM UNACK	500	4	Arm
		8	Disarm
		1	Ack
ALARM UNRESET	502	4	Arm
		8	Disarm
		2	Reset
PREALARM UNACK	800	4	Arm
		8	Disarm
		1	Ack
PREALARM UNRESET	802	4	Arm
		8	Disarm
		2	Reset
QUIET	1000	8	Disarm
		16	Test
TEST	1100	8	Disarm
		64	End test
DISARMED	1300	4	Arm
ANOMALY ACK	1351	8	Disarm
		4	Arm

## 2.12 Extinguishing Zone Multi (FIEXZOMU)

In a *Multi-Logic Extinguishing Zone*, the alarm decision is based on the response of multiple detection elements affiliated with the zone. The basis upon which these decisions are made can be customised through the CC11. The zone reports **alarm** and **pre-alarm** and **general alarm** states. It can also be set in **test** mode and can be **disarmed**. An **anomaly** is also reported if one of the following conditions is present:

- § *Renovation* mode: The affiliated detection devices respond more slowly than in the normal state. For example, when maintenance in an area will be temporarily generating a high level of dust;
- § *Revision/System test* mode: The affiliated detection devices respond more quickly than in the normal state;
- § *Not ready*: A pending alarm was detected when the zone was switched on.

State	State ID No.	Command ID No.	Command Name
ALARM UNACK	500	4	Arm
		8	Disarm
		1	Ack
ALARM UNRESET	502	4	Arm
		8	Disarm
		2	Reset
PREALARM UNACK	800	4	Arm
		8	Disarm
		1	Ack
PREALARM UNRESET	802	4	Arm
		8	Disarm
		2	Reset
QUIET	1000	8	Disarm
		16	Test
TEST	1100	8	Disarm
		64	End test
DISARMED	1300	4	Arm
ANOMALY ACK	1351	8	Disarm
		4	Arm

## 2.13 Extinguishing Zone sprinkler (FIEXZOSP)

The *Extinguishing Sprinkler Zone* object represents a zone that processes binary information. Associated extinguisher activators are set in **alarm** state with a YES/NO binary alarm signal (see Binary and Threshold Alarm Activation definitions in the About This Document section). The zone can also be set in **test** mode and can be **disarmed**. An **anomaly** is also reported if the zone is "Not ready": i.e. if a pending alarm was detected when the zone was switched on.

State	State ID No.	Command ID No.	Command Name
ALARM UNACK	500	4	Arm
		8	Disarm
		1	Ack
ALARM UNRESET	502	4	Arm
		8	Disarm
		2	Reset

State	State ID No.	Command ID No.	Command Name
QUIET	1000	8	Disarm
		16	Test
TEST	1100	8	Disarm
		64	End test
DISARMED	1300	4	Arm
ANOMALY ACK	1351	8	Disarm
		4	Arm

## 2.14 Extinguishing Digital Input (FIEXDIGE)

*Digital input* objects represent generic digital input elements (e.g. contacts), **activated** by sensors that signal alarm states to the CC11. These elements can detect an internal **fault**. (HW fault, line short circuit, or interruption) and can be **disarmed**, i.e. excluded.

State	State ID No.	Command ID No.	Command Name
ACTIVE	950	8	Disarm
		4	Arm
QUIET	1000	8	Disarm
DISARMED	1300	4	Arm
FAULT ACK	1999	4	Arm
		8	Disarm
FAULT UNACK	2000	1	Ack
		4	Arm
		8	Disarm

## 2.15 Building Services Binary Zone (BSDEZOBI)

The *Building Services Binary Zone* uses a binary trigger rather than danger threshold level triggers. A “yes” signal (element active) from an affiliated detector is enough to cause the **alarm** state. The zone can also be set in **test** mode and can be **disarmed**. An **anomaly** is also reported if the zone is “Not ready”: i.e. if a pending alarm was detected when the zone was switched on.

State	State ID No.	Command ID No.	Command Name
ALARM UNACK	500	4	Arm
		8	Disarm
		1	Ack
ALARM UNRESET	502	4	Arm
		8	Disarm
		2	Reset
QUIET	1000	8	Disarm
		16	Test
TEST	1100	8	Disarm
		64	End test
DISARMED	1300	4	Arm
ANOMALY ACK	1351	8	Disarm
		4	Arm

## 2.16 Building Services Control Zone Generic (BSCOZOG)

This object is only a folder object and has no dynamic properties.

## 2.17 Building Services Control zone programmable (BSCOZOPG)

The *Building Services Control Zone* object represents a zone that generates (**activates**) a signal when it detects a state of danger. It evaluates whether a situation should be considered dangerous based on parameters that were configured into the zone. With programmable control zones, any combination of states within a CC11 control unit can be used for control purposes. To exclude its functions, the zone can be **disarmed**.

State	State ID No.	Command ID No.	Command Name
ACTIVE	950	4	Arm
		8	Disarm
		32	Active
QUIET	1000	8	Disarm
		32	Active
DISARMED	1300	4	Arm
FAULT ACK	1999	4	Arm
		8	Disarm
FAULT UNACK	2000	1	Ack
		4	Arm
		8	Disarm

## 2.18 Building Services Control zone automatic (BSCOZOAU)

The *Building Services Control Zone* object represents a zone that can **activate** output control reactions based on a pre-programmed evaluation logic of the states of affiliated digital detection elements. It is similar to a programmable control zone but has more limited customisation options. A **fault** can be reported for the zone when, due to technical problems, the correct functioning of the control function is not secure. To exclude its functions, the zone can be **disarmed**.

State	State ID No.	Command ID No.	Command Name
ACTIVE	950	4	Arm
		8	Disarm
		64	Quiet
QUIET	1000	8	Disarm
		4	Arm
DISARMED	1300	4	Arm
FAULT ACK	1999	4	Arm
		8	Disarm
FAULT UNACK	2000	4	Arm
		8	Disarm
		1	Ack

## 2.19 Fire detector call-point generic (FIDECPGE)

The *Fire Detector Call-point* element represents an alarm pushbutton for manual alarm activation (1502/DS11-I, 1503/DS11-C). This element can report **fault** conditions:

- § Line interruption, short circuit
- § HW trouble

And **anomaly** conditions:

- § Not ready: Switched on with pending alarm

The Fire Detector Call-point can be **disarmed**, i.e. it can be excluded. It can be put into **test** mode from the zone level.

State	State ID No.	Command ID No.	Command Name
ACTIVE	950	4	Arm
		8	Disarm
QUIET	1000	8	Disarm
TEST ACTIVE	1140	4	Arm
		8	Disarm
DISARMED	1300	4	Arm
ANOMALY ACK	1351	4	Arm
		8	Disarm
ANOMALY UNACK	1352	4	Arm
		8	Disarm
		1	Ack
FAULT ACK	1999	4	Arm
		8	Disarm
FAULT UNACK	2000	4	Arm
		8	Disarm
		1	Ack

## 2.20 Fire detector binary (FIDEDEBI)

The *Fire Detector Binary* element represents a fire detector that uses a simple on/off alarm logic. This element can also report **fault** conditions, namely:

- § Fatal fault (input failure, HW trouble)
- § Line short circuit or interruption

An **anomaly** (drift) condition is generated when the detector requires maintenance (e.g. for being cleaned).

The Fire Detector Binary can be **disarmed**, i.e. it can be excluded. It can be put into **test** mode from the zone level.

State	State ID No.	Command ID No.	Command Name
ACTIVE	950	4	Arm
		8	Disarm

State	State ID No.	Command ID No.	Command Name
QUIET	1000	8	Disarm
TEST ACTIVE	1140	4	Arm
		8	Disarm
DISARMED	1300	4	Arm
ANOMALY ACK	1351	4	Arm
		8	Disarm
ANOMALY UNACK	1352	4	Arm
		8	Disarm
		1	Ack
FAULT ACK	1999	4	Arm
		8	Disarm
FAULT UNACK	2000	4	Arm
		8	Disarm
		1	Ack

## 2.21 Fire detector generic (FIDEDEGE)

The *Fire Detector Generic* element represents a fire detector for automatic alarm detection. This element can report **fault** conditions:

- § Line interruption, short circuit
- § HW trouble
- § Wrong configuration (Impairment)

The Fire Detector Generic can be **disarmed**, i.e. it can be excluded. A **test** mode is possible and controlled at higher level (zone). Also, an **anomaly** (drift) condition is generated when the detector requires maintenance (e.g. for being cleaned).

State	State ID No.	Command ID No.	Command Name
ACTIVE	950	4	Arm
		8	Disarm
		64	Quiet
QUIET	1000	8	Disarm
		32	Active
TEST ACTIVE	1140	4	Arm
		8	Disarm
		64	Quiet
DISARMED	1300	4	Arm
ANOMALY ACK	1351	4	Arm
		8	Disarm
ANOMALY UNACK	1352	4	Arm
		8	Disarm
		1	Ack
FAULT ACK	1999	4	Arm
		8	Disarm
FAULT UNACK	2000	4	Arm
		8	Disarm
		1	Ack

## 2.22 Fire detector collective (FIDEDECO)

The *Fire Detector collective (1510-11-12/DS11-C)* element represents a detector of the series DS11-C for collective lines. This family of objects includes various detectors with different internal characteristics (pulse memory, delays), however these do not appear on OPC server object. This element can report **fault** conditions:

- § Line interruption, short circuit
- § HW trouble

The Fire Detector collective can be **disarmed**, i.e. it can be excluded. A **test** mode is possible and controlled from a higher level (zone). Also, an **anomaly** (drift) condition is generated when the detector requires maintenance (e.g. it needs to be cleaned).

State	State ID No.	Command ID No.	Command Name
ACTIVE	950	4	Arm
		8	Disarm
QUIET	1000	8	Disarm
TEST ACTIVE	1140	4	Arm
		8	Disarm
DISARMED	1300	4	Arm
ANOMALY ACK	1351	4	Arm
		8	Disarm
ANOMALY UNACK	1352	4	Arm
		8	Disarm
		1	Ack
FAULT ACK	1999	4	Arm
		8	Disarm
FAULT UNACK	2000	4	Arm
		8	Disarm
		1	Ack

## 2.23 Fire detector addressable (FIDEDEAD)

The *Fire Detector Generic* element represents a fire detector for automatic alarm detection and individual identification. This element can report **fault** conditions:

- § Line interruption, short circuit
- § HW trouble
- § Wrong configuration (Impairment)

The Fire Detector Generic can be **disarmed**, i.e. it can be excluded. A **test** mode is possible and controlled at higher level (zone). Also, an **anomaly** (drift) condition is generated when the detector requires maintenance (e.g. for being cleaned).

State	State ID No.	Command ID No.	Command Name
ACTIVE	950	4	Arm
		8	Disarm
QUIET	1000	8	Disarm
TEST ACTIVE	1140	4	Arm
		8	Disarm
DISARMED	1300	4	Arm

State	State ID No.	Command ID No.	Command Name
ANOMALY ACK	1351	4	Arm
		8	Disarm
ANOMALY UNACK	1352	4	Arm
		8	Disarm
		1	Ack
FAULT ACK	1999	4	Arm
		8	Disarm
FAULT UNACK	2000	4	Arm
		8	Disarm
		1	Ack

## 2.24 Internal Horns (FICOHOIT)

The *Internal Horn* element represents an internal audio output that receives its control **activation** commands directly from the higher-ranking AREA. Typically, the internal horn is activated simultaneously with the buzzer on the CT11.

These elements can detect an internal **fault** and can be **disarmed**, i.e. excluded, locally only.

State	State ID No.	Command ID No.	Command Name
ACTIVE	950	1	Ack
QUIET	1000		
DISARMED	1300		
FAULT ACK	1999		
FAULT UNACK	2000	1	Ack

## 2.25 External Horns (FICOHOET)

The *External Horn* object represents the output to external devices that its control **activation** 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.

These elements can detect an internal **fault** and can be **disarmed**, i.e. excluded.

**Note:** The control 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.

State	State ID No.	Command ID No.	Command Name
ACTIVE	950	-	-
QUIET	1000	32	Active
		8	Disarm
DISARMED	1300	4	Arm
FAULT ACK	1999		
FAULT UNACK	2000	1	Ack



## 2.26 RtController Alarm (FICORCAL)

---

The *RtController Alarm* (RT = Remote Transmission) object represents the state of the “Alarm Remote Transmission Delay” within the Area. If the Alarm Remote Transmission Delay is switched off (**disarmed**) while an alarm event with RT requirements is pending, the current monitoring times are bypassed and the remote transmission is activated immediately.

State	State ID No.	Command ID No.	Command Name
QUIET	1000		
DISARMED	1300		

## 2.27 Rt Device (FINORDGE)

---

The *Rt Device* (RT = Remote Transmission) object represents the state of the “Remote Transmission Device” associated to the Area. This element can detect internal **faults**.

State	State ID No.	Command ID No.	Command Name
QUIET	1000		
BLOCKED	1326	1	Ack
FAULT ACK	1999		
FAULT UNACK	2000	1	Ack

## 2.28 RtChannel alarm (FICORHAL)

---

The *RtChannel alarm* object represents a remote transmission output for alarms. Remote transmission channels receive their control commands directly from the higher-ranking AREA. Typically they are activated in accordance with the Cerberus Alarm Concept (CAC). That is, the alarm status is escalated when action is not taken (usually acknowledging or treating the alarm) within the allocated time period. The object can be **disarmed** to exclude it, so that control commands are not processed. A **fault** can also be reported when, for technical problems, the correct function of the element is not assured.

State	State ID No.	Command ID No.	Command Name
ACTIVE	950	-	
QUIET	1000		
DISARMED	1300		
FAULT ACK	1999		
FAULT UNACK	2000	1	Ack

## 2.29 RtChannel Fault (FICORHFL)

---

The *RtChannel fault* object represents a remote transmission output for faults. Remote transmission channels receive their control commands directly from the higher-ranking AREA. Typically they are activated in accordance with the Cerberus Alarm Concept (CAC). That is, the alarm status is escalated when action is not taken (usually acknowledging or treating the alarm) within the allocated time period. The object can be **dis-**

**armed** to exclude it, so that control commands are not processed. A **fault** can also be reported when, for technical problems, the correct function of the element is not secure.

State	State ID No.	Command ID No.	Command Name
ACTIVE	950	-	
QUIET	1000		
DISARMED	1300		
FAULT ACK	1999		
FAULT UNACK	2000	1	Ack

## 2.30 RtChannel Other (FICORHOT)

The *RtChannel Other* object represents a remote transmission output for other 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). That is, the alarm status is escalated when action is not taken (usually acknowledging or treating the alarm) within the allocated time period. The object can be **disarmed** to exclude it, so that control commands are not processed. A **fault** can also be reported when, for technical problems, the correct function of the element is not assured.

State	State ID No.	Command ID No.	Command Name
ACTIVE	950	-	
QUIET	1000		
DISARMED	1300		
FAULT ACK	1999		
FAULT UNACK	2000	1	Ack

## 2.31 Building Services Digital Input (BSDEDIGE)

*Digital input* elements represent generic digital inputs (e.g. contacts), **activated** by sensors for signalling alarm states to CC11. These elements can detect an internal **fault**. (HW fault, line short circuit or interruption) and can be **disarmed**, i.e. excluded.

State	State ID No.	Command ID No.	Command Name
ACTIVE	950	8	Disarm
		4	Arm
QUIET	1000	8	Disarm
DISARMED	1300	4	Arm
FAULT ACK	1999	4	Arm
		8	Disarm
FAULT UNACK	2000	1	Ack
		4	Arm
		8	Disarm

## 2.32 Building Services Digital Output supervised (BSDEDOSV)

*Digital output* represents output elements with feedback. They are **activated** to control complex external devices such as horns, door locks, etc. These elements have a feed-

back input, which is used to detect an unsuccessful activation (**anomaly**). The D.O. can be **disarmed**, i.e. it can be excluded.

State	State ID No.	Command ID No.	Command Name
ACTIVE	950	8	Disarm
		64	Quiet
QUIET	1000	8	Disarm
		32	Active
DISARMED	1300	4	Arm
		32	Active
ANOMALY ACK	1351	8	Disarm
		4	Arm
ANOMALY UNACK	1352	8	Disarm
		4	Arm
		1	Ack
FAULT ACK	1999	4	Arm
		8	Disarm
FAULT UNACK	2000	4	Arm
		8	Disarm
		1	Ack

## 2.33 Building Services Digital Output generic (BSDEDOGE)

*Digital output* objects represent output elements without feedback, **activated** to control simple external devices such as lamps etc. These elements do not have a feedback input, but can detect an internal **fault**. The D.O. can be **disarmed**, i.e. it can be excluded.

State	State ID No.	Command ID No.	Command Name
ACTIVE	950	4	Arm
		8	Disarm
QUIET	1000	8	Disarm
		32	Active
DISARMED	1300	4	Arm
		32	Active
FAULT ACK	1999		
FAULT UNACK	2000	1	Ack

## 2.34 Control Panel (HWNOCERO)

---

The *Control Panel* object reports alarms and faults that, for some technical reasons, cannot be addressed on the detection zones nor on detection lines. **Alarms** can be due to:

§ Emergency operation alarm: Alarm point cannot be detected

Instead, **faults** can be caused by:

§ Emergency operation monitoring defective

§ Bus fault (C-Bus)

§ Line fault (I-Bus)

§ Configuration error

State	State ID No.	Command ID No.	Command Name
ALARM UNACK	500	1	Ack
ALARM UNRESET	502	2	Reset
ALARM & FAULT UNACK	510	1	Ack
ALARM & FAULT ACK	511	-	
QUIET	1000	-	
FAULT ACK	1999	-	
FAULT UNACK	2000	1	Ack

## 2.35 Power supply (HWNOPSGE)

---

The *Power Supply* object reports the conditions determined by power supply monitoring logic, **faults** can be due to:

§ Power supply failure

§ Battery failure

§ End of battery autonomy

§ Module does not respond

§ Configuration error

State	State ID No.	Command ID No.	Command Name
QUIET	1000	-	
FAULT ACK	1999	-	-
FAULT UNACK	2000	1	Ack

## 2.36 Extinguishing Controller (HWEXICRO)

---

The *Extinguishing Controller* object represents an extinguishing control module that can report fault conditions in case of:

§ Processor failure

§ Configuration error

§ Failure of an extinguishing control

§ General fault

State	State ID No.	Command ID No.	Command Name
QUIET	1000	-	-

State	State ID No.	Command ID No.	Command Name
FAULT ACK	1999	-	-
FAULT UNACK	2000	1	Ack

## 2.37 Addressable detection line (HWNODCAD)

The *Addressable Detection Line* object reports alarms and faults that, for some technical reasons, cannot be addressed on the detection zones. **Alarms** can be due to:

- § Alarmed detector installed but not configured in a zone of the system.
- § Due to a fault, the alarmed detector element and zone cannot be identified.

Instead, **faults** can be caused by:

- § Processor failure
- § Emergency operation monitoring defective
- § Line faulty
- § Line does not respond
- § Configuration error
- § Ground fault

State	State ID No.	Command ID No.	Command Name
ALARM UNACK	500	1	Ack
ALARM UNRESET	502	2	Reset
ALARM & FAULT UNACK	510	1	Ack
ALARM & FAULT ACK	511	-	
QUIET	1000	-	
FAULT ACK	1999	-	
FAULT UNACK	2000	1	Ack

## 2.38 Collective detection line(HWNODCCO)

The *Collective Detection Line* object reports faults on a collective line.

The **faults** can be caused by:

- § Processor failure
- § Emergency operation monitoring defective
- § Line faulty
- § Line does not respond
- § Configuration error

State	State ID No.	Command ID No.	Command Name
QUIET	1000	-	
FAULT ACK	1999	-	
FAULT UNACK	2000	1	Ack

## 2.39 Vds I/O Controller (HWVDICRO)

The *VDS I/O controller* object covers the fault states of the interface and Fire Brigade panel approved by VDS norms. The **faults** can be due to:

- § Processor failure
- § Emergency operation monitoring defective

- § Configuration error
- § FBF panel faulty
- § FBF power supply faulty

State	State ID No.	Command ID No.	Command Name
QUIET	1000	-	-
FAULT ACK	1999	-	-
FAULT UNACK	2000	1	Ack

## 2.40 Vds Remote Transmission (HWVDRCGE)

The *VDS Remote Transmission* object covers the states of the remote transmission device approved by VDS norms. The object reports **Active** and **Disarmed** states. Instead, **faults** can be due to:

- § Processor failure
- § Line fault
- § Activation error
- § Deactivation error

State	State ID No.	Command ID No.	Command Name
ACTIVE	950	-	-
QUIET	1000	-	-
DISARMED	1300	1	Ack
FAULT ACK	1999	-	-
FAULT UNACK	2000	1	Ack

## 2.41 Vds Extinguishing Controller (HWVDECGE)

The *VDS Remote Transmission* object covers the states of the extinguishing interface approved by VDS norms. The object reports **Alarm** and **Faults**, which can be due to:

- § Processor failure
- § Line fault
- § Activation error
- § Deactivation error

Also, the controller can be **disarmed**, i.e. excluded

State	State ID No.	Command ID No.	Command Name
ALARM UNACK	500	1	Ack
ALARM UNRESET	502	2	Reset
ALARM & FAULT UNACK	510	1	Ack
ALARM & FAULT ACK	511	-	-
QUIET	1000	-	-
DISARMED	1300	1	Ack
FAULT ACK	1999		
FAULT UNACK	2000	1	Ack

## 2.42 Vds Key Cabinet (HWVDICKC)

---

The *VDS Remote Transmission* object reports the conditions of a Fire Brigade key box (a protected cabinet reserved for the Fire Brigade, which is a hardware interface required for VDS approval.) The object reports **Tamper** and **Faults**, which can be due to:

- § Processor failure
- § Other faults

Also, **anomaly** is reported in case of:

- § Missing key
- § Box manually unlocked
- § Box automatically unlocked due to a fire alarm

When the box is open the state is reported as **active**.

State	State ID No.	Command ID No.	Command Name
TAMPER UNACK	800	1	Ack
TAMPER UNRESET	802	2	Reset
ACTIVE	950	-	-
QUIET	1000		
ANOMALY ACK	1351		
ANOMALY UNACK	1352	1	Ack
FAULT ACK	1999		
FAULT UNACK	2000	1	Ack

## 2.43 Fire Brigade Control (HWNOICPM)

---

State	State ID No.	Command ID No.	Command Name
QUIET	1000	-	-
FAULT ACK	1999	-	-
FAULT UNACK	2000	1	Ack

## 2.44 Controller Binary I/O (HWNOICBI)

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State	State ID No.	Command ID No.	Command Name
QUIET	1000	-	-
FAULT ACK	1999	-	-
FAULT UNACK	2000	1	Ack

## 2.45 Lon Interface (HWLNICRO)

---

The *LON interface* object reports faults on the LON bus.

The **fault** can be caused by:

- § No connection to LON interface
- § One or more nodes faulty
- § General fault

State	State ID No.	Command ID No.	Command Name
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State	State ID No.	Command ID No.	Command Name
QUIET	1000	-	
FAULT ACK	1999	-	
FAULT UNACK	2000	1	Ack

## 2.46 Control Terminal (HWNOCTRO)

The *LON interface* object reports faults on the LON bus.

The **fault** can be caused by:

- § No connection to LON interface
- § One or more nodes faulty
- § General fault

State	State ID No.	Command ID No.	Command Name
QUIET	1000	-	
FAULT ACK	1999	-	
FAULT UNACK	2000	1	Ack

## 2.47 Control Panel Mirror (HWNOCCMI)

The *Control Panel Mirror* object reports **fault** conditions concerning another control panel, which is connected over the local bus (C-Bus).

State	State ID No.	Command ID No.	Command Name
QUIET	1000		
FAULT ACK	1999		
FAULT UNACK	2000	1	Ack

## 2.48 Printer (HWNOPRGE)

The *Control Panel Mirror* reports **disarm** and **fault** conditions with the serial printer connected to the CC11

The **fault** can be caused by:

- § XOFF or DTR timeout
- § End of paper
- § Printing mechanism blocked

State	State ID No.	Command ID No.	Command Name
QUIET	1000		
DISARMED	1300		
FAULT ACK	1999		
FAULT UNACK	2000	1	Ack





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