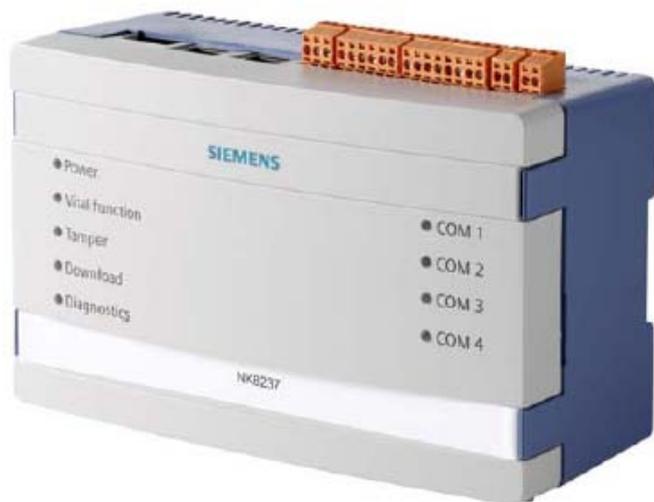


SIEMENS



NK8237 IEC 60870-5-104 Gateway for Sinteso™ and Cerberus® PRO Fire Detection Systems

Interface Specifications

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About this document

Purpose

This document specifies a subset of the IEC60780-5-104 communication protocols used to transfer data between a master controlling station and Sinteso and Cerberus PRO systems.

The document provides complete information necessary to develop third-party communication softwares capable of communicating with Sinteso and Cerberus PRO control panels.

Scope

This document applies to IEC 60870-5-104 Interface gateway **NK8237 MP4.81**.

Target Audience

System Integrators-System Engineers This manual addresses the communication system engineer or system integrator responsible for pre-engineering and engineering for communication setup in a Sinteso/Cerberus PRO Fire Detection System.

The system engineer or system integrator must have a basic knowledge of communication in protection and control systems and thorough knowledge of the specific communication protocol

Documentation resource information

The *DMS8000 Documentation Resource Information and Glossary Guide* assembles important information regarding documentation resources. This document contains the following:

- Comprehensive definitions of the target audiences for Siemens FS DMS documents
- Training program information including the Siemens intranet link
- A complete list of all available DMS8000 documents
- Instructions for how to obtain a document via the Siemens intranet using the Siemens Asset Portal
- A map of relevant documents for each target audience group
- Customer Support links & resources
- A glossary containing definitions of all terms and acronyms used in DMS8000 documentation

To access the *DMS8000 Documentation Resource Information and Glossary Guide* (document no. A6V10089056), go to the link and follow the document search instructions below:

<https://step.bt.siemens.com/portal/StandardAssetPortal#contextID=Headquarters&workspaceID=Approved&screen=homepage>

1. In the Simple Search column on the left, set:
 - Search Text: Enter the document number to search for (for example *A6V10089056*) or type part of the document name.
 - Asset Type: **All**

2. Click **Search** to start.
3. In the resulting area on the right, click on **Contents** link to show the list of search results.
4. In the list, select one or more documents and click the **Download Assets** icon.
5. After the download preparation completes (**Background Process ...**), click **Download** and follow the instructions of your browser.

For more information such as Siemens news and announcements, visit the STEP Web portal at:

<https://workspace.sbt.siemens.com/content/00001123/default.aspx>

Operational and safety regulations



Before groups of persons begin work on the system, they must have read and understood the **Safety Regulation** [→ 9] section in this manual.

Liability disclaimer for damage or injuries

Before products are delivered, they are tested to ensure they function correctly when used properly. Siemens disclaims all liability for damage or injuries caused by the incorrect application of the instructions, or the disregard of danger advisories. This disclaimer applies in particular to personal injuries or damage caused by:

- Improper and/or incorrect use.
- Disregard of safety instructions in the documentation or on the product.
- Poor maintenance or a lack of maintenance.

We have checked the contents of this manual for agreement with the hardware and software described. Since deviations cannot be precluded entirely, we cannot guarantee full agreement. However, the data in this manual are reviewed regularly and any necessary corrections are included in subsequent editions. Suggestions for improvement are welcome.

Copyrights and registered trademarks

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Documentation Conventions

The following table lists conventions to help you use this document in a quick and efficient manner.

Convention	Examples
Numbered Lists (1, 2, 3...) indicate a procedure with sequential steps.	<ol style="list-style-type: none"> 1. Turn OFF power to the field panel. 2. Disconnect the power cord. 3. Open the cabinet.
One-step procedures are indicated by a bullet point.	<ul style="list-style-type: none"> ● Expand the Event List.

<p>Conditions that you must complete or must be met before beginning a procedure are designated with a ▷.</p> <p>Results, after completing a step or at the end of the entire procedure, are designated with a ⇒.</p>	<p>▷ The report you want to print is open.</p> <p>1. Click the Print icon .</p> <p>⇒ The Print dialog box appears.</p> <p>2. Select the printer and click Print.</p> <p>⇒ The print confirmation appears.</p>
<p>Bold font in a procedure indicates something you should select or type.</p>	<p>Type F for Field panels.</p> <p>Click OK to save changes and close the dialog box.</p>
<p>Menu paths are indicated in bold.</p>	<p>Select File > Text, Copy > Group, which means from the File menu, then select Text, Copy and finally Group.</p>
<p>Error and system messages are displayed in Courier New font.</p>	<p>The message <i>Definition successfully renamed</i> displays in the status bar.</p>
<p><i>Italics</i> are used to emphasize a term.</p>	<p>The Open Processor continuously executes a user-defined set of instructions called the <i>control program</i>.</p>
<p></p>	<p>This symbol signifies a Note. Notes provide additional information or helpful hints.</p>
<p> Caution</p>	<p>This is a Caution message and indicates that minor or moderate injury or property damage may occur if a procedure is not followed.</p>
<p> Warning</p>	<p>This is a Warning message and indicates that a serious injury or a severe equipment and property damage may occur if a procedure is not followed.</p>
<p>Cross references to other information in printed material are indicated with an arrow and the page number, enclosed in brackets: [→92]</p>	<p>For more information on creating flowcharts, see Flowcharts [→92].</p>

Modification index

Modification index.		
Version	Date	Notes
A6V10741020_a_en	09.2016	<p>Corresponds with MP4.81</p> <ul style="list-style-type: none"> - Security Disclaimer - New WT_Section Active state - New FS20 MP6.0 Objects in WT_Section, WT_Ctrl, WT_LogChan, and WT_HWObj - New WT_NK8237Point Fault state - New NK8237 Clock object
A6V10741020_a_en	03.2016	Corresponds with MP4.80



1. Security disclaimer

Products, solutions and services from Siemens include security functions to ensure the secure operation of building automation and control, fire safety, security management, and physical security systems. The security functions on these products, solutions and services are important components of a comprehensive security concept.

Drafting, implementing and managing a comprehensive and up-to-date security concept, customized to individual needs, is nevertheless necessary, and may result in additional plant- or site-specific preventive measures to ensure secure operation of your site regarding building automation and control, fire safety, security management, and physical security. These measures may include, for example, separating networks, physically protecting system components, user training, multi-level defensive measures, etc. For additional information on security as part of building technology and our product, solution and service offerings, please contact your Siemens sales representative or project department. We strongly recommend to always comply with our security advisories on the latest security threats, patches and other related measures.

<http://www.siemens.com/cert/en/cert-security-advisories.htm>



2. Safety regulations

This section describes the danger levels and the relevant safety regulations applicable to the use of the products described in this manual. Please read the following work instructions as well as the preceding section *About this document* thoroughly before beginning any work.

2.1 Country-specific standards

Siemens products are developed and produced in compliance with the relevant international and European safety standards. Should additional country-specific, and/or local safety standards or regulations concerning project planning, installation, and/or operation of the product(s) apply, then these standards and/or regulations must also be taken into account, in addition to the safety regulations mentioned in the product documentation.

2.2 Assembly and installation

The NK8000 units and NE8000 cabinets should always be installed in a clean and stable environment; see the specific requirements given in the Technical Data section of the specific NK823x datasheets.

In particular, keep units and cabinets away from the following:

- High levels of dust
- High temperature and humidity
- Locations where it might become wet
- Vibration and impact

Also, abide by the safety regulations of the connected devices.

2.3 Commissioning and testing

- Activate security-, fire- and third party systems or devices *only* in the presence of the person responsible.
- Abide by the safety regulations of the connected sub-systems when working on management stations. This especially applies when switching-off system components.
- Inform people before the testing of alarm devices; take the possibility of panic reactions into account.
- Inform the alarm and fault receiving stations connected to the system before carrying out any tests.

2.4 Disposal and recycling

The NK8000 units include electrical and electronic components and must not be disposed of as domestic waste. **Current local legislation must be observed.**

These devices have been manufactured as much as possible from materials that can be recycled or disposed of in a manner that is not environmentally damaging. However, they contain parts (batteries) that require disposal in a controlled waste stream according to local environmental standards and/or regulations.

2.5 Modifications to system design and products



Modifications to a system or to individual products may cause faults or malfunctioning.

Please request written approval from Siemens Building Technologies, FS-DMS, and the relevant authorities concerning intended system modifications and system extensions.

3. IEC Interface Specifications

The IEC NK8237 gateway enables IEC server stations to access FS20/FS720 fire control units for acquiring status information.

The gateway also allows for control commands to be transmitted from the IEC client station to the fire system. A specific agreement with Siemens is required for this type of functions.

This document deals with the application-level communication and describes the addresses maps used for implementing it. For more information about the physical protocols involved and the related configuration procedures, please refer to the *NK8237 Installation, Configuration, and Commissioning Guide* (document no. A6V10854379).

3.1 IEC 60870-5-104 Gateway

3.1.1 IEC Connections

One IEC protocol can be handled, via TCP/IP connection:

- TCP/IP connection: IEC server for maximum four (4) TCP/IP client connections. Separate Ethernet ports can be used for BACnet/IP and IEC TCP/IP for maximum protection of the safety network.
- Only one connection at time from same IP host source

IEC 60870-5-104 hosts and system limits per each connected NK8237 unit.	
IEC hosts	Detectors and units per NK8237
4 IEC Master host	<ul style="list-style-type: none"> ● Max 10,000 detectors ● 16 FS20 / FS720 units

3.1.2 IEC 60870-5-104 Functions

The gateway supports the following IEC telegrams:

Identifier Type	Id Value	Object Type Description	Applicable table types	Notes
START_DT		Start transmission	Protocol	
TEST_FR		Polling	Protocol	
M_SP_NA_1	1	Single point information	All objects	
M_BO_NA_1	7	Bit string of 32 bits	All objects	
M_SP_TB_1	30	Single point information with time tagCP56Time2a	All objects	
M_BO_TB_1	33	Bit string of 32 bits with time tagCP56Time2a	All objects	
M_IT_TB_1	37	Integrated totals with time tag CP56Time2a	All objects	
C_SC_NA_1	45	Single command	ACK /RESET Synthesis	
C_DC_NA_1	46	Double command	ACK /RESET Synthesis	

Identifier Type	Id Value	Object Type Description	Applicable table types	Notes
C_BO_NA_1	51	Bit string 32 bits	ACK /RESET Synthesis	
C_SC_TA_1	58	Single command with time tag CP56Time2a	ACK /RESET Synthesis	
C_BO_TA_1	64	Bit string 32 bit with time tag CP56Time2a	ACK /RESET Synthesis	
C_IC_NA_1	100	General Alignment	Protocol	
C_CI_NA_1	101	Counter Interrogation	Protocol	
C_CS_NA_1	103	Clock sync. command	Time	

3.2 IEC 60870-5-104 Data Model

According to the IEC protocol specifications, the application-level communication between *IEC devices* occurs via memory tables representing the IEC *information value*. In fact, IEC functions operate on values (ASDU1, ASDU2, IOA1, IOA2 and IOA3) to provide monitor and I/O control.

The gateway is capable of supporting an *Input values Map* providing a process image of the fire system status for the IEC master station, which periodically acquires and transmits the relevant conditions. Control actions can also be initiated by the IEC client stations by sending appropriate values in specific *command telegram*. This results in command the messages to be transmitted to the fire system.

3.2.1 Model Configuration Workflow

The detailed definition of the addresses map implementing the IEC data model occurs at configuration time. The Composer tool can import the *FS20/ST720 metafile* (the object list) and create the addresses map that represents the fire objects in a simplified set of types as described in the Addresses Map [→ 15] section.

The addresses map can be directly applied or further customized to adapt the addressing scheme to your specific application. Some modifications to the map can be done in the Composer configuration tool, including the tables base addresses and individual offsets. In addition, any information of the map can be exported into a *CSV file*, then externally customized, and finally re-imported to the Composer environment.



Tip: Although various customizations are possible in the Composer tool, detailed modifications to the offset addresses can be better carried out using a spreadsheet application (for example, Microsoft Excel) on the exported CSV file.

Once finalized, the CSV file can be used for integrating the model information in the IEC master/client station, and the corresponding addresses map downloaded to the NK8237 unit.



Note: All addressing starts with offset 0.

3.2.1.1 Customizing IEC Maps

The following describes the overall map customization procedure.

1. Start the Composer tool and open the IEC gateway project.
 - ⇒ The project tree displays in the Composer environment.
2. In the **IEC Master station** node, select the **Host** tab and modify the **IEC Base Address** values as needed. Make sure to define a consistent address scheme and avoid any conflicts.
3. In the **IEC station** node, launch the **Node Commands > Export in CSV** command and follow the instructions.
 - ⇒ A CSV file is created.
4. Edit the CSV file (for example, using Microsoft Excel).
 - You can modify the **IEC ASDU1, ASDU2, IOA1, IOA2, IOA3, TYPE, OFFLINE value** of any object.
5. When the CSV is ready, launch the import procedure on the same node used above for the export.
 - ⇒ The new map is available in Composer.
6. Download the configuration to the NK8237 gateway unit.



Note: When modifying the address values, make sure to define a consistent mapping, and avoid any address conflicts.



Note: The export command also generates a TXT file containing information about the supported IEC functions.

For a detailed description of the configuration process, please refer to the *NK8237 Installation, Configuration, and Commissioning Guide* (document no. A6V10854379).

3.2.1.2 CSV Export File Structure

The CSV export file can be created in Composer using the node command for the IEC master/client node. It contains the entire set of objects mapped in IEC addresses to represent the fire system.

The CSV file can be used for:

- Modifying the address values and (re)organize the data memory to optimize the IEC client treatment.
- Feeding the fire system configuration into the IEC client configuration tool.

The following fields (columns) are present in the CSV file:

SubsystemId

Identifier of the subsystem in the Composer project, and used during file re-import. It cannot be modified.

NodeId

Identifier of the node in the Composer project, and used during file re-import. It cannot be modified.



⚠ WARNING

Composer subsystem and node IDs are used during the re-import to identify the object positions. Any modification to those fields in the imported file are likely to cause the system to fail.

FieldDevice

Description text of the control unit. Modifications to this field are ignored in the re-import.

ParentDescription

Description text of the parent object. Modifications to this field are ignored in the re-import.

Description

Description text of the object. Modifications to this field are ignored in the re-import.

TechnicalText

Technical text of the object in the Composer project. Modifications to this field are ignored in the re-import.

ObjectName

Unique technical tag of the object. It cannot be modified.

Object Table

Name of the table in the IEC data representation (see FS2xxx addresses Map [→ 15]). It cannot be modified.

Object BaseAddress

Starting address of the IEC associated to the object. Modifications to this field are ignored in the re-import. However, note that the base addresses can be modified in the Composer configuration.

Object Address

Individual object address in the IEC set associated to the object typology (zones, area, and so on). Modifications to this field are ignored in the re-import.

Object Unique Address

Unique object address in IEC object addresses map set. Modifications to this field are ignored in the re-import. This field is the identification value to determine the IEC ASDU and IOAC individual values.



ASDU1

First IEC address value. During the export it takes the NK8237 configuration value. This field can be modified in the CSV file and it will be changed after the CSV re-import.

ASDU2

Second IEC address value. During the export it takes the NK8237 configuration value. This field can be modified in CSV file and it will be changed after the CSV re-import.

IOA1

First IEC IOA address value. This field can be modified in the CSV file and it will be changed after the CSV re-import.

IOA2

Second IEC IOA address value. This field can be modified in the CSV file and it will be changed after the CSV re-import.

IOA3

This is the third IEC IOA address value. This field can be modified on CSV file and it will be changed after CSV reimport

TYPE

IEC typeid value.

This field can be modified in the CSV file and it will be changed after the CSV re-import.

(Typ0 1, 30, or 37 (default))

OFFLINE

When set to value 1, the object is disabled, no events are generated for this object, and no commands are accepted for this object.

This field can be modified in the CSV file and it will be changed after the CSV re-import.



For each object, the current IEC object address is determined by the sum of **Object BaseAddress** and **Object Address (Object Unique Address)**.

3.2.2 FS2xxx Address Map

Data Representation

The NK8237 IEC gateway can support multiple fire detection panels or terminals (FC2xxx and FT2xxx). Each panel, terminal and gateway is represented as a virtual IEC device with its own IEC Panel Address and a complete address map. The map includes a number of sub-maps that represent the fire units and a general table for the gateway itself.

Fire Control Unit Representation

In the IEC data representation, *each panel is mapped as a separate IEC device with an individual address*. The device address is defined at configuration time.

A dedicated address sub-map is used for each panel, including two types of tables. Namely:

- **Summary tables**

- One address describing the overall panel conditions in one byte (bit-oriented).

- **Status tables**

5-byte address (ASDU1, ASDU2, IOA1, IOA2, IOA3) reporting the condition of all mapped objects.

One byte is used to define object status value.

The status tables cover the entire set of supported objects, grouped by general categories. A specific status table is dedicated to notifications coming from objects not included in the configuration. Namely:

- Areas
- Sections
- Detection zones
- Detection elements (logical channels)
- Controls
- Control elements (control channels)
- Hardware objects
- Unidentified event (for objects not included in the configuration)

Gateway Unit Representation

A dedicated information sub-map is used for the NK8237 unit, including one status table.

- **Status table**

Address reporting the conditions of the gateway. One byte is used to define object status value.

The gateway table includes the following:

- NK8237 Points
- Power Supply

3.2.2.1 Summary Table (Data Value)

The Summary table includes one address information.

The synthesis object is used to send acknowledge and reset command to the control panel.

FC20 synthesis

FC20 Syn (default base address: 1000)

3.2.2.2 Status Tables

The status tables include an input address per object. The number of tables depends on the specific systems whose object list is defined at configuration time. For example, 8 area addresses corresponding to 8 areas of a given fire system.

The objects are represented by a value, which is a combination of the mode (bit 0-3) and current status (bit 4-7) of the object.

Example for an Area in Day mode and quiet status: x05, decimal 05

Example for a Zone in mode On and in status Alarm: xF0, decimal 240

Example for an Element in mode On and in status Fault: xD0, decimal 208

The list of object types includes:

Area

Area (Input address, default base address: 6500)

Bit 4-7	Bit 0-3	Information	Notes
	x0	Normal	Normal status (quiet)
	x1	Non-default mode	Not used
	x4	WalkTest ¹⁾	Walktest active
	x5	Manned	Set in day (attended) mode
	x6	Test ¹⁾	Set in test mode
	x7	Off ¹⁾	Excluded
x8		Non-default value ¹⁾	Abnormal condition such as alarm output(s) disabled or other states resulting in a reduced safety

1) Available only for versions up to MP4.0.

Section

Section (Input addresses, default base address: 6100)

Bit 4-7	Bit 0-3	Information	Notes
	x0	Normal	Normal status (quiet)
	x4	WalkTest	Walk test active, all zones in Walk test
	x6	Test	All zones in test mode
	x7	Off	All zones excluded
x8		Non-default value	Abnormal condition resulting in a reduced safety, for example, if alarming is excluded while keeping the fault supervision on or all zones in Alarm verification are off. Note that manual zones cannot be in this state, so that it is intended that a section without manual zones is selected.
xF		Active	Any of the section's zones has a fire alarm ¹⁾

- 1) Available for FS20 from MP6.0, when *BACnet alarm notification in section* is enabled in the FS20 configuration.



Detection Zone

Zone (Input addresses, default base address: 1500)

Bit 7-4	Bit 0-3	Information	Notes
	x0	Normal	Normal status (quiet)
	x1	Non-default mode	Default range for possible abnormal mode
	x4	WalkTest	Walktest active
	x6	Test	Set in test mode
	x7	Off	Excluded
x8		Non-default value	Abnormal condition such as zone not ready or other states resulting in a reduced safety
xE		Pre-alarm	Pre-alarmed *
xF		Alarm	Alarmed *

* If the Channel Delegation option is configured, the Pre-alarm and Alarm events are on the element level (not the Zone level).

Detection element (logical channel)

LogCh (Input addresses, default base address: 2500)

Bit 4-7	Bit 0-3	Information	Notes
	x0	Normal	Normal status (quiet)
	x1	Non-default mode	Default range for possible abnormal mode
	x6	Test	Set in test mode
	x7	Off	Excluded
x8		Non-default value	Abnormal condition resulting in a reduced safety
xB		Test active	Activated for test
xD		Fault	Faulty
xE		Prealarm	Pre-alarmed
xF		Active / Alarm	Activated / Alarmed

Control

Ctrl (Input addresses, default base address: 3500)

Bit 7-4	Bit 0-3	Information	Notes
	x0	Normal	Normal status (quiet)
	x1	Non-default mode	Default range for possible abnormal mode
	x6	Test	Set in test mode
	x7	Off / Temporary off	Excluded, Excluded temporarily
x8		Non-default value	Abnormal condition such as drift state (maintenance required) or other anomalies resulting in a reduced safety
xB		Test active	Activated for test
xC		Not ready	Not ready to switch on, for example, if a previous activation is somehow still affecting the detection
xD		Fault	Faulty
xF		Active	Activated

Control element (control channel)

CtrlChan (Input addresses, default base address: 4800)

Bit 4-7	Bit 0-3	Information	Notes
	x0	Normal	Normal status (quiet)
	x1	Non-default mode	Default range for possible abnormal mode
	x6	Test	Set in test mode
	x7	Off	Excluded
x8		Non-default value	Abnormal condition resulting in a reduced safety
xB		Test active	Activated for test
xD		Fault	Faulty
xF		Alarm	Activated / Alarmed

Hardware object

HWObj (Input addresses, default base address: 6601)

Bit 4-7	Bit 0-3	Information	Notes
	x0	Normal	Normal status (quiet)
	x1	Non-default mode	Default range for possible abnormal mode
	x7	Off	Excluded
x8		Non-default value	Abnormal condition resulting in a reduced safety
xD		Fault	Faulty
xF		Alarm	Activated / Alarmed

Power Supply

PowerSupply (Input addresses, default base address: 6600)

Bit 4-7	Bit 0-3	Information	Notes
	x0	Normal	Normal status (quiet)
	x1	Non-default mode	Default range for possible abnormal mode
xA		Emergency Power	Due to missing or faulty mains supply, the FS20/FS720 control panel is operating in battery mode.
xD		Fault	Troubles with the power supply: mains or battery failure

Unidentified Event

Unidentified (Input addresses, default base address: 7000)

Bit 4-7	Bit 0-3	Information	Notes
	x0	Normal	Normal status (quiet)
x8		Non-default value	Abnormal condition coming from an object not included in the configuration

3.2.2.3 Command Tables

The command tables enable the IEC master to issue control commands to the fire units. The list of command tables includes:

Global panel acknowledgement and reset

FC20 Syn (default base address: 1000)

State	Command (dec)	New state after a successful command execution
Ack required	12	Panel acknowledged
Reset required	13	Panel reset

Each command can acknowledge and reset all alarmed or faulted objects in the FS20 control panel.

Area manned/unmanned: set day or night mode (basic command)

Area (default base address: 6500)

State	Command (dec)	New state after a successful command execution
Unmanned	14	Unmanned (night mode)
Manned	15	Manned (day mode)

Detection zone on/off: include/exclude the zone (basic command)

Zone (default base address: 1500)

State	Command (dec)	New state after a successful command execution
Off	17	Off (excluded)
On	16	On (included)

Detection element (logical channel) on/off: include/exclude the detector (basic command)

LogChan (default base address: 2500)

State	Command (dec)	New state after a successful command execution
Off	17	Off (excluded)
On	16	On (included)

NOTICE! The Basic commands described above are not fully compliant with the IEC standard, and their use must be first agreed with the customer.

3.2.2.4 Example of Addresses Map

The following describes an example of an NK8237 addresses map as it is presented in the Composer configuration tool. In the case of panel map, the default addresses are listed, which can be customized in the Composer configuration.

Field Device	ASDU1	ASDU2	IOA1
NK8237	50	1	1
FC20 Panel 1	50	1	2
FC20 Panel 2	50	1	3

Field Devices: example including two FC20 fire panels

FC20 Panel 1	Object Base Address	Size
FC20 Syn	1000	0
Zone	1500	3
LogChan	2500	4
Ctrl	3500	5
Ctrl	3500	1
CtrlChan	4800	1
Section	6100	1
Area	6500	1
HWObj	6601	23
PowerSupply	6600	1
Unidentified	7000	1

Panel map: default base address of the available tables, organized by object type



Note: The default base addresses listed above may not exactly match the addressed of your system. Before using them for any related configuration, please check the current settings of the IEC master station in the Composer tool. For more information on the Composer configuration, refer to the *NK8237 Installation, Configuration, and Commissioning Guide* (document no. A6V10854379).

3.2.2.5 FS20/FS720 Fire Objects

This section lists the FS20/FS720 fire objects and the corresponding types in the NK8237 IEC data model (refer to the Addresses Map section [→ 15]).

Here below the complete list of fire objects is presented, organized by model types.

FC20

Sinteso™ FS20:

- FC2020
- FC2030
- FC2040
- FC2060
- FC2080
- FT2040
- FT2080

Cerberus PRO™ FS720:

- FC722
- FC724
- FC726
- FT724

Zone

- Automatic Zone
- Single Alarm Subsystem zone
- Single Exting. discharged zone
- Single extinguishing pre-alarm zone
- Single gas alarm zone
- Single gas warning zone
- Multiple automatic zone
- (Holland) sprinkler zone
- Multi Dependency Zone
- Sprinkler Zone
- Manual FSE Zone
- Manual Zone
- Manual alarm sub-system zone
- Manual Redundancy Alarm
- Technical Zone
- Technical fault sub-system –Zone
- Technical sub-system off zone
- Fault extinguishing system zone
- Technical Gas Alarm
- Fire Subsystem Zone
- Sprinkler Control (ControlSprinklerElem; ZoneSprinklerElem)
- XC10 (ControlXC10Elem; ZoneXC10Elem)
- StandardZoneGas



LogChan

- Input channel(ChannelLogInputAlarmDaElem; ChannelLogInputAlarmLimit-SwitchElem)
- Wired Automatic channel (ChannelLogSensorDaAutomaticWiredElem)
- Wireless Automatic channel (ChannelLogSensorDaAutomatic-WirelessElem)
- Wired Manual channel
- Wireless Manual channel (ChannelLogSensorDaManual-WiredElem)
- Collective channel (ChannelLogSensorDaCollectiveElem)
- Gas channel (ChannelLogSensorDaGasElem; ChannelPhysSensorP2GasElem)
- ByPassable Input (ChannelLogInputAaConfirmationElem; ChannelLogInputAaFaultElem; ChannelLogInputAaSupervisionElem; ChannelLogInputFireElem; ChannelLogInputSprinklerElem; ChannelLogEvacElem; ChannelLogInputSprinkler1Elem; ChannelLogInputSprinkler2Elem)
- Non Bypassable Input (ChannelLogInputBlockedElem; ChannelLogInputDischargedElem; ChannelLogInputFaultElem; ChannelLogInputPrealarmElem; ChannelLogInputSubsystemPrealarmElem; ChannelLogInputSubsystemAlarmElem; ChannelLogInputSubsystemFaultElem; ChannelLogInputSubsystemIsolatedElem)
- Fsd InputLogChannel
- Fsd Output LogChannel
- Led Output
- Release Output channel
- HVAC Output
- HVAC Command
- HVAC Input

Ctrl

- Evac Control
- Evac Unit Control
- Fire Control
- Alarm Control
- RtDevice Control
- RtFault Control
- RtFire Control
- RtSounder Control
- Counter Control Alarm
- Uga Elem Control (ConfigUgaElem)
- Generic Sounders
- Releasing Control Group
- LED element
- Voice Control Group
- HVAC Control Group
- Voice Control

- HVAC Control Event
- HVAC Control Command
- HVAC Control Alarm

CtrlChan

- Output Subsystem
- Generic Output
- Fire Output
- RtOutput
- RtVdsOutput
- AlertSounders
- AlertEvacSounders
- EvacSounders
- FireEffectRequest
- SprinklerEffectRequest
- CauseIncidentGeneric

Section

- Section (SectionElem)
- SectionSummary

Area

- Area(AreaElem)
- Station Area

HWObj

Modules:

- Module Power Supply
- Module Evacuation
- Module Fba
- Module IO
- Module Vds
- Module P2
- Module FCI
- Module Collective
- Module Ethernet
- Module MS9
- ModuleReleasing
- Module CPU
- Module Rt Card
- Legacy Field Bus Modules
- Legacy Modules Lines
- Line Summary

Sub-Modules:

- Submodule P2 Element
- Submodule Communication

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- Submodule Degrade Element
 - Submodule License Element
 - Submodule Collective
 - Submodule Ms9
 - Submodule Nac
 - Submodule Firmware

Devices:

- Device Generic (DeviceP2UnlinkedFDCL221Elem;
DeviceP2UnlinkedFDCL221MElem; DeviceP2UnlinkedFDCL221WElem;
DeviceP2UnlinkedFDCW221Elem; DeviceP2DetectorOOH740Elem;
DeviceP2DetectorOOHC740Elem)
- Config ElementsPrinter Configuration (ConfigPrinterElem;
ConfigPrinterGenericElem; ConfigPrinterITCElem)
- Config Evac Elem (ConfigEvacMasterElem; ConfigEvacSlaveElem)
- Generic Configuration Elem (ConfigFatStandardElem; ConfigFatWithFbfElem;
ConfigFbfElem; ConfigFrdElem; ConfigFrtElem; ConfigPagerElem;
ConfigSttElem; ConfigSynoptic24Elem; ConfigSynoptic48Elem;
ConfigVisualizerElem; ConfigFbfAtElem; ChannelLogFrdElem;
ChannelLogFrtElem; ConfigCerloopElem)
- Config Fsd (ConfigFsdElem)
- Uga Configuration Elem (ConfigUgaElem)

3.2.3 NK8237 Gateway Addresses Map

3.2.3.1 Status Tables

The gateway status tables include two types of addresses applied to a number of objects.

NK8237 Gateway Points

`NK8237Point` (Input addresses, default base address: 8000)

This table is applied to seven objects:

- NK8237 Status
- NK8237 Tamper
- Generic Inputs (up to 3 optional signals, which can be used for reporting the power supply supervision)
- Relay Output (optional, reporting a IEC communication fault)
- Clock (NTP connection status)

Therefore, up to seven addresses are provided, each one corresponding with one object.

Bit 4-7	Bit 0-3	Information	Notes
	x0	Normal status	Quiet
	X2	FS20 Disconnected	One or more FS20 panels are disconnected from NK8237. Note: This information is only available on the NK823x status object.
	x7	Tamper disabled	Tamper detection disabled. Note: This information is only available on the tamper address.
x8		Non-default value	Currently note used (foreseen for future extensions).
x9		Abnormal	Configuration mismatch between gateway and fire system. Note: Tthis information is only available on the NK8237 status address.
xC		Disable	Tamper alarm disabled.
xD		Fault	Connection fault.
xF		Alarm	Activated/Alarmed/Tamper. Note: This information is available on the Tamper, Input and Output addresses.



3.2.3.1 NK8237 Objects

This section lists the gateway objects and the corresponding types in the NK8237 IEC data model.

NK8237 Point

- Application node (NK8237 status)
- NK8237 unit tamper
- Digital Input Onboard (power supply supervision or generic inputs)
- Digital Output Onboard (IEC communication fault)
- Clock (NTP connection fault)

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