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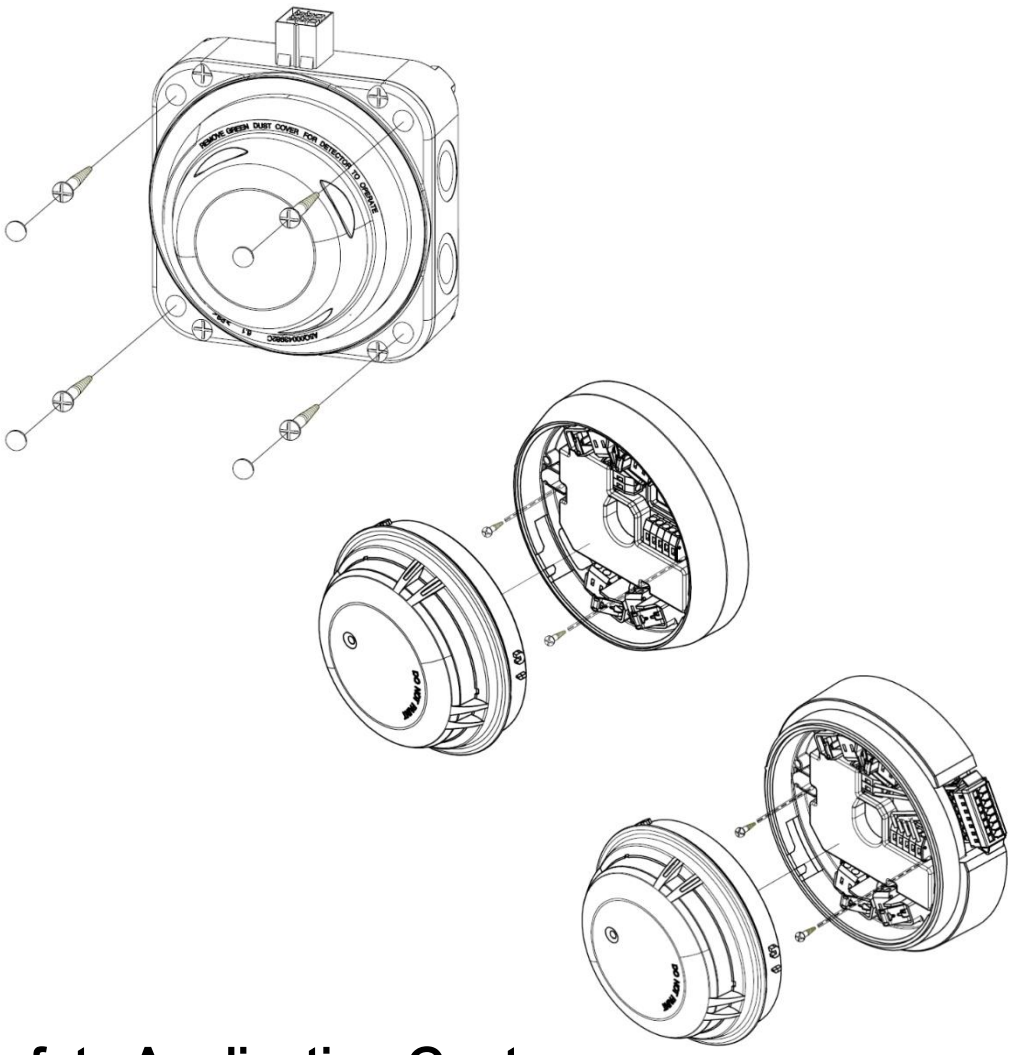

Fire Safety Application Center

DS1 024R-AT / DS1 110R-AT

DS2 024R-AT / DS2 110R-AT

DSW 024R-AT / DSW 110R-AT

Automatic fire detectors for rail application

Commissioning and Test Instruction

Imprint / Legal notice

Technical specifications and availability subject to change without notice.

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Fire Safety Application Center Austria

Siemens AG Österreich
Smart Infrastructure
RC-AT SI BP FSAC
Siemensstraße 90
AT-1210 Wien
Tel. +43 51707-0
www.siemens.com

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1 About this document

Goal and purpose

This document contains all the information you'll need on automatic fire detectors

- DSxR-AT / OOH740
-

Following the instructions consistently will ensure that the product can be used safely and without any problems.

Target groups

The information in this document is intended for the following target groups:

Target group	Activity	Qualification
Product Manager	• Is responsible for information passing between the manufacturer and regional company. • Coordinates the flow of information between the individual groups of people involved in a project.	• Has obtained suitable specialist training for the function and for the products. • Has attended the training courses for Product Managers.
Project Manager	• Coordinates the deployment of all persons and resources involved in the project according to schedule. • Provides the information required to run the project.	• Has obtained suitable specialist training for the function and for the products. • Has attended the training courses for Project Managers.
Project engineer	• Sets parameters for product depending on specific national and/or customer requirements. • Checks operability and approves the product for commissioning at the place of installation. • Is responsible for troubleshooting.	• Has obtained suitable specialist training for the function and for the products. • Has attended the training courses for Product Engineer.
Installation personnel	• Assembles and installs the product components at the place of installation. • Carries out a performance check following installation.	• Has received specialist training in the area of building installation technology or electrical installations.
Maintenance personnel	• Carries out all maintenance work. • Checks that the products are in perfect working order. • Searches for and corrects malfunctions.	• Has obtained suitable specialist training for the function and for the products.

1.1 History of changes

The reference document's version applies to all languages into which the reference document is translated.

The first edition of a language version or a country variant may, for example, be version 'd' instead of 'a' if the reference document is already this version.

The table below shows this document's revision history:

Version	Edition date	Brief description
a	13.11.2019	First edition

2 Safety

2.1 Safety regulations for the method of operation

National standards, regulations and legislation

Siemens products are developed and produced in compliance with the relevant European and international safety standards. Should additional national or local safety standards or legislation concerning the planning, mounting, installation, operation or disposal of the product apply at the place of operation, then these must also be taken into account together with the safety regulations in the product documentation.

Electrical installations

⚠ WARNING

Electrical voltage

Electric shock

- Work on electrical installations may only be carried out by qualified electricians or by instructed persons working under the guidance and supervision of a qualified electrician, in accordance with the electrotechnical regulations.

Testing the product operability

- Prevent the remote transmission from triggering erroneously.
- The activation of fire control installations for test purposes must not cause injury to anyone or damage to the building installations. The following instructions must be observed:
  - Use the correct potential for activation; this is generally the potential of the building installation.
  - Only check controls up to the interface (relay with blocking option).
  - Make sure that only the controls to be tested are activated.
- Inform people before testing the alarm devices and allow for possible panic responses.
- Before testing the remote transmission, inform the corresponding alarm and fault signal receiving stations.

Disregard of the safety regulations

Before they are delivered, Siemens products 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 warnings contained in the documentation. This applies in particular to the following damage:

- Personal injuries or damage to property caused by improper use and incorrect application
- Personal injuries or damage to property caused by disregarding safety instructions in the documentation or on the product
- Personal injury or damage to property caused by poor maintenance or lack of maintenance

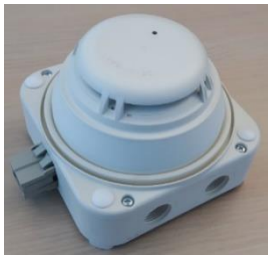
3 Structure and function

3.1 Overview

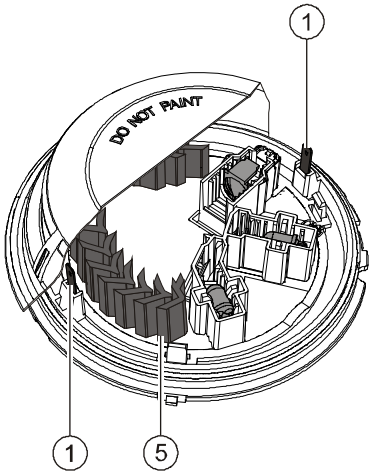
Das Detektorset 'DSWxxxR-AT' includes following components:

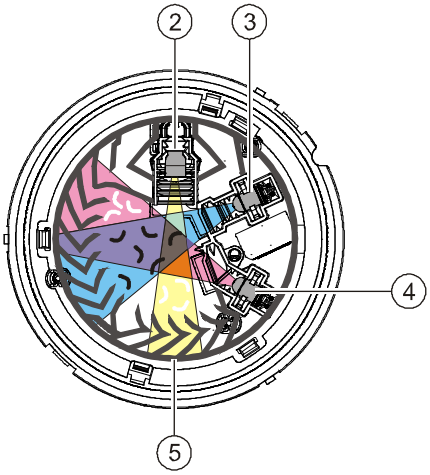
- OOH740 - Multi-Sensor Smoke detector ASA
- BA721 – Detector base wet
- DB1R-AT – Base 1 Rail
- DP024R-AT – Collective detector print with power supply 24VDC (or 110VDC)
- DBT1R-AT – Print cover
- RSV1,6 B9 GR – External plug
- Internal Wiring
- 4 x cover plug 11,0/13,0/5,0 PE white

All other variants (DS1xxxR-AT, DS2xxxR-AT) are not listed in detail in his document since there are no technical or functional differences in terms of commissioning or testing procedure.



3.2 Structure





1 Heat sensors
2 Receiver
3 Backward scatterer
4 Forward scatterer
5 Labyrinth

3.3 Parameter sets

The detection behavior of the point detectors is influenced by the parameter sets so that it can be specifically adjusted to the fire phenomena and environmental conditions to be expected in the environment to be monitored.

All parameter sets are programmed in the point detectors. During commissioning, the optimum parameter set must be selected for the conditions at the place of installation.

Overview of parameter sets to be choosen

Standard Plus:

This parameter set is fast and highly sensitive. It is thus especially suited to rooms without deceptive phenomena, where the priority is on early fire detection.

Suppression:

Thanks to its very robust behavior, the 'Suppression' parameter set is particularly suitable for rooms where deceptive phenomena such as cigarette smoke or exhaust fumes can be expected. It reacts in a very robust way to the deceptive phenomenon vapor.

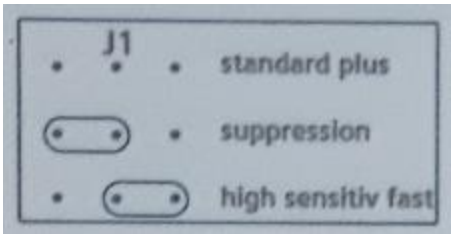
High Sensitive Fast:

This parameter set is suited for applications requiring very high sensitivity levels. It is also suitable for applications that can otherwise only be covered with special detectors.

Parameter set in fire detector OOH740	Flashing signal to display the set parameter set in the first three minutes following the detector line being started up
'Standard Plus'	Once every 6 s
'Suppression'	Twice every 6 s
'High Sensitive Fast'	Three times every 8 s

Setting up parameter

Parameter can be choosen via Jumper J1 directly integrated on the detector print (factory status is “standard plus”).



3.4 Internal alarm indicator

The flashing behavior of the OOH740 in collective mode is independent from the product version!

The following additional displays are possible when operating the point detector OOH740:

Operating condition	Flashing mode of alarm indicator
Normal	Off
Alarm	Flashing every 1 s
Fault	Two flashes every 4 s
'Standard Plus' parameter set is set	Flash every 6 s [1]
'Suppression'parameter set is set	Two flashes every 6 s [1]
'High Sensitive Fast' parameter set is set	Three flashes every 8 s [1]

[1] Only during the first three minutes of operation after the detector line being started up or reset.

If there is still a flashing signal on a point detector OOH740 more than 3 minutes after the detector line was started up, there is a fault.

Once the point detector has been inserted into the detector base or once the detector line has been reset, the point detector works in test mode for a period of 3 minutes.

The 'Test mode' status is displayed on the point detector's internal alarm indicator. The internal alarm indicator displays the parameter set selected at the present moment.

During this time, the point detector's response time is considerably reduced. This makes it easier to test the point detector with test gas.

4 Commissioning

4.1 Performance check

The selftest automatically subjects the detectors to an extensive electrical performance check. Regular performance checks of the detectors are required nonetheless. This may be done with the test gas or hot air fan depending on the detector type.

Recommendation:

- Check the devices every year.

1. Replace heavily soiled or damaged devices.

- All point detectors should be replaced after 6 to 8 years of service, depending on the ambient conditions.

4.2 Necessary testequipment

Testing of the point detector must be performed with one or more of the following accessories:

- Detector tester RE6 (BPZ:3680300001)
- Test gas optical
  - REF8-S (recommended - A5Q00011688)
  - REF8 (A5Q00011687)
- The detector tester RE6 is used together with a test gas can REF8 or REF8-S. It is designed to test optical smoke detectors and ionization detectors.
- REF8 and REF8-S dissolve without residue, which is not always true for other test gases.
- REF8 and REF8-S are environmentally-friendly test gases and comply with strict environmental regulations. They do, however, contain flammable substances. REF8 is used for the temperature range 0…+40 °C and REF8-S for -20…+40 °C in dry and damp conditions. REF8-S is mainly used for temperatures below 0 °C or for point detectors that only trigger the alarm when there is a high level of smoke density or after longer signal integration.

4.3 Test instruction

The fire detectors are highly resistant to deceptive phenomena. This means that optical fire detectors, for example, will recognize the immediate occurrence of smoke (such as that which occurs during testing with test gas) as a deceptive phenomenon and will not trigger an alarm. This is desirable in normal operation; however, it does make testing with test gas problematical.

To enable detector testing with test gas or with a hot air fan, the detector must be switched to test mode.

To allow a simplified testing of the detector in terms of respondence time, the point detector has a reduced response time for a period of 3 minutes following the detector line being started up or reset. In this time, the point detector responds faster to test gas or a hot air fan than in normal operation.

Once an alarm is triggered on a point detector, the detector line must be restarted.

1. Start (power on) the detector or disconnect it from the power supply for at least 5 sec. (or simply remove it from the detector base and reinsert it) such that the detector switches to **test mode**.

   The point detector then has a reduced response time for **3 minutes**.
2. Perform the detector test within the next 3 Minutes.
3. For the test procedure, the detector tester is pushed over the detector. By **shortly pressing, for approx. ½ seconds**, the test gas flows into the measuring chamber of the detector, simulating the presence of fire aerosol. Leave the detector tester at the detector and, if necessary, repeat pressing every 15 seconds for approx. ½ seconds. Within a short time, the detector responds and trigger the alarm.
4. After the detector has been triggered and in alarm condition, **disconnect it again from the power supply** (or remove the detector OOH740 from the base and reinsert it) to restart it. The detector should operate for a short time (min. 1 minute) in **normal condition** (no alarm, no fault).

   The detector now is set up to a reference state which should be generated before each delivery, to prevent any hypersensitive reactions when reboot the detector.

To trigger a detector using test gas, normally 2…4 gas discharges are required. When the detector is working in test mode, activation takes place after approximately 10 seconds.

⚠ CAUTION

Never spray test gas from a short distanc (less than 30cm) directly into the measuring chamber!

Never spray the test gas at the detector for more than 1 second!

- Excessive test gas supply or performing the test at a too short distance leads to icing on the sensor system and can subsequently lead to a problem during recommissioning or replacing the detector.

Issued by
Siemens AG Österreich

Fire Safety Application Center
Smart Infrastructure
RC-AT SI BP FSAC
Siemensstraße 90
AT – 1210 Wien
+43 5 1707
www.siemens.com