

DSWOP 024R-AT / DSWOP 110R-AT

Automatic fire detector for Rail



Automatic smoke 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

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)
- Signal processing with detection algorithms
- Rail certified

Eco-friendly

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

Use

OP110 smoke detector



Smoke detector consisting of:

- Point detector with one heat sensor
- Detector dust cap to protect the point detector during the construction phase

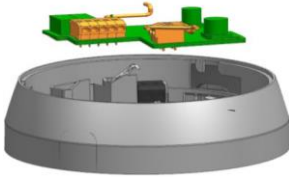
Function:

- Functions according to the scattered light principle with one sensor, optical forward scattering
- Opto-electronic measuring chamber which obstructs disruptive extraneous light but provides excellent detection of smoke particles
- Selectable detection behavior thanks to two parameter sets
 - Parameter set 1: 'Standard'
 - Parameter set 2: 'Sensitive'

Use:

- For detection of smoke-generating flaming fires and smoldering fires

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



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

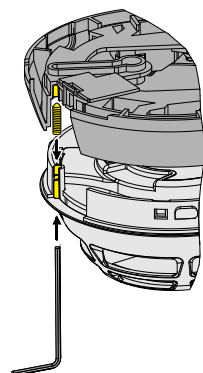
Type	Designation	Order no.	Weight [kg]
DSWOP 024R-AT	Detector Set Wet OP110, 24VDC	6500008237	0,397
DSWOP 110R-AT	Detector Set Wet OP110, 110VDC	6500008240	0,398
OP110R-AT	Smoke detector sensor		0,087
DB1R-AT	Detector base		0,071
DP024R-AT	Detector base print (PCB, 24V)		0,020
DP110R-AT	Detector base 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



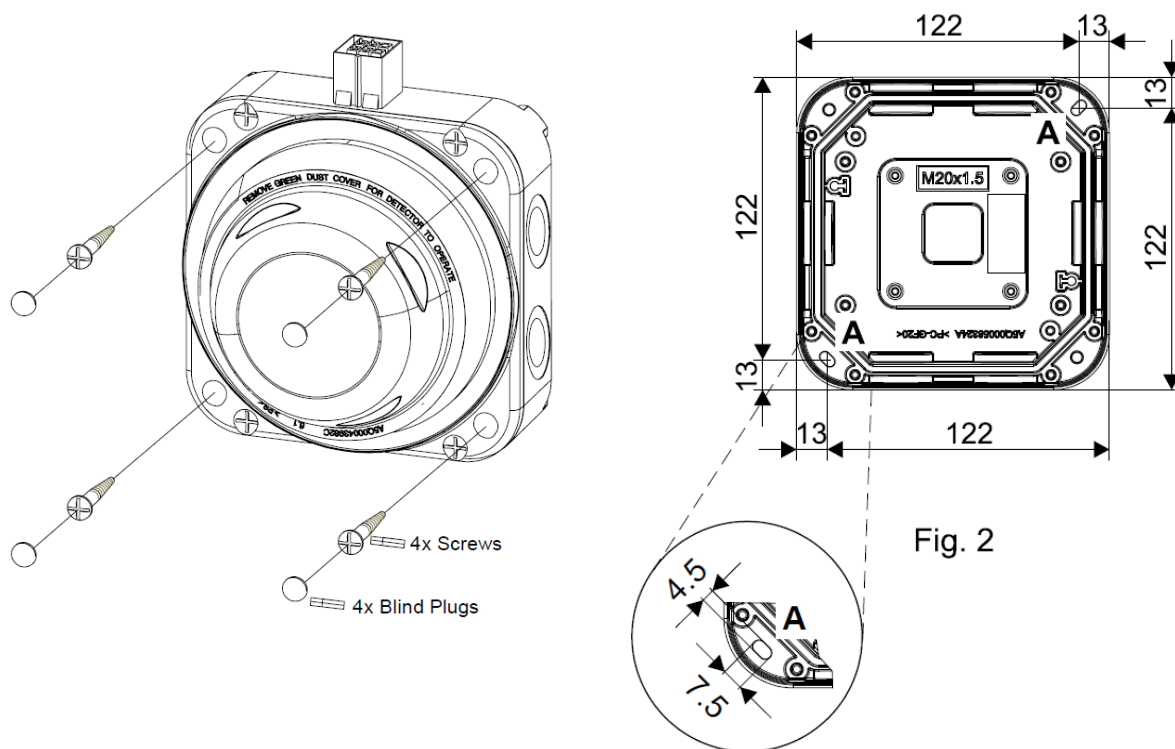
The device is considered an electronics device for disposal in terms of European Directive 2012/19/EU and may not be disposed of as domestic garbage.

- 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

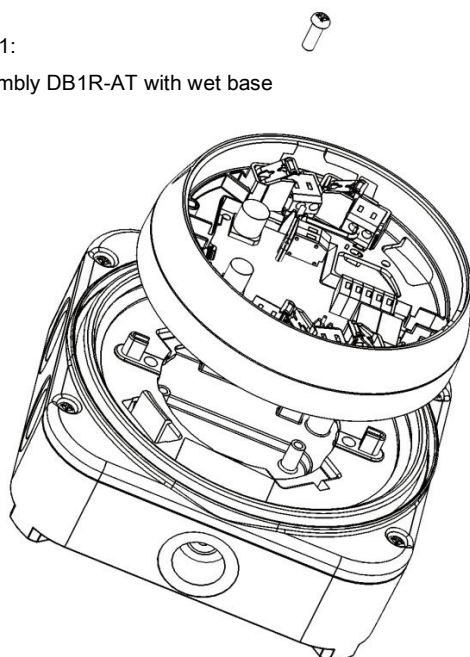
The 'base attachment wet BA721' is for surface-mounted feed lines in humid and cold environments. Mounting of the detector is achieved through 4 appropriate screws in the openings provided for fixation. The openings are sealed with blank plugs (see figure below).



Assembling

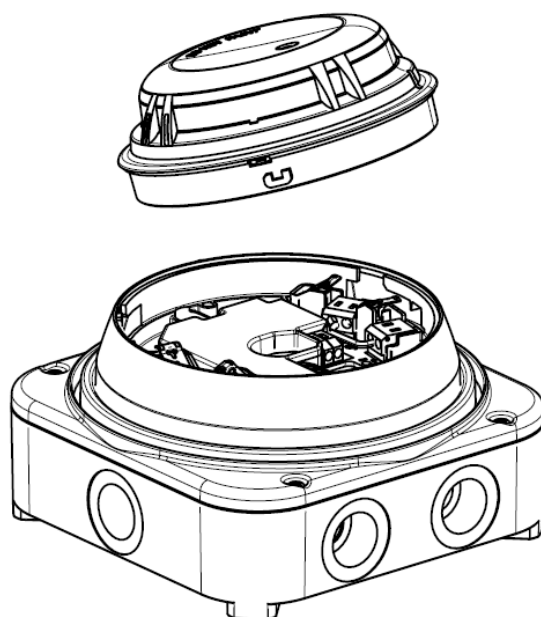
Step 1:

Assembly DB1R-AT with wet base



Step 2:

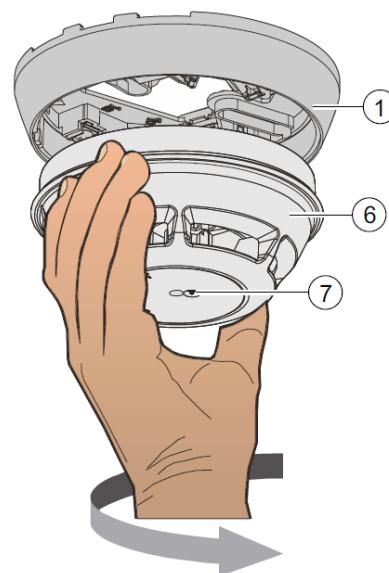
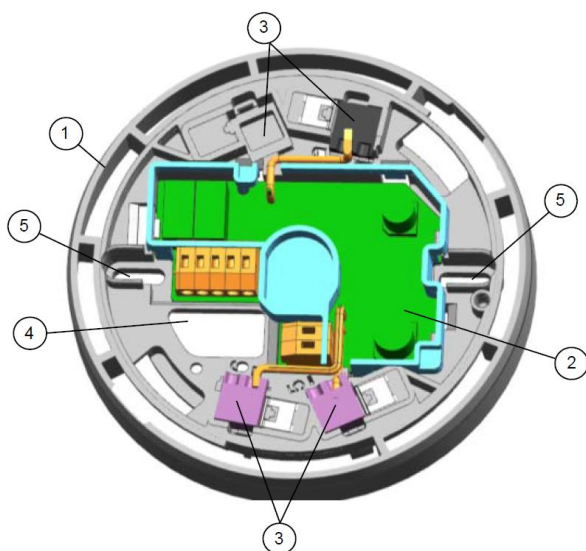
Complete assembly with sensor



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.



1 Detector base

2 Print and Cover

3 Connection terminals

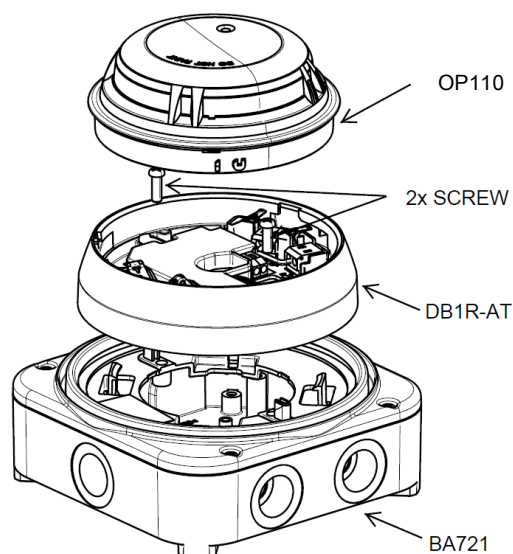
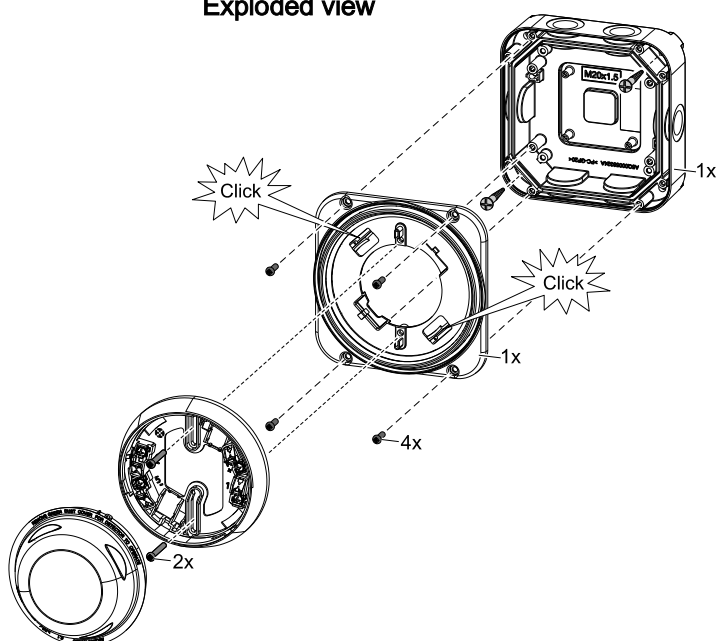
4 Opening for cable entry

5 Mounting slits

6 Point detector

7 Internal indicator

Exploded view



Interval	Type of check	Measures
Six-monthly	Inspection	<ul style="list-style-type: none">• Visual inspection• Check detector module and alarm transmission• Check fault forwarding• Check LED indicator at detector module
Annually	Inspection and maintenance	<ul style="list-style-type: none">• 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 detector tester RE6 with test gas REF8-S.

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 the following accessories:

- Detector tester RE6
- Test gas REF8-S

Collective operation (Stand-Alone operation)

Once an alarm for testing purpose is triggered on a point detector, the detector line must be re-started/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

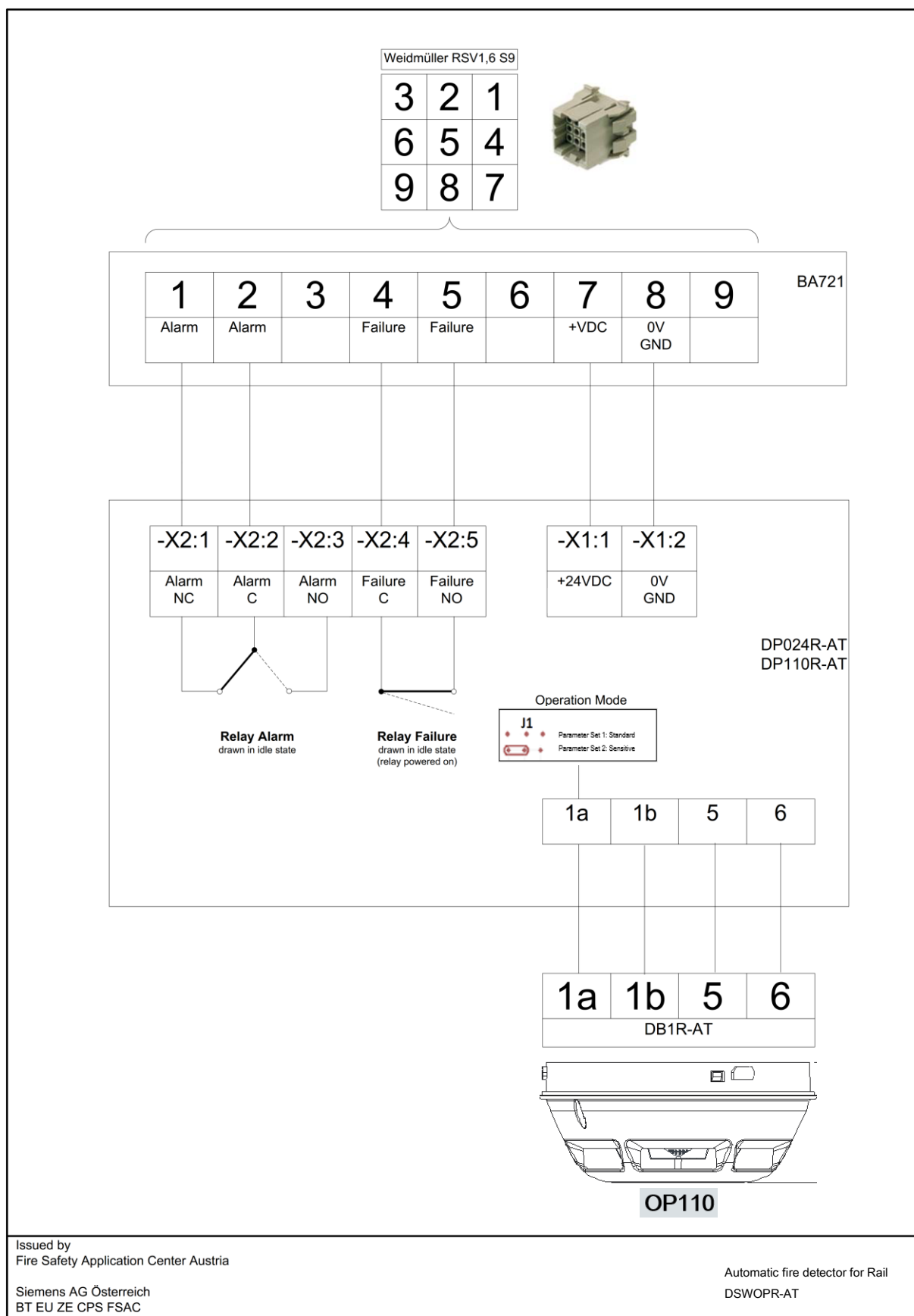
- Per car, switch at least one detector into ALARM condition by using appropriate test equipment (RE6, REF8-S)
- Per car, switch at least one detector into FAULT condition by unscrewing the detector from its base
- Verify that ALARM/FAULT message is forwarded accordingly by checking if ALARM/FAULT notification 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 (RE6, REF8-S)
- 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)

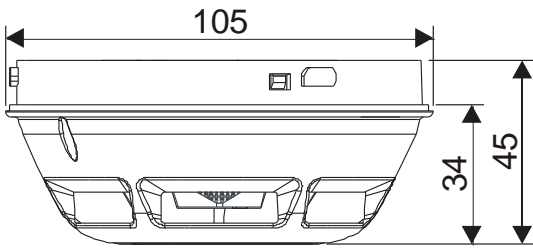
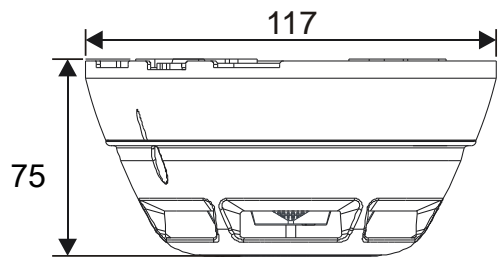


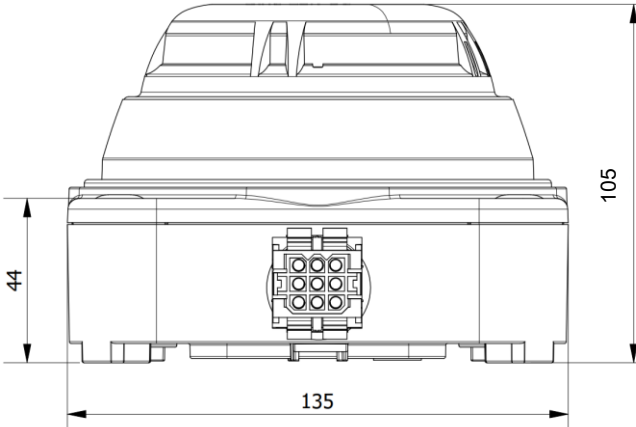
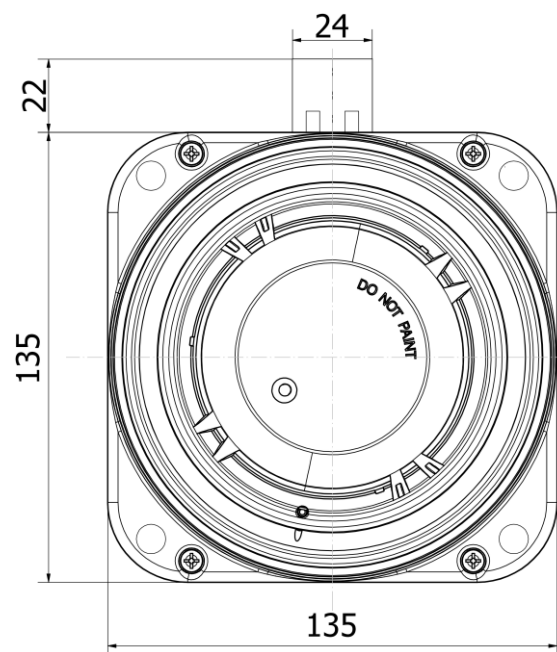
Technical data

	DSWOP 024R-AT / DSWOP 110R-AT	OP110R-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	-25...+55 °C	-10...+55 °C
Rail specific approval	Temperature class OT4: -40...+70 °C	
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	Collective/conventional
Color	~RAL 9010 pure white	~RAL 9010 pure white
Weight	0.397 kg / 0.398 kg	0.087 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 54-7 ; 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: G212033
Permissible wind speed	Max. 5 m/s	Max. 5 m/s

12  0786	OP110	Siemens Schweiz AG; Theilerstrasse 1a CH-6300 Zug Technical data: see doc. A6V10316298
OP110 - Point type smoke detector for use in fire detection and fire alarm systems installed in buildings.		
305/2011/EU (CPR): EN 54-7 ; 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 https://siemens.com/bt/download		
DoP No.: 0786-CPR-21161; DoC No.: CED-OP110		

Dimensional drawings

OP110R-AT	OP110R-AT with base DB1R-AT
 <p>Technical drawing showing the front view of the OP110R-AT light fixture. The width is 105. The mounting bracket height is 34, and the total height including the lens is 45.</p>	 <p>Technical drawing showing the front view of the OP110R-AT light fixture with the DB1R-AT base. The width is 117. The mounting bracket height is 75.</p>

DSWOP 024R-AT / DSWOP 110R-AT	
 <p>Technical drawing showing the front view of the DSWOP 024R-AT / DSWOP 110R-AT light fixture. The width is 135. The mounting bracket height is 44, and the total height including the lens is 105.</p>	 <p>Technical drawing showing the top view of the DSWOP 024R-AT / DSWOP 110R-AT light fixture. The width is 135. The mounting bracket height is 22. The distance between the mounting holes is 24. The text "DO NOT PAINT" is visible on the lens.</p>

Issued by
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