

Description

Fire dampers represent passive fire protection, designed with the help of compartmentalization to prevent the spread of toxic gases, smoke and fire. Standard fire dampers are designed and certified in accordance with EN 15650 and tested for EIS criteria according to EN 1366-2. Fire damper together with its installation form an inseparable part of fire resistivity rating. FDR-3G fire dampers are designed for the installations listed and described in their User Manual. By default, all fire dampers are supplied with a manual mechanism or actuator mechanism, optionally with a supply and communication unit.

The activation mechanisms are removable and are interchangeable, for example an actuator operated mechanism instead of a manually operated mechanism.

Highlights

- Lightweight construction
- Tightness class 3C as standard
- Low pressure drop
- Changeable mechanism
- Inspection opening built-in
- Great variety of installations rated up to EI120S
- Modulated actuator suitable for system balancing - possibility to open the blade at the desired angle.

Activation Types

Manually Operated Fire Dampers

By default, all manually operated fire dampers are supplied with manual control, optionally with micro switches and electromagnets. In case of fire, the fire damper is closed automatically. Depending on the version, the damper closes either after the melting of the thermal fuse or by means of remote activation through an electromagnet in impulse connection. After the closing of the damper blade, it is mechanically locked in the closed position and can only be opened manually. The actuating mechanism is activated when the temperature of the air in the duct reaches 74°C and the damper closes within 10 seconds after the melting of the fuse.

- H0

Fire damper with an activation mechanism with a cover, manual crank and with a spring return release mechanism activated by a fusible thermal link set to 74°C (on demand 100°C).

- H2

Fire damper with an activation mechanism H0 + open and closed indication with AC 230 V or AC/DC 24 V contact switches.

- H5-2

Fire damper with an activation mechanism H0 + an AC/DC 24 V electromagnetic release mechanism in the impulse connection (release takes place when the electromagnet is activated) + open and closed indication with AC 230 V or AC/DC 24 V contact switches.

- H6-2

Fire damper with an activation mechanism H0 + an AC 230 V electromagnetic release mechanism in the impulse connection (release takes place when the electromagnet is activated) + open and closed indication with AC 230 V or AC/DC 24 V contact switches.

Actuator Operated Fire Dampers

By default, all actuator operated fire dampers are supplied with an actuator with micro switches, optionally with a power and communication unit. A fire damper can be equipped with a spring return actuator can be closed with command from the building management system, or after the breaching of the thermoelectric fuse. Actuator operated fire dampers are standardly equipped with a thermoelectric fuse, that activates the closing of the damper after the reaching or exceeding of the ambient temperature of 72°C. The actuator power circuit is interrupted and its spring closes the damper blade within 20 seconds.

Belimo actuator available with on demand fuse 95 °C or 120 °C.

- B230T or G230T

Fire damper with an activation mechanism with a Belimo or Gruner spring return actuator (AC 230 V) with electro-thermal fuse 72°C and auxiliary switches.

- B24T or G24T

Fire damper with an activation mechanism with a Belimo or Gruner spring return actuator (AC/DC 24 V) with electro-thermal fuse 72°C and auxiliary switches.

- BST0 or GST0

Fire damper with an activation mechanism with a Belimo or Gruner spring return actuator (AC/DC 24 V) with an electro-thermal fuse 72°C and auxiliary switches, with a Belimo supply and communication unit BKN230-24 or Gruner supply and communication unit fs-UFC24-2 (other communication units on demand).

- B24T-W or G24T-W

Fire damper with an activation mechanism with a Belimo or Gruner spring return actuator (AC/DC 24 V) with an electro-thermal fuse 72°C and auxiliary switches, with provided cable connectors for the supply and communication unit (communication unit not part of the mechanism).

- B24T-SR or G24T-SR

Fire damper with an activation mechanism with a Belimo or Gruner spring return actuator (AC/DC 24 V) with electro-thermal fuse 72°C and auxiliary switches for Modulated dampers (possibility to open the blade at the desired angle). For fire dampers in the size DN ≥ 160 mm.

Design

Fire dampers have casings made from galvanized sheet metal. Blades from non-asbestos insulants have a rubber seal for cold smoke and an intumescent seal, that expands in a fire situation.

Material Composition

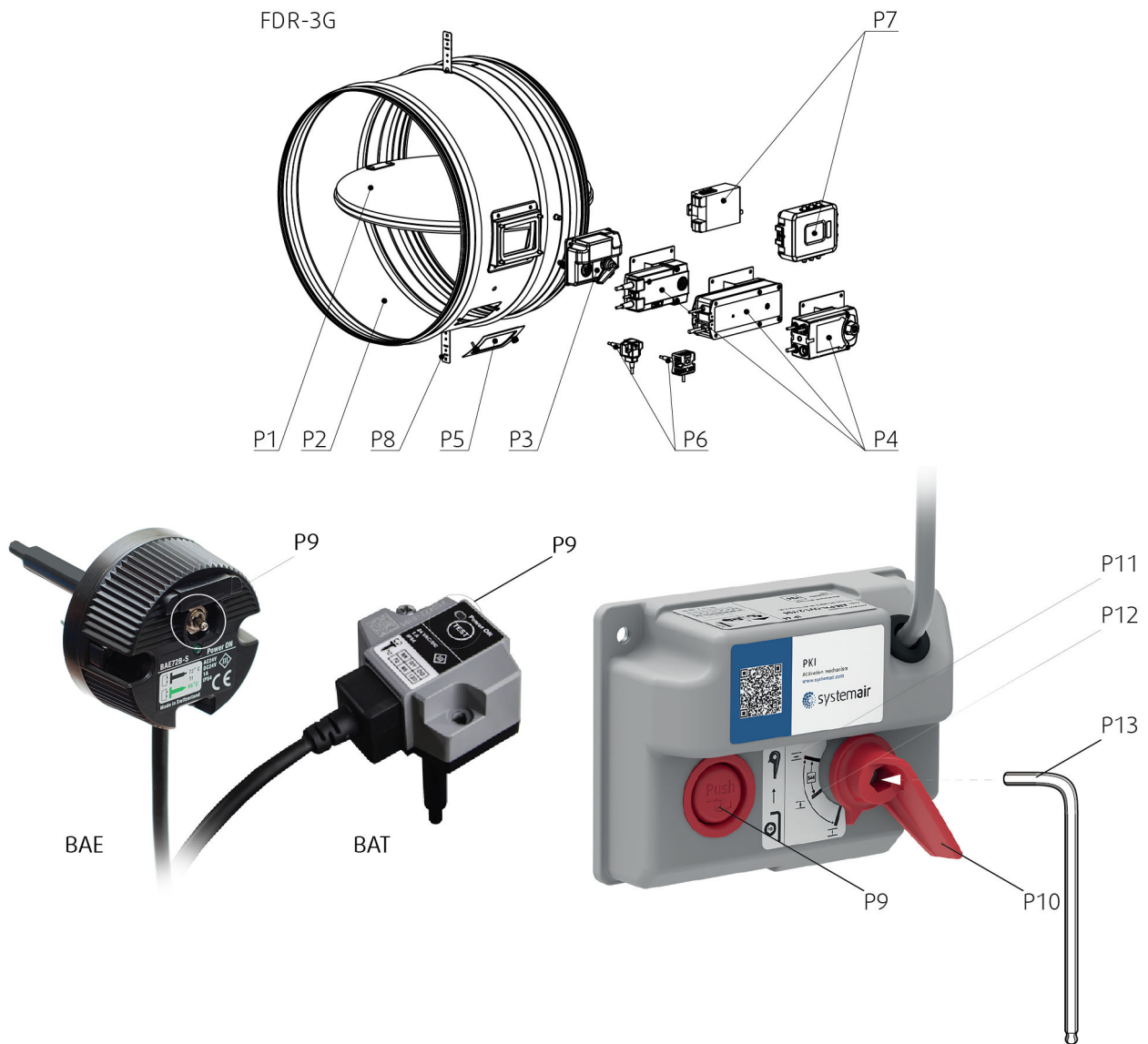
The product contains galvanized sheet metal, calcium silicate board, fireproof carbon fiberglass, polyurethane foam and ethylene-propylene rubber. These are processed in accordance with local regulations. The product contains no hazardous substances, except for the solder in the thermofuse, which contains a milligram of lead.

List of Accessories

Detailed information about accessories for FDR-3G is available in SystemairDESIGN under Fire Damper Accessories.

- AM-FD: Activation Mechanisms
- CBR-FD: Cover Boards
- IPOR-FD: Insulation Cover Plates

Technical parameters



Legend:

- P1** Blade
- P2** Casing
- P3** Manually operated activation mechanism (H0;H...)
- P4** Actuator operated activation mechanism (B...;G...)
- P5** Inspection lid
- P6** Thermoelectric fuse (BAT72;TA-72)
- P7** Supply and communication unit (BKN230-24;FS-UFC24-2)
- P8** Bendable hanger
- P9** Release and test button
- P10** Crank
- P11** Open position
- P12** Closed position

-
P13 Hexagon bent wrench No.10 (not part of delivery)

Technical Parameters

Durability test

50 cycles/manually operated activation mechanism – with no change of the required properties

10000 + 100 + 100 cycles/actuator operated activation mechanism – with no change of the required properties

Fire testing pressure

Underpressure up to 300 Pa

Safety position

Closed. (In fire scenario the damper closes via spring in actuator or spring in manual mechanism)

Airflow direction

Both directions

Allowed air velocity

Damper can still operate at max. 12 m/s. Air without any mechanical or chemical contamination

Side with fire protection

Depending on installation classification: From both sides (i <-> o)

Repeated opening

Suitable for daily check procedure. It is not possible to operate the device after reaching Activation temperature.

Activation Temperature

Manually operated: 74 °C as standard by means of a spring after the melting of the thermal fuse.

Actuator operated: 72 °C as standard (95 °C or 120 °C on request with Belimo actuator) by means of the spring after current interruption in the electro-thermal fuse.

Operational temperature

Minimum: 0 °C

Maximum: 60 °C for 74 °C and 72 °C thermal fuse

Maximum: 85 °C for 95 °C and 100 °C thermal fuse

Maximum 105 °C for 120 °C thermal fuse

Environment suitability

Protected against weather disruptions, with temperature above 0 °C, up to 95% Rha, (3K5 according to EN 60721-3-3)

Open/Closed indication

Manually operated microswitches - Activation types H2 up to H6-2

Actuator operated built-in microswitches - Activation types B230T/G230T up to B24T-SR/G24T-SR

Closing/Opening time

Manually operated < 10 s, actuator operated < 20 s

Maintenance

Not required. Dry cleaning if demanded by law in the country in which the dampers are installed.

Revisions

Determined by law in the country in which the fire dampers are installed but at least every 12 months.

Allowed pressure

1200 Pa

Blade tightness (STN EN 1751)

Class 3 as standard

Tightness of the housing (STN EN 1751)

Class C as standard

Conformity with EC directives

2006/42/EC Machinery Directive

2014/35/EU Low Voltage Directive

2014/30/EU Electromagnetic Compatibility Directive

Driving actuator types

Belimo: BLF230-T, BLF24-T, BFL24-SR-T, BF230-T, BF24-T, BF24-SR-T, BFN230-T, BFN24-T, BFN24-T, BFL230-T, BFL24-T, BFL24-SR-T (also with connection possibilities with acronyms ST, W)

Gruner: 360TA-230-12-S2, 360CTA-024-12-S2, 360TA-024-12-S2, 340TA-230D-03-S2, 340TA-024D-03-S2, 340CTA-024D-03-S2, 340TA-230-05-S2, 340TA-024-05-S2, 340CTA-024-05-S2 (also with connection possibilities with acronyms ST, W)

Transport and Storage

Dry indoor conditions with a temperature range of -20 °C to +50 °C

Assessed Performance - FDR-3G

19 CE 1396

Systemair Production a.s.

Hlavná 371, 900 43 Kalinkovo, Slovakia

1396-CPR-0162, FDR-3G

(valid for subgroups: ...EX, ...KS, ...OF)

EN 15650 : 2010

Circular fire dampers

Nominal activation conditions/sensitivity - **Pass**

sensing element load bearing capacity

sensing element response temperature

Response delay (response time) - **Pass**

closure time

Operational reliability - **Pass**

motorized cycle = 10.200 cycles

manual cycle = 50 cycles

modulated = 20.200 cycles

Fire resistance:

Resistivity depending on installation method and situation

integrity **E**

maintenance of the cross section (under E)

mechanical stability (under E)

cross section (under E)

insulation **I**

smoke leakage **S**

Durability of response delay - **Pass**

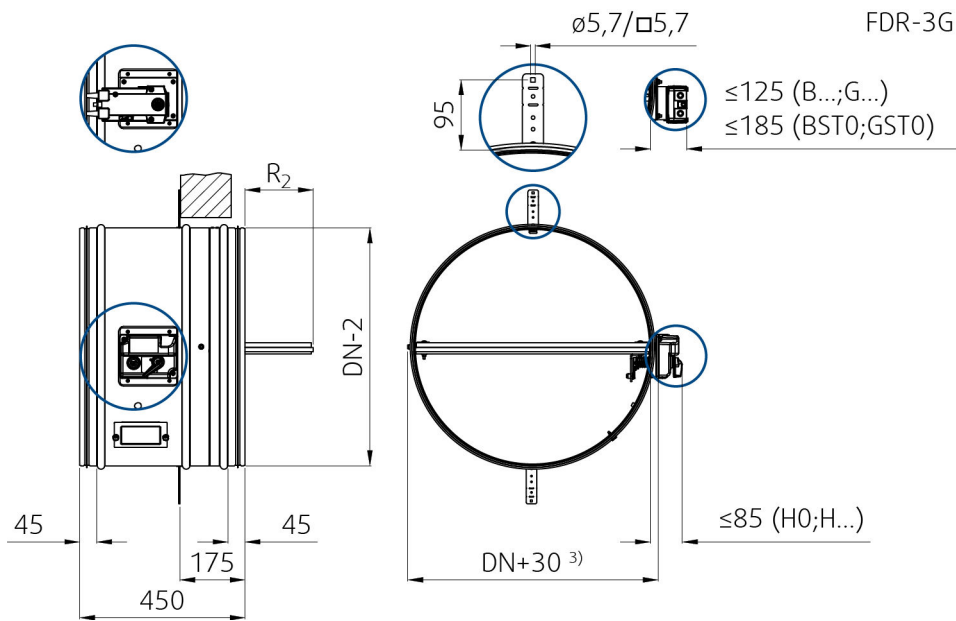
sensing element response temperature and load bearing capacity

Durability of operational reliability - **Pass**

open and closing cycle

Dimensions

Dimensions



Dimensions	Value (mm)
DN	100
R1	-300
R2	-67

Documents

[1396_CPR_0162 \(en-GB\)](#)

[DeclarationOfPerformance_FDR-3G_C_EN \(en-GB\)](#)

[Form_OperatingJournal_FireDampers_EN_201908 \(en-GB\)](#)

[HandBook_FDR_3G_\(EN\)_2020-10-23 \(en-GB\)](#)

Associated products

[FDS \(Old\)](#)

{product_description_short}

[FDR-3G...EX](#)



Atex Fire Damper FDR-3G

[PKI-C](#)



Cartridge Fire Damper

[FDR-3G...OF](#)



Overflow Fire Damper FDR-3G