SIEMENS

Fire Safety Application Center

DSWH10 024R-AT / DSWH10 110R-AT

DSWH12 024R-AT / DSWH12 110R-AT

Automatic fire detector for Rail

Automatic heat detector for rail application

- Signal processing with **detection algorithms**
- Selectable parameter sets
- 3-color LED indicator
- Drift compensation
- Internal error monitoring
- Meets material requirements according EN45545-2
- Rail-proved by notified body

Properties

Design

- Resistant to environmental and interfering influences such as dust, fibers, insects, moisture, extreme temperatures, electromagnetic interference, corrosive vapors, vibration

Features

- Shock resistant, protection against sabotage
- Protected electronics
- High-quality components
- Integrated alarm indicator (AI), located centrally, 360° visibility
- Signal processing with detection algorithms
- Rail certified

Eco-friendly

- Environmentally friendly processing
- Reusable materials
- Electronic parts and synthetic materials can be easily separated

Use

HI110R-AT heat detector (static and differential)

Heat detector consisting of:

- Point detector with one heat sensor

Function:

- For high requirements
- Reliable response behavior for slow and rapid temperature rises, plus reliable response behavior for low temperatures
- Parameter set ‘A1R’ (Static release: 60°C, Differential release: Δ25K)

Use:

- Where significant dust or dirt deposits or high moisture levels could impair the operation of standard detectors

HI112R-AT heat detector (static only)

Heat detector consisting of:

- Point detector with heat sensor

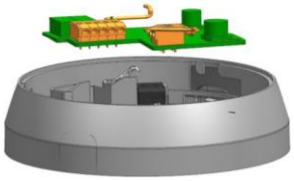
Function:

- Measures the operating temperature, sends a danger signal to the control panel if the maximum temperature is exceeded
- Selectable detection behavior thanks to two parameter sets:
  - Parameter set 1: ‘A2S’ (Static release: 65°C)
  - Parameter set 2: ‘B’ (Static release: 80°C)

Use:

- Where significant dust or dirt deposits or high moisture levels could impair the operation of standard detectors

Detector base DB1R-AT

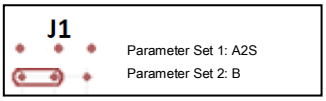


Detector base consisting of:

- Detector base print top
- Base print (24V or 110V)
- Detector base

Function:

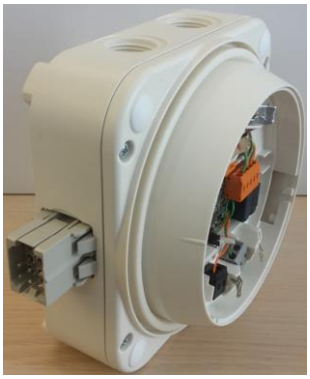
- Adjustment of detection sensitivity via jumper (HI112 only)



Use:

- Meets UL94-V0 requirements

Base attachment wet BA721 with Weidmüller connector



Base attachment wet consisting of:

- Base wet
- Plug-in connector incl. crimp contacts
- Blind plugs
- Internal wiring

Function:

- Base attachment wet with additional integrated rubber seal for mounting in wet or humid environments
- For achieving a higher protection category
- For mounting in wet or humid environments
- Quick connectivity through plug-in connector

Use:

- Specially for humid and cold environments

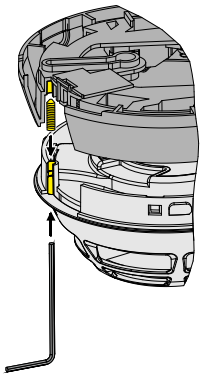
Type Overview

Type	Designation	Order no.	Weight [kg]
DSWH10 024R-AT	Detector Set Wet HI110, 24VDC	6500007740	0,450
DSWH12 024R-AT	Detector Set Wet HI112, 24VDC	6500007741	0,450
DSWH10 110R-AT	Detector Set Wet HI110, 110VDC	6500007997	0,451
DSWH12 110R-AT	Detector Set Wet HI112, 110VDC	6500007998	0,451
HI110R-AT	Heat detector (static and differential)		0,130
HI112R-AT	Heat detector (static only)		0,130
DB1R-AT	Detector base		0,071
DP024R-AT	Detector base print (PCB, 24V)		0,020
DP110R-AT	Detector base print (PCB, 110V)		0,023
DBT1R-AT	Detector base PCB top		0,008
BA721	Base attachment wet		0,272
Connector	Plug-in connector RSV		0,011
Crimp contacts	Contacts for connector RSV		0,548
Torroidal ferrite	Torroidal ferrite		0,010
Blind plugs	Blind plug for covering screw		0,0001
Accessories			
LP720	Detector locking device	S54319-F9-A1	0,001

Accessories

Detector locking device LP720

- For protection against theft of the point detector
- Set screw M3 x 12 mm prevents the point detector being unscrewed from the detector base
- Point detector can only be removed with the appropriate Allen key



Disposal

The device is considered an electronics device for disposal in terms of European Directive 2012/19/EU and may not be disposed of as domestic garbage.

- Dispose of the device through channels provided for this purpose.
- Comply with all local and currently applicable laws and regulations.
- Dispose of empty batteries in designated collection points.

Installation

Base attachment wet

The 'base attachment wet BA721' is for surface-mounted feed lines in humid and cold environments. Mounting of the detector is achieved through 4 appropriate screws in the openings provided for fixation. The openings are sealed with blank plugs (see figure below).

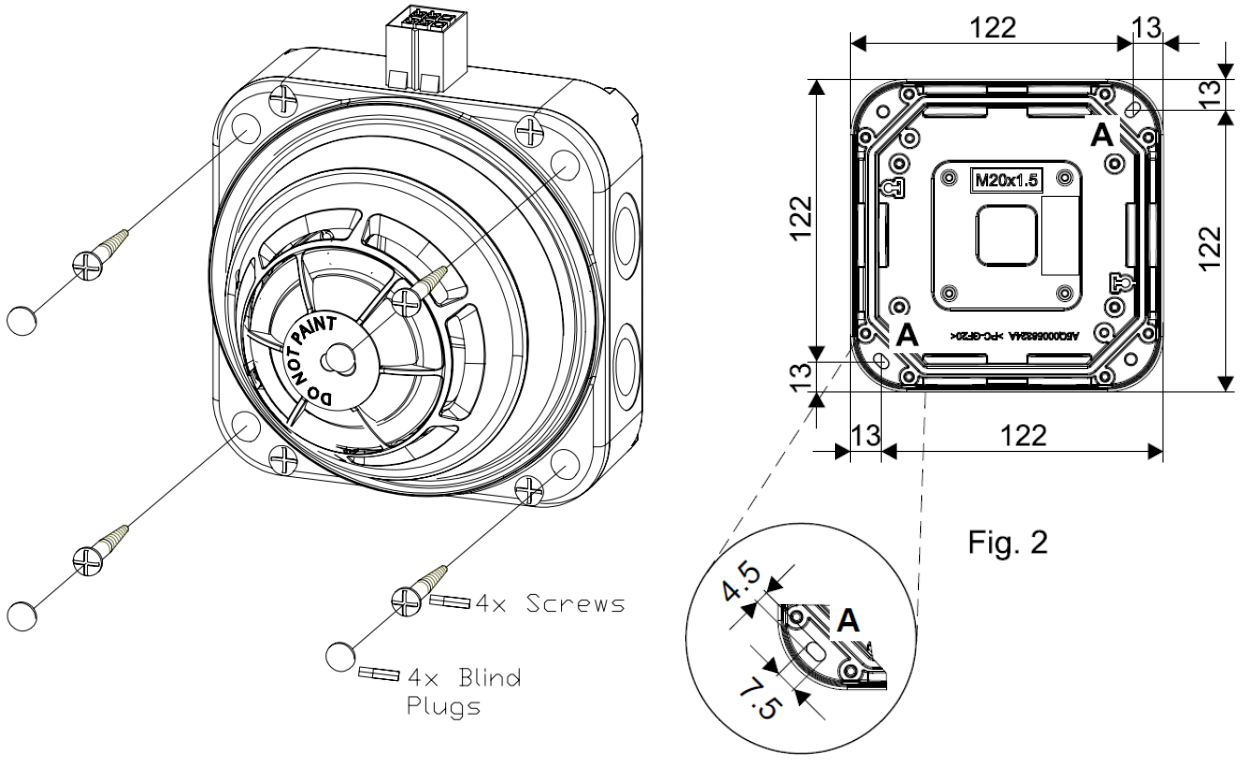
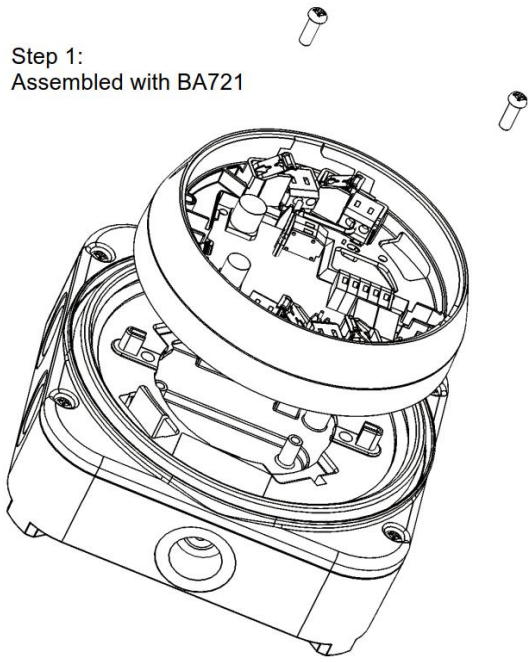


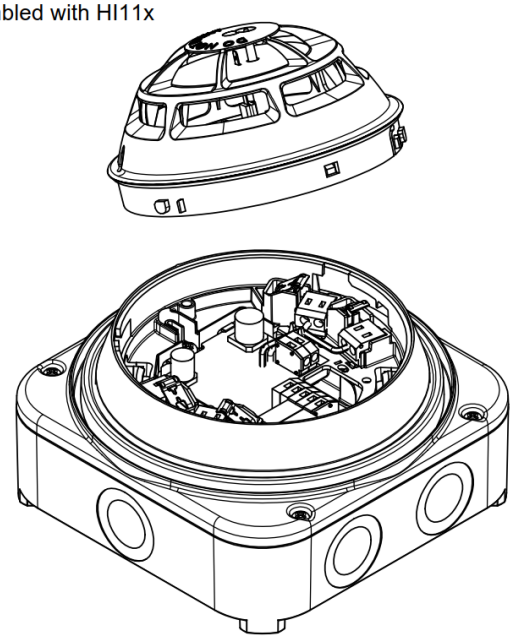
Fig. 2

Assembling

Step 1:
Assembled with BA721



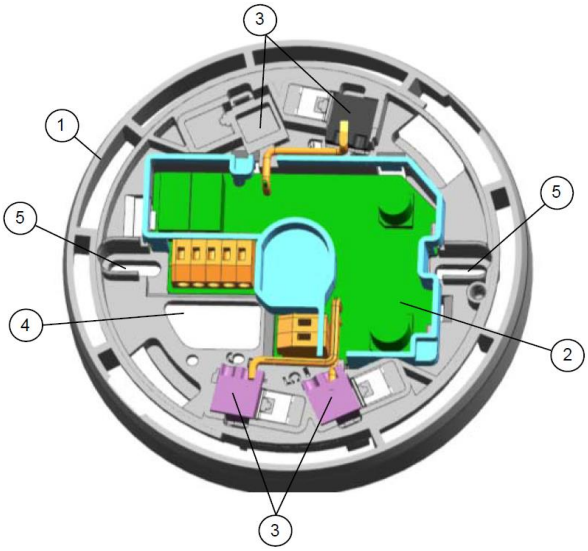
Step 2:
Assembled with HI11x

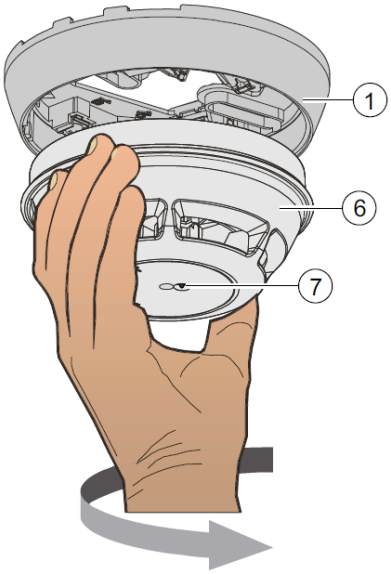


Detector and detector base

- Mounting slits allows fast and variant fixation
- Connection terminals for conductors up to max. 1.6 mm²

The detector can be screwed into the base easily either by hand or using the detector exchanger DX791 and the corresponding adapter FDUD491.
The internal alarm indicator is centered in the detector, which makes alignment of the point detector superfluous.





1 Detector base

2 Print and Cover

3 Connection terminals

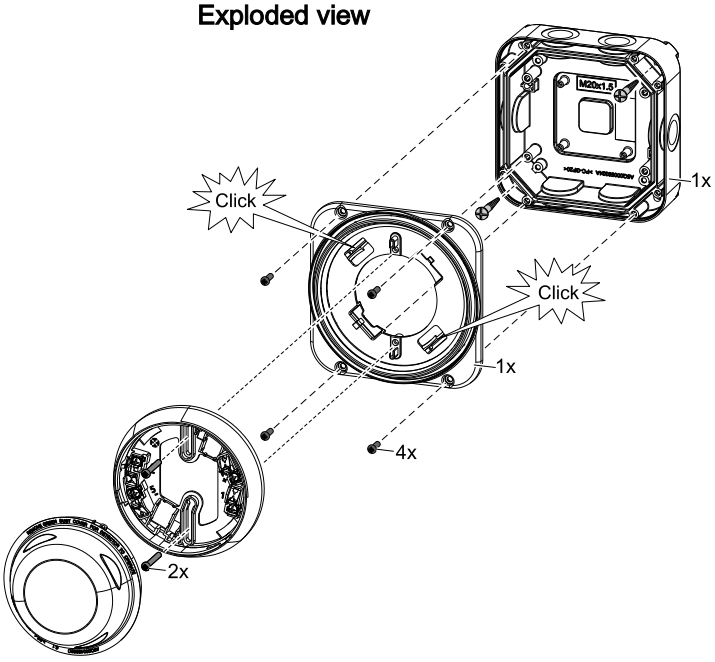
4 Opening for cable entry

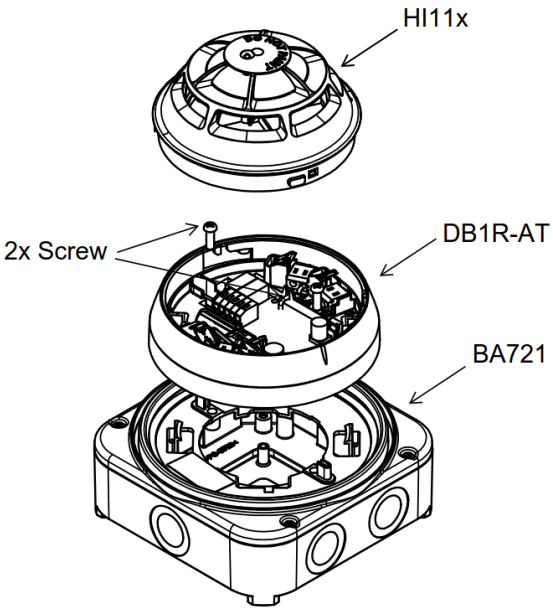
5 Mounting slits

6 Point detector

7 Internal alarm indicator

Exploded view





Inspection, Maintenance and Revision

Interval	Type of check	Measures
Six-monthly	Inspection	• Visual inspection • Check detector module and alarm transmission • Check fault forwarding • Check LED indicator at detector module
Annually	Inspection and maintenance	• Visual inspection • Check detector module and alarm transmission • Check fault forwarding • Check LED indicator at detector module • Check response time by carrying out a heat test, compare this with previous checks, and investigate any discrepancies • Check and test power supply in accordance with the manufacturer's instructions

Performance check

The selftest automatically subjects the detectors to an extensive electrical performance check. Nevertheless, regular performance checks of the detectors are required. This may be done with a hot air fan or heat detector tester kit RE7T.

Recommendation

- Check the devices every year
- Replace heavily soiled or damaged devices
- All point detectors should be replaced after 6 to 8 years of service, depending on the ambient conditions.

Testing the point detector

Depending on the point detector, testing may be performed with one or more of the following accessories:

- Heat detector tester kit RE7T
- Hot air fan

Collective operation (Stand-Alone operation)

Once an alarm for testing purpose is triggered on a point detector, the detector line must be re-stared/disconnected from collective line.

Therefore, the detector must be disconnected from the power supply such that its switched off. You can do the following to disconnect the power supply:

- Restart the detector line
- Remove the detector from its base for at least 5 sec. and then reinsert it

Safety

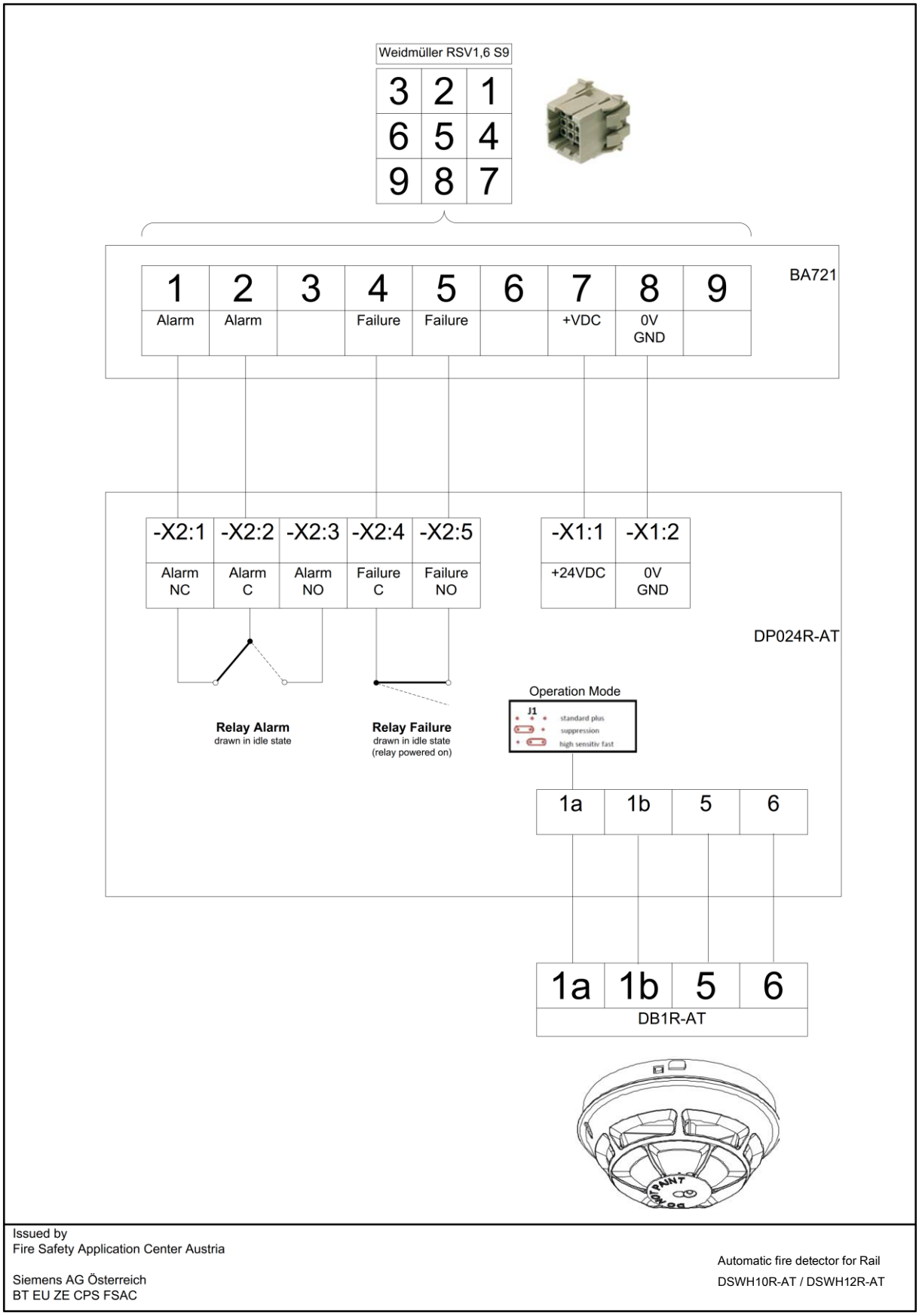
- Do not operate the device above the specified nominal voltage.
- Avoid touching the connection contacts in any case.
- Use of detector locking device (LP720) to prevent improper opening of the device is highly recommended.

The following additional measures must be followed especially for use in rail vehicles.

Inspection
• Per car, switch at least one detector into ALARM condition by using appropriate test equipment (RE7T) • Per car, switch at least one detector into FAULT condition by unscrewing the detector from its base • Verify that ALARM/FAULT message is forwarded accordingly by checking if ALARM/FAULT notification is displayed on the control system/control board (e.g. train cab) • Check detectors for pollution, sufficient fixation and mechanical damages • Documentation and recording of the inspection carried out including any abnormalities

Maintenance
• Switch every single (all) detector in ALARM condition by using appropriate test equipment (RE7T) • Switch every single (all) detector in FAULT condition by unscrewing the detector from its base • Verify that ALARM/FAULT message is forwarded accordingly by checking if ALARM/FAULT notification is displayed on the control system/control board (e.g. train cab) • Check detectors for pollution, sufficient fixation and mechanical damages • Documentation and recording of the inspection carried out including any abnormalities

Revision
• All point detectors should be replaced by new ones after max. 8 years of service, depending on the ambient conditions and place of operation • It is recommended to replace the detectors altogether where possible • The detectors including base are non-reparable devices (no re-processing service offered)



Issued by
Fire Safety Application Center Austria

Siemens AG Österreich
BT EU ZE CPS FSAC

Automatic fire detector for Rail
DSWH10R-AT / DSWH12R-AT

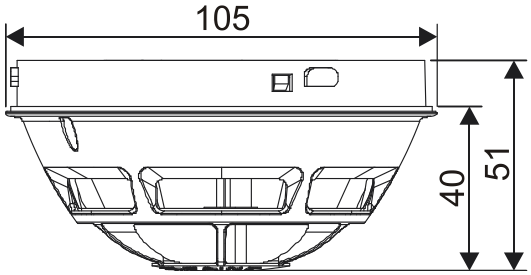
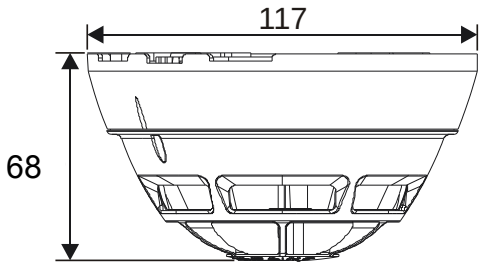
Technical data

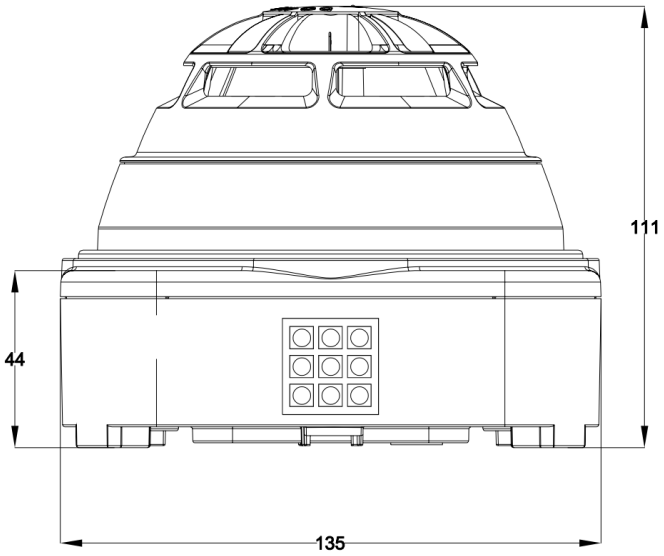
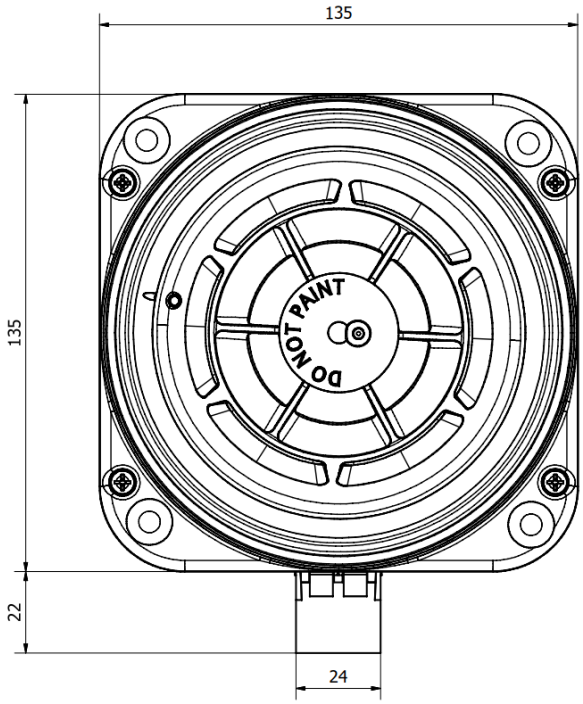
	DSWH024R-AT / DSWH110R-AT	HI110R-AT / HI112R-AT
Operating voltage (modulated)	DC 19…30 V / DC 70…140 V	DC 16…28 V
Operating current (quiescent)	10-11 mA / 3-3,5 mA	Max. 100µA
Max. number of external alarm indicators that can be connected	2	2
Operating temperature Rail specific approval	-25...+55 °C Temperature class OT4: -40…+70 °C	-10...+50 °C (HI110) -10...+50 °C (HI112, A2S) -10...+65 °C (HI112, B)
Storage temperature	-30 (-40)...+70 °C	-30...+70 °C
Air humidity (short-term moisture condensation permitted)	≤ 95 % rel.	≤ 96 % rel.
Communication protocol	Potential-free contacts	Potential-free contacts
Color	~RAL 9010 pure white	~RAL 9010 pure white
Weight	0.440 kg / 0.440 kg	0.130 kg / 0.130 kg
Protection category (IEC 60529)	IP40	IP40
Standards	EN 50121-3-2, 2006/2015, EN 50155, EN 61000-4-2/3/4/5/6; EN 60068-2-1; EN 45545-2;	305/2011/EU (CPR): EN 54-5 ; 2014/30/EU (EMC): EN 50130-4 / EN 61000-6-3 ; 2011/65/EU (RoHS): EN 50581
Approvals	EN50155, EMC, Mechanical Tests for Rail application	VdS: G212004 / G212015
Permissible wind speed	Max. 5 m/s	Max. 5 m/s

12 CE 0786	**HI110**	Siemens Switzerland Ltd, Gubelstrasse 22 CH-6300 Zug Technical data: see doc. **A6V10316298**
HI110 - Point type heat detector for use in fire detection and fire alarm systems installed in buildings.		
305/2011/EU (CPR): EN 54-5 ; 2014/30/EU (EMC): EN 50130-4 / EN 61000-6-3 ; 2011/65/EU (RoHS): EN 50581		
The declared performance and conformity can be seen in the Declaration of Performance (DoP) and the EU Declaration of Conformity (DoC), which is obtainable via the Customer Support center: Tel. +49 89 9221-8000 or http://siemens.com/bt/download		
DoP No.: 0786-CPR-21141; DoC No.: CED-HI110		

12 CE 0786	**HI112**	Siemens Switzerland Ltd, Gubelstrasse 22 CH-6300 Zug Technical data: see doc. **A6V10316298**
HI112 - Point type heat detector for use in fire detection and fire alarm systems installed in buildings.		
305/2011/EU (CPR): EN 54-5 ; 2014/30/EU (EMC): EN 50130-4 / EN 61000-6-3 ; 2011/65/EU (RoHS): EN 50581		
The declared performance and conformity can be seen in the Declaration of Performance (DoP) and the EU Declaration of Conformity (DoC), which is obtainable via the Customer Support center: Tel. +49 89 9221-8000 or http://siemens.com/bt/download		
DoP No.: 0786-CPR-21142; DoC No.: CED-HI112		

Dimensional drawings

HI110R-AT / HI112R-AT	HI110 / HI112 with base DB1R-AT
	

DSWH10 024R-AT / DSWH10 110R-AT / DSWH12 024R-AT / DSWH12 110R-AT	
	

Issued by
Fire Safety Application Center Austria

Siemens AG Österreich
Building Technologies
Control Products & Systems Zone East
Siemensstraße 90
AT-1210 Wien
Tel. +43 51707-0
www.siemens.com/buildingtechnologies

Document ID fsac_ds_dswhr-at_v7_en.docx
Edition 2020-10