

**HEKATRON**

Brandschutz

# Operating manual

# **Standard X radio module**



Brandschutz  
**made in Germany**



# Behaviour in the event of fire

## 1. Rescue people

- ▶ Warn the people living with you.
- ▶ Immediately leave the room / the building and close all doors on your way out to prevent a rapid spread of smoke and fire.
- ▶ Stay close to the floor if there is dense smoke.



- ▶ Ensure that all persons have left the room / the building.
- ▶ If, for whatever reason, you are unable to leave the room / the building, close all doors, seal all cracks and



slots and try to attract someone's attention at the window.

## 2. Call the fire brigade

- ▶ Wait until you are in a safe place before you call the fire brigade.



## 3. Extinguish the fire

- ▶ Only attempt to extinguish the fire yourself if this does not put you in any danger.



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# 1. Introduction

**i** This document is a translation of the original German operating manual.

This manual is valid for the Standard X radio module. Since the radio module can only be used in combination with a smoke alarm, the operating manual for the Genius Plus X or Genius Hx apply in addition. They include all relevant information on the smoke alarm.



This manual is available for download as a PDF file on our website [www.hekatron-brandschutz.eu](http://www.hekatron-brandschutz.eu).

Our website also contains further information and documents.

Additionally, there are various tutorials available for the assembly and commissioning of the Genius Plus X with the Standard X radio module:



[www.hekatron-brandschutz.de/genius-video](http://www.hekatron-brandschutz.de/genius-video)

This manual uses the following symbols and signal words:

<b>Symbol/ signal word</b>	<b>Meaning</b>
<b>CAUTION</b>	Warning which could lead to material damage or functional defects if it is not observed
	Reference to additional information
	Instruction
	Result of an action
-	List

## 2. Intended use

- The radio module is designed exclusively for use with the Genius Plus X and Genius Hx smoke alarms.
- The area of application includes smoke alarms in apartments, single-family homes or similar environments.

### **Improper use**

- Smoke alarms connected in a radio network must not be used for forwarding alarms (e.g. to the fire brigade). For this purpose, a fire alarm control panel in accordance with the national directives and regulations must be used.

If the radio module is not used as intended, Hekatron Vertriebs GmbH shall not assume any liability for resulting damage.

## 3. Safety

If the safety and operating instructions are not observed, no liability and warranty claims against Hekatron Vertriebs GmbH shall be enforceable.

### General

- To ensure the proper and safe use of the radio module, please read the operating manual thoroughly and carefully and follow the instructions.
- Keep the operating manual for future reference.
- In addition, read and observe the operating manual of the smoke alarm.
- Smoke alarm with Standard X radio module:  
Improper assembly, commissioning and maintenance of smoke

alarms with radio modules may lead to gaps in the fire protection system. This work should therefore be carried out by a "Q-tested specialist for smoke alarms".

## 4. General information

This chapter provides an explanation of important general terms and information. These are important for a better understanding of all subsequent chapters.

### Line

- consists of min. 2, max. 30 users
- fixed coding on A.0

### Identification code

Each line is automatically assigned a unique identification code (ID) during radio commissioning, which is allocated to all smoke alarms of this line. After commissioning, the radio modules can only be triggered by messages from radio modules of the same line and with the same ID. Messages from neighbouring systems are ignored.

### Repeater

Each radio module is equipped with a repeater that receives signals and then transmits them at maximum transmission power. Only signals from the same line are transmitted.

### Alarm transmission

If a radio smoke alarm detects a fire, the signal is sent to the radio network after about 20 seconds. The smoke alarms connected in the network remain in alarm status until they are deactivated by pressing the test button or until the triggering smoke alarm no longer detects smoke in the measuring chamber.

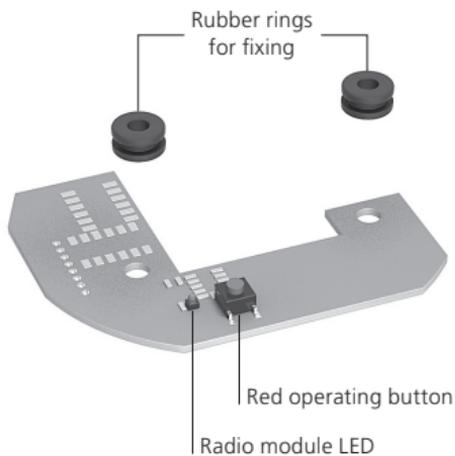
## Signal propagation time

The signal propagation time within a radio network depends on the number of users and the number of signals currently in circulation:

<b>Radio network</b>	<b>Signal propagation</b>
No signals	Approx. 5 to 10 seconds
Signals in circulation	Max. signal propagation time = number of smoke alarms x 3.5 seconds

The signal propagation time of the simultaneously alarming radio users must not exceed 10 minutes, as otherwise no acknowledgement is possible.

## 5. Product description



**Standard X radio module**

## 5.1 Functional principle

Every radio module is equipped with an integrated repeater that receives signals and then transmits them to the next radio smoke alarm within the same line at maximum transmission power.

## 5.2 Features

### General

- fixed coding on A.0 line
- connection of up to 30 radio smoke alarms (per line) in a network
- parallel operation of several A.0 lines possible
- approx. 30 m range within buildings
- acoustic locating of alarms and faults

### Conformity

Hekatron Vertriebs GmbH hereby declares that the Standard X radio module is compliant with EU regulations 2014/53/EU and 2011/65/EU. The complete declaration of conformity can be found on our website [www.hekatron-brandschutz.de](http://www.hekatron-brandschutz.de).

## 6. Project planning

All specifications in the operating manual of the smoke alarm shall apply to project planning and the respective assembly position of the smoke alarms.

Determine the following aspects:

- number of smoke alarms with radio module
- their assembly positions

### **Also comply with the following additional aspects:**

- connection of max. 30 radio smoke alarms per line
- distance between 2 radio users: min. 0.5 m, max. approx. 30 m
- distance to external radio systems (e.g. router, DECT telephones, radio loudspeakers, baby monitor): min. 2 m

- observe signal propagation times (see chapter "General information")

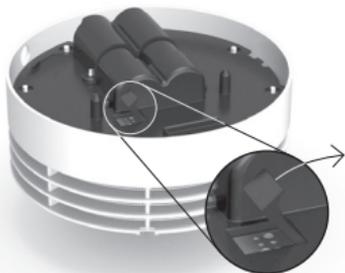
**i** When external radio communications systems are in the radio range which use the same frequency range (868 MHz), it can lead to an increased level of radio communications traffic (=portion of radio interference), and pose an energy-related burden on the participating wireless devices.

## 7. Assembly

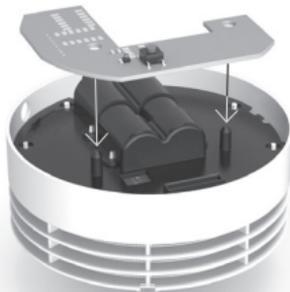
### CAUTION

Risk of damage to the radio module

- ▶ Do not touch components (circuit boards) directly. Only hold the radio module by the edge.



- ▶ Mount the smoke alarm base. For this purpose, observe the specifications in the operating manual of the smoke alarm and in the chapter "Project planning" in this manual.
- ▶ Remove the cover of the interface at the smoke alarm using a pair of pliers.
- ▶ Carefully place the radio module on the connector pins in the smoke alarm.

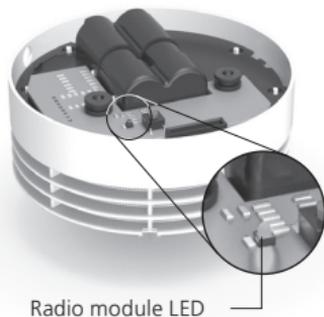
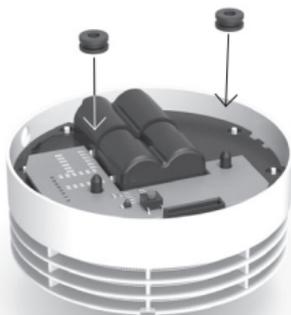


- ▶ Fix the radio module to the connector pins using the rubber rings.
- ⇒ The radio module LED flashes for approx. 5 seconds, then it goes out.
- ⇒ The settings of the radio module are read by the smoke alarm

### CAUTION

If smoke alarms with a radio module are screwed into the base, but no radio commissioning is carried out within 2 hours, the smoke alarms signal a fault.

- ▶ Commission the radio module.



## 8. Radio commissioning

Radio commissioning is carried out for each line, i.e. each line must be commissioned separately. If 2 A.0 lines are to be operated in parallel, 2 radio commissioning operations must be carried out in succession. This ensures that the lines emit alarms separately and independently.

### Requirements

- A radio smoke alarm of the line is ready at hand, but not yet screwed into the base.
- All other radio smoke alarms of this line are completely assembled and signal their readiness for commissioning by means of the running light (green-orange-red) on the test button every 8 seconds.

### Performing radio commissioning

- i** After the start of commissioning, all users of this line must be confirmed within 15 minutes by pressing the test button.
  - ▶ Press and hold the red operating button on the ready but not yet mounted smoke alarm for at least 5 seconds until the radio module LED lights up permanently.
  - ▶ Release the red operating button.
    - ⇒ The radio module LED continues to flash for a short time.
  - ▶ Screw the smoke alarm into the base.
    - ⇒ All smoke alarms of this line within range will signal the receipt of the signal for

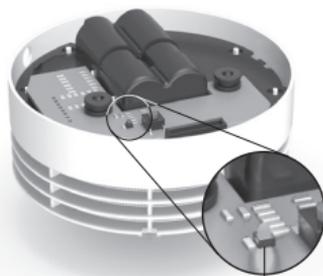
15 minutes by flashing green on the test button and a triple acoustic signal every 8 seconds.

► All smoke alarms of this line must be confirmed within 15 minutes by pressing the test button.

⇒ The smoke alarms each signal successful registration on the line by a triple acoustic signal and the test button flashing green.

⇒ The smoke alarms receive a unique ID.

⇒ Radio commissioning is complete. The network-connected smoke alarms go into normal operation and the test button flashes green every 48 seconds.



Radio module LED



Test button

## 9. Operation

### 9.1 Locating and deactivating a fault

#### Locating a fault

- ▶ Press the test button on a signalling smoke alarm.
  - ⇒ The smoke alarm with the fault continues to signal.
  - ⇒ All other smoke alarms are muted.

#### Muting a fault

- ▶ Press the test button on the triggering smoke alarm.
  - ⇒ The fault is muted for 24 hours.

### 9.2 Locating and deactivating an alarm

#### Locating an alarm

- ▶ Press the test button on a signalling smoke alarm.
  - ⇒ All smoke alarms that detect smoke continue to signal.
  - ⇒ All other smoke alarms are muted.

#### Deactivating an alarm

- ▶ Press the test button on the triggering smoke alarm.
  - ⇒ The alarm is muted for 10 minutes.

-  If the smoke alarm continues to detect smoke, the radio network is alarmed again.

## 9.3 Preventing transmission of alarms

If a radio smoke alarm detects a fire, the signal is transmitted to the radio network after about 20 seconds. Within these 20 seconds, the transmission and thus area-wide alarm can be prevented as follows:

- ▶ Press the test button on the triggering smoke alarm.
  - ⇒ The triggering smoke alarm is muted.
  - ⇒ The transmission of the alarm is prevented.

## 9.4 Adding users to the radio network/replacing smoke alarms

Single or several users can be added to an existing radio network at a later point in time.

 The maximum number per line is 30 users.

This procedure also applies for the replacement of an existing smoke alarm.

### Requirements

- The new users are prepared for commissioning (see chapters "Project planning" and "Assembly").
- The new smoke alarms are completely assembled in the base and signal their readiness for radio

commissioning by means of the running light (green-orange-red) on the test button every 8 seconds.

### **Adding / replacing users**

- ▶ Unscrew an existing user from its base (= start smoke alarm).
- ▶ Press and hold the red operating button on the radio module for about 5 seconds.
  - ⇒ The radio module LED lights up permanently.
  - ⇒ All smoke alarms of this line signal their readiness for radio commissioning for 15 minutes by a positive self-test sound and green flashing of the LED in the test button every 8 seconds.
- ▶ Screw the start smoke alarm into the base.

- ▶ Confirm each new user by pressing its test button.
  - ⇒ The users each signal successful registration on the line by a triple acoustic signal and green flashing of the test button.
- ▶ Also confirm the users which are already members of the line, either by pressing the test button or by terminating the radio commissioning process.

### **Premature termination of the radio commissioning**

- ▶ Unscrew an existing user, which is still signalling readiness for radio commissioning, from its base.

- ▶ Briefly press the red operating button at the radio module.
  - ⇒ Radio commissioning is terminated.
  - ⇒ The smoke alarms stop signalling.
  - ⇒ All users confirmed so far remain assigned to this line.
- ▶ Screw the user back into its base.

## 9.5 Removing users from the radio network

- ▶ Remove the desired radio smoke alarm from the base.
- ▶ Remove the rubber rings from the connector pins.
- ▶ Remove the radio module from the smoke alarm.

### CAUTION

Modifying an existing radio network may result in incorrect spacing between the remaining users and thus in an interruption of the radio connection.

- ▶ Perform a line test of the remaining users and make sure that the users are still within range of each other.

## 9.6 Deleting line allocations

In order for a smoke alarm to be taught-in to another line, its ID and assignment to the current line must first be deleted.

- ▶ Remove the radio module from the smoke alarm for approx. 20 seconds.
  - ⇒ The ID and the assignment to the line are deleted.
  - ⇒ The smoke alarm can now be taught-in to another line.

## 10. Status signals

In normal operation, the smoke alarm carries out an automatic self-check in regular intervals. The corresponding status is signalled by means of the test button and the acoustic alarm.

### Normal operation

The smoke alarm has an integrated real-time clock. This has the effect that the LED in the test button and the acoustic alarm are deactivated from 9 p.m. to 7 a.m. CET<sup>1</sup>.

Test button		Acoustic alarm	Cause	Remedy
GREEN	Flashes every 48 seconds	---	Smoke alarm functions impeccably	---
GREEN	Flashes every 48 seconds	Short acoustic signal every 60 seconds	Fault of a smoke alarm in the line	Locate the smoke alarm with the fault. Rectify the fault. Re-commission radio module.
GREEN-ORANGE-RED	Running light every 48 seconds	---	Radio networking is not possible (up to max. 2 hours after insertion of the radio modules)	Commission the radio module.

<sup>1</sup> CET: Central European Time (winter time)

**Normal operation (continued)**

<b>Test button</b>		<b>Acoustic alarm</b>	<b>Cause</b>	<b>Remedy</b>
GREEN- ORANGE- RED	Running light every 48 seconds	Short acoustic signal every 48 seconds	No radio networking (radio module LED is off)	Commission the radio module.
ORANGE	Flashes every 8 seconds	Short acoustic signal every 48 seconds	End of service life <sup>1</sup>	Replace the device. Deactivate the acoustic alarm.
ORANGE	Flashes every 8 seconds	--- (Acoustic alarm has been deactivated)	End of service life <sup>1</sup>	Replace the device.
RED	Flashes every 8 seconds	Short acoustic signal every 48 seconds	Fault detected <sup>1</sup>	Replace the device. Deactivate the acoustic alarm
RED	Flashes every 8 seconds	--- (Acoustic alarm has been deactivated)	Fault detected <sup>1</sup>	Replace the device.

<sup>1</sup> For example: empty battery

## Fire alarm

As soon as the smoke alarm detects smoke, it enters the “fire alarm” mode. In this mode, the LED is flashing, and the acoustic alarm is sounded.

Test button		Acoustic alarm	Cause	Remedy
RED	Flashes every second	Alternating, loud alarm sound	Smoke is detected	Exit the building (s. page 3 “Conduct in the event of fire”).
RED	Flashes every 8 seconds	Alternating, loud alarm sound	Alarm received: Smoke is detected	Exit the building (s. page 3 “Conduct in the event of fire”).
GREEN	Double-flashes every 48 seconds	---	Active alarm storage (the device has an active fire alarm)	Check environment for possible sources of smoke. Delete the alarm storage by pressing the test button briefly.

### Deactivating the acoustic alarm

► Press the test button briefly.

⇒ In the event of a fault, the acoustic alarm is muted for 24 hours.

⇒ In the event of a fire alarm, the acoustic alarm is muted for 10 minutes. Subsequently, the alarm will be sounded again if smoke is still detected.

## 11. Maintenance

To be able to guarantee the impeccable function of the smoke alarm incl. radio module, an on-site inspection including functional test is to be carried out, at least once per year ( $12 \pm 3$  months), in accordance with the national directives and regulations (in Germany in accordance with DIN 14676-1). Please refer to the chapter "Maintenance" in the operating manual of the smoke alarm.

For radio smoke alarms, we also recommend carrying out a line test.

For better traceability, we recommend documenting the maintenance work.

### 11.1 Line test

The line test checks whether all smoke alarms in a line with the same ID are within range and functional.

#### Performing a line test

- ▶ Remove a radio smoke alarm from the base.
- ▶ Press the test button briefly.
  - ⇒ All smoke alarms in this line that can be reached by radio signal signal this for 15 minutes by a reduced triple acoustic signal and green flashing of the LED every 8 seconds.
- ▶ Press the test button on all signalling radio smoke alarms within these 15 minutes in succession.
  - ⇒ Every smoke alarm confirms its availability by a positive

self-test sound and a single green flashing of the LED.

- i** After 15 minutes, the triple acoustic signal stops automatically on all smoke alarms

### Terminating a line test

- ▶ Remove a radio smoke alarm that is still signalling from its base.
- ▶ Briefly press the red operating button at the radio module.
  - ⇒ All smoke alarms of the tested line gradually fall silent.

## 12. Disposal

Every consumer is legally obliged to return all electrical and electronic equipment via the municipal collection points. Dispose of the radio module in accordance with national regulations and guidelines. In this way you can make a significant contribution to environmental protection!

**Disposing of the smoke alarm with the domestic waste is prohibited.**



## 13. Environment

Our Standard X radio modules are manufactured in compliance with the quality and environmental management standards according to DIN EN ISO 9001 and DIN EN ISO 14001. The radio module meets the statutory RoHS requirements and is free from any illegal substances.

## 14. Terms of use

If the following terms of use are complied with, this radio module has a typical service life of up to 10 years. To achieve this long service life, the terms of use of the smoke alarm must also be observed, as the radio module is designed exclusively for use in a smoke alarm.

### **Genius Plus X smoke alarm**

- Commission the smoke alarm at the latest 1 year after its production date.
- Typical service life: 10 years
- Conduct project planning and assembly according to this smoke alarm operating manual.
- Ambient temperature according to the "Technical data" specified in the operating manual of the smoke alarm

- Maximum alarm time per year:  
90 seconds
- Max. 12 functional tests or data transmissions via “Smartsonic” per year

### **Genius Plus X with radio module**

- Installation of the radio module:  
at the latest 1 year after initial commissioning of the smoke alarm
- Commissioning of the radio module: max. 2 x in 10 years
- Max. 1 line test per year
- Project planning according to this operating manual
- Portion of radio interference (external radio signals in the frequency range of 868 MHz):  
max. 0.2 % (= 3 min/day) in 10 years
- The maximum duration for co-signalisation of fault messages in the radio network is 30 days.

## **15. Guarantee**

Upon fulfilment of the requirements, Hekatron issues a 5-year guarantee according to our conditions of guarantee, which you will find at [www.hekatron-brandschutz.eu/en/downloads](http://www.hekatron-brandschutz.eu/en/downloads). The statutory warranty remains unaffected thereby.

## **16. Product complaints**

Our radio modules meet the highest quality requirements. Should you nevertheless have any reason to complain, please directly contact your dealer.

## 17. Technical data

Approved by VdS	VdS 3515 / G-Number G215027/G219068
Battery life	typically 10 years
Supply voltage	via smoke alarm
Frequency band	SRD band
Frequency range	868.3 MHz
Antenna type	PCB antenna
Range	min. 100 m unobstructed path
Transmission power	8 dBm / 6.3 mW
Ambient operating temperature permanent short-term <sup>1</sup>	temperature similar to residential conditions 0 °C to 55 °C
Storage temperature	-10 °C to +60 °C
Ambient humidity at 40 °C (permanent, non-condensing)	max. 70% RH
Dimensions	approx. 60 mm x 78 mm
Weight	10 g

<sup>1</sup> To achieve the typical lifespan of up to 10 years, the ambient operating temperature may only deviate temporarily from the temperature similar to residential conditions.

# Obliged to safety.

The protection of people and material assets in the event of a fire has always been the main objective of Hekatron Brandschutz. We are the leading provider of technical fire protection systems in Germany and your number-one partner in this field.

Trust, safety and networking have strengthened Hekatron for over 55 years. Building on this, we have continuously developed our offer. We connect products and services to build a holistic, application-oriented solution and thus enable our customers to enter the digital era.



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