

AM-PKI

Activation Mechanism

Data Sheet



Table of Contents

Description	1
Highlights	1
Product Types	2
Design	4
Material Composition	4
Product Parts	4
Manually Operated Activation Mechanism	4
Dimensions	6
Ordering Code	7
Compatibility Codes	8
Technical Parameters	19
Installation, Maintenance & Operation	20
Transport & Storage	20
Supplement	20
Related Products	21



Good to know

Current information on all fire safety products are available at www.systemair.com/FSPoverview



Description

An activation mechanism for fire damper PKIR and PKIS is a crucial part of the damper. Its purpose is to drive the fire damper's blade between the open and closed positions. In case of emergency, AM-PKI will close the damper blade and remain closed to fulfill classification parameters of the fire damper. Activation mechanism types for PKIR and PKIS dampers are interchangeable with some degree of compatibility.

The AM-PKI activation mechanism is suitable for PKIR and PKIS fire dampers.

Manually Operated Activation Mechanism

This mechanism can only be opened manually. In case of fire, the fire damper is closed automatically. Depending on the version, the mechanism closes either after melting of the thermal fuse or by means of remote activation through an electromagnet in the impulse connection. After the closing of the damper blade, it is mechanically locked in the closed position. The actuating mechanism is activated when the temperature of the air in the duct reaches 72 °C and the damper closes within 10 seconds after melting of the fuse. Its compatibility code starts with a letter.

Actuator Operated Activation Mechanism

This mechanism is fitted with a spring return actuator and can be opened by supplying power or manually with a supplied crank. Actuator controlled mechanism is standardly equipped with an electro-thermal fuse. Upon request, it can be supplied with different communication and supply units. The mechanism closes the damper after the command from the building management system, or after breaching of the electro-thermal fuse. The fuse is breached after reaching or exceeding the ambient temperature of 72 °C and its spring closes the damper blade within 20 seconds. Its compatibility code starts with a number.

Highlights

- Can be used as an inspection opening
- Manual mechanism provided with cable
- Manual mechanism with IP 44 rating
- Switching between different types of actuators and communication units

Product Types

Manually Operated Activation Mechanism

- ZV
Activation mechanism with a cover, manual crank and with a spring return release mechanism activated by a fusible thermal link set to 72 °C (100 °C upon request).
- DV1-2
Activation mechanism ZV + open and closed indication with AC 230 V or AC/DC 24 V contact switches.
- DV5-2
Activation mechanism ZV + 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.
- DV6-2
Activation mechanism ZV + 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 Activation Mechanism

- DV7-T or G7-T
Activation mechanism with a Belimo (DV) or Gruner (G) spring return actuator (AC 230 V) with an electro-thermal fuse 72 °C and auxiliary switches.
- DV9-T or G9-T
Activation mechanism with a Belimo (DV) or Gruner (G) spring return actuator (AC/DC 24 V) with an electro-thermal fuse 72 °C and auxiliary switches.
- DV9-T-ST or G9-T-ST
Activation mechanism with a Belimo (DV) or Gruner (G) spring return actuator (AC/DC 24 V) with an electro-thermal fuse 72 °C and auxiliary switches, with a Belimo BKN230-24 supply and communication unit or Gruner fs-UFC24-2 supply and communication unit (other communication units upon request).
- DV9-T-W or G9-T-W
Activation mechanism with a Belimo (DV) or Gruner (G) 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).

Tab. 1: Composition of the activation mechanisms according to the ordering codes

Part of Activation Mechanism	Part Type	Current Type	Voltage (V)	Type of Activation Mechanism (Code)															
				Manually Operated				Actuator Operated											
				ZV	DV1-2	DV5-2	DV6-2	DV7-T	DV9-T	DV9-T-ST	DV9-T-W	G7-T	G9-T	G9-T-ST	G9-T-W				
Indication Open/Closed	Microswitch	AC, AC/DC	230, 24		•	•	•												
Electromagnet	Impulse Connection	AC/DC	24			•													
		AC	230				•												
Belimo BFL or BFN or BF Actuator	230-T	AC	230						•										
	24-T	AC/DC	24							•									
	24-T-ST	AC/DC	24								•	•							
Gruner Actuator	x=230	AC	230											•					
340TA-xD-03-S2/8F12	x=24	AC/DC	24																
or 340TA-x-05-S2/8F12																	•	•	•
or 360TA-x-12-S2/8F12																			

Legend

DC	Direct current
AC	Alternating current
230	Actuator 230 V
24	Actuator 24 V

T	Electro-thermal fuse
ST	Supply and communication unit
W	Cables for the supply and communication unit

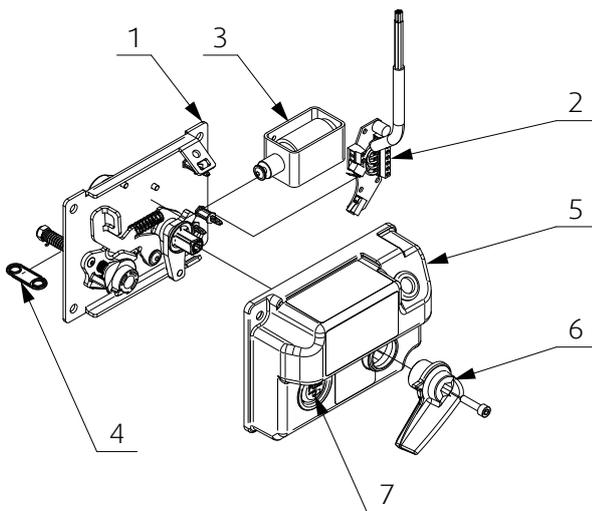
Design

Material Composition

The product contains galvanized sheet metal, fireproof carbon fiberglass 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.

Product Parts

Manually Operated Activation Mechanism



Legend

1	Mechanism base with internals
2	Circuit board with end position switches (included only in DV1-2; DV5-2; DV6-2)
3	Electromagnet in impulse connection (included only in DV5-2; DV6-2)
4	Thermal link (standard 72 °C)
5	Manual mechanism plastic cover
6	Red lever for opening damper blade
7	Red release knob for proper damper function check

Fig. 1: Components of a manually operated activation mechanism
– ZV; DV1-2; DV5-2; DV6-2

Actuator Operated Activation Mechanism

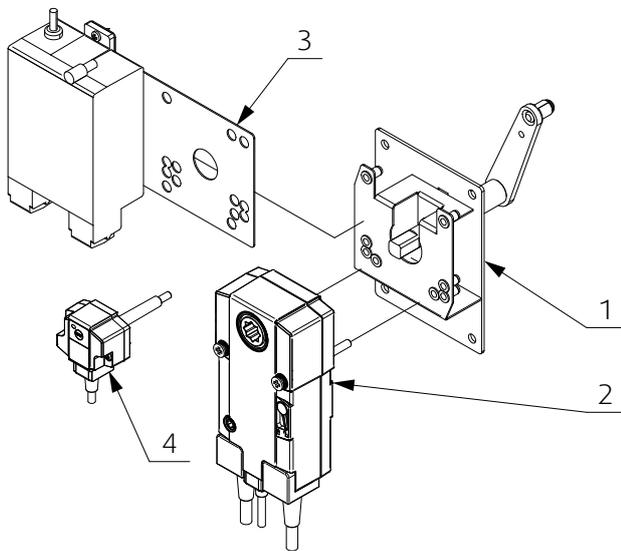


Fig. 2: Components of the Belimo actuator operated activation mechanism - DV7-T; DV9-T; DV9-T-W; DV9-T-ST

Legend

1	Mechanism base
2	Belimo actuator (different type according to compatibility code)
3	Base with communication unit (standardly BKN230-24) (included only in DV9-T-ST)
4	Electro-thermal fuse fuse (standard BAE, 72 °C)

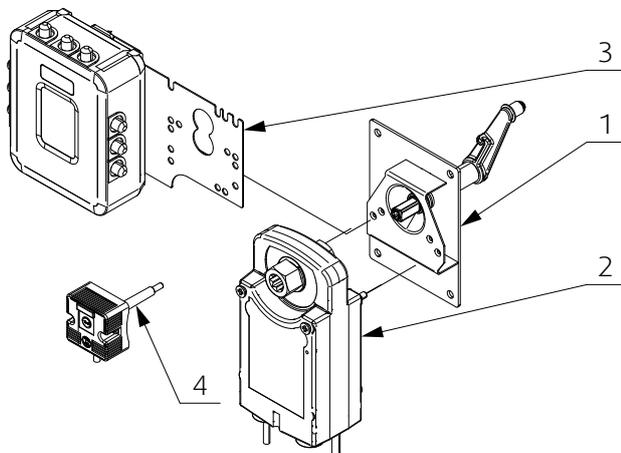


Fig. 3: Components of the Gruner actuator operated activation mechanism - G7-T; G9-T; G9-T-W; G9-T-ST

Legend

1	Mechanism base
2	Gruner actuator (different type according compatibility code)
3	Base with communication unit (standardly fs-UFC24-2) (included only in G9-T-ST)
4	Electro-thermal fuse (standard TAE, 72 °C)

Dimensions

Manually Operated Activation Mechanism

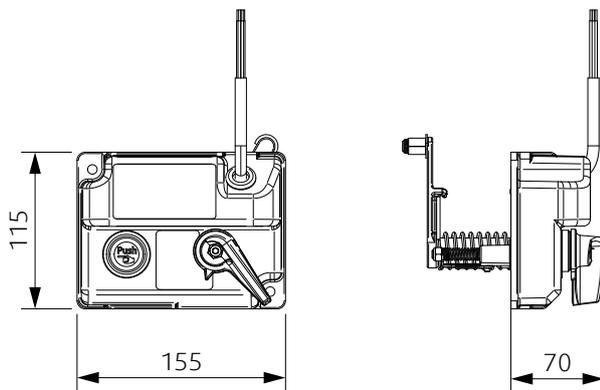


Fig. 4: Dimensions of the manually operated activation mechanism

Actuator Operated Activation Mechanism

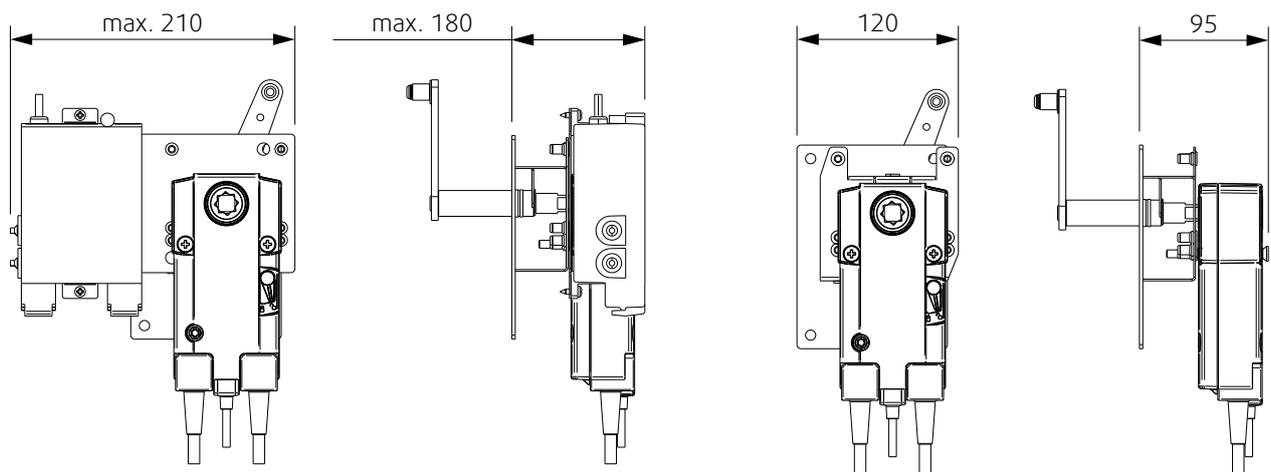


Fig. 5: Dimensions of the Belimo actuator mechanism with (left) and without (right) communication unit

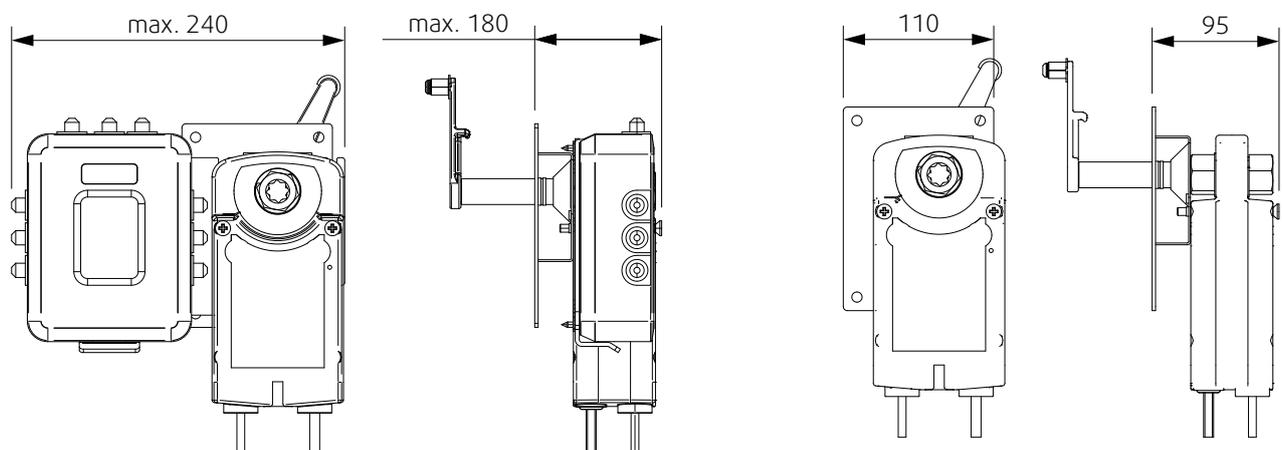


Fig. 6: Dimensions of the Gruner actuator mechanism with (left) and without (right) communication unit

Ordering Code

Type of activation	ZV, DV1-2 up to DV9-T-ST	AM-PKI- □ □
Compatibility code *	S44 up to J94; 3R1 up to 3SF	

NOTE: * Choose the compatibility code for your activation type and fire damper size (Tab. 2 ... Tab. 7)

Example of the Ordering Code

AM-PKI-DV5-2-S44

Activation mechanism, manually operated with a 24 V AC electromagnetic release in impulse connection (release takes place when the electromagnet is activated) plus end switches, indicating the damper's closed and open position. Suitable for PKIS3G sizes from 100 × 100 up to 800 × 180 mm and PKIR3G sizes from 100 up to 225 mm.



Check your code

Use AM-PKI Selector in Systemair DESIGN for ordering.

Compatibility Codes

The compatibility code describes the strength as well as the differences between mechanism construction. To complete the ordering code, choose the compatibility code for your activation type and fire damper size in the following tables.

IMPORTANT:

Make sure you look for the compatibility code in the desired mechanism type table.

Tab. 2: Compatibility code for the PKIR3G circular fire damper with all activation types

PKIR3G		DN (mm)																				
		100	125	140	150	160	180	200	225	250	280	315	355	400	450	500	560	630	710	800	850	900
Activation Types	ZV DV1-2 DV5-2 DV6-2	S44						S94					B94				J94					
	DV7-T DV9-T	3L1						3L2		3N2				3F4								
	DV7-T-W DV9-T-W DV7-T-ST DV9-T-ST	3S1		3S2				3S3		3SN				3SF								
	G7-T G9-T	3L1						3L2		3N5		3NX		3F4								
	G7-T-W G9-T-W G7-T-ST G9-T-ST	3S1		3S2				3S3		3S5		3SX		3SF								

Tab. 3: (part 1/2) Compatibility code for the PKIS3G rectangular fire damper, manually operated activation mechanisms

PKIS3G		Activation Types ZV; DV1-2; DV5-2; DV6-2																		
		W (mm)																		
		100	150	200	250	300	315	350	355	400	450	500	550	560	600	630	650	700	710	750
H (mm)	100	S44																		
	150																			
	175																			
	180																			
	200	S94																		
	250																			
	300	Y94																		
	315																			
	350																			
	355																			
	400																			
	450																			
	500																			
	550																			
	560																			
	600																			
	630	B94																		
	650																			
	700																			
	710																			
750																				
800																				
850	S24																			
900																				
950																				
1000																				

Tab. 3: (part 2/2) Compatibility code for the PKIS3G rectangular fire damper, manually operated activation mechanisms

PKIS3G		Activation Types ZV; DV1-2; DV5-2; DV6-2																					
		W (mm)																					
		850	900	950	1000	1050	1100	1120	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600					
H (mm)	100	Y44									X												
	150										X							X		X		X	
	175										X							X		X		X	
	180										X							X		X		X	
	200	B24									X		X		X		X						
	250										X		X		X		X						
	300										X		X		X		X						
	315										X		X		X		X						
	350	B94									X		X		X		X						
	355										X		X		X		X						
	400										X		X		X		X						
	450										X		X		X		X						
	500	S24									X		X		X		X						
	550										X		X		X		X						
	560										X		X		X		X						
	600										X		X		X		X						
	630										X		X		X		X						
	650										X		X		X		X						
	700										X		X		X		X						
	710										X		X		X		X						
750										X		X		X		X							
800										X		X		X		X							
850										X		X		X		X							
900										X		X		X		X							
950										X		X		X		X							
1000										X		X		X		X							

Tab. 4: (part 1/2) Compatibility code for the PKIS3G rectangular fire damper with Belimo actuator operated activation mechanisms

PKIS3G		Activation Types DV7-T; DV9-T																																		
		W (mm)																																		
		100	150	200	250	300	315	350	355	400	450	500	550	560	600	630	650	700	710	750	800															
H (mm)	100	3L1																																		
	150																																			
	175																																			
	180	3L2																																		
	200																																			
	250																																			
	300																																			
	315																																			
	350																																			
	355																																			
	400																																			
	450																																			
	500																																			
	550																																			
	560																																			
	600	3N2																																		
	630																																			
	650																																			
	700																																			
	710																																			
750																																				
800	2N2																																			
850																																				
900																			2F4																	
950																																				
1000																																				

Tab. 4: (part 2/2) Compatibility code for the PKIS3G rectangular fire damper with Belimo actuator operated activation mechanisms

PKIS3G		Activation Types DV7-T; DV9-T																	
		W (mm)																	
		850	900	950	1000	1050	1100	1120	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600	
H (mm)	100	3L1								X									
	150	3L1								X									
	175	3L1								X									
	180	3L1								X									
	200	3L2								2L1						X			
	250	3L2								2L1						X			
	300	3L2								2L1						X			
	315	3L2								2L1						X			
	350	3L2								2L1						X			
	355	3L2								2L1						X			
	400	3L2								2N1						X			
	450	3N2								2N2									
	500	3N2								2N2									
	550	3N2								2N2									
	560	3N2								2N2									
	600	3N2								2F4									
	630	3N2								2F4									
	650	3N2								2F4									
	700	3N2								2F4									
	710	3N2								2F4									
750	3N2								2F4										
800	3N2								2F4										
850	3N2								2F4										
900	3N2								2F4										
950	3N2								2F4										
1000	3N2								2F4										

Tab. 5: (part 1/2) Compatibility code for the PKIS3G rectangular fire damper with Belimo actuator operated activation mechanisms plus preparation for communication unit or plus the communication unit itself

PKIS3G		Activation Types DV7-T-W; DV9-T-W; DV7-T-ST; DV9-T-ST																	
		W (mm)																	
		100	150	200	250	300	315	350	355	400	450	500	550	560	600	630	650	700	710
H (mm)	100	3S1																	
	150																		
	175	3S2																	
	180																		
	200	3S3																	
	250																		
	300	3SN																	
	315																		
	350	2S3																	
	355																		
	400	2SF																	
	450																		
	500																		
	550																		
	560																		
	600																		
	630																		
	650																		
	700																		
	710																		
750																			
800																			
850																			
900																			
950																			
1000																			

Tab. 5: (part 2/2) Compatibility code for the PKIS3G rectangular fire damper with Belimo actuator operated activation mechanisms plus preparation for communication unit or plus the communication unit itself

PKIS3G		Activation Types DV7-T-W; DV9-T-W; DV7-T-ST; DV9-T-ST																							
		W (mm)																							
		850	900	950	1000	1050	1100	1120	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600							
H (mm)	100	3S1								X															
	150	3S1																							
	175	3S2								X															
	180																	X							
	200									2SL															
	250																	3S2							
	300	3S2								X															
	315																	3S2							
	350	3S3								X															
	355																	3S3							
	400	3SN								2S2															
	450																	2S3							
	500									3SN															
	550																	3SN							
	560									3SN															
	600																	3SN							
	630									3SN															
	650																	3SN							
	700									3SN															
	710																	3SN							
750	3SN								2SF																
800																	3SN								2SF
850	3SN								2SF																
900																	3SN								2SF
950	3SN								2SF																
1000																	3SN								2SF

Tab. 6: (part 1/2) Compatibility code for the PKIS3G rectangular fire damper with Gruner actuator operated activation mechanisms

PKIS3G		Activation Types G7-T; G9-T																	
		W (mm)																	
		100	150	200	250	300	315	350	355	400	450	500	550	560	600	630	650	700	710
H (mm)	100	3L1																	
	150																		
	175																		
	180	3L2																	
	200																		
	250																		
	300																		
	315																		
	350																		
	355																		
	400																		
	450																		
	500																		
	550																		
	560																		
	600	3N5																	
	630																		
	650																		
	700																		
	710																		
750	3NX																		
800																			
850	2N5										2FX								
900																			
950																			
1000																			

Tab. 6: (part 2/2) Compatibility code for the PKIS3G rectangular fire damper with Gruner actuator operated activation mechanisms

PKIS3G		Activation Types G7-T; G9-T																								
		W (mm)																								
		850	900	950	1000	1050	1100	1120	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600								
H (mm)	100	3L1									X															
	150	3L1																								
	175	3L1																								
	180	3L2									X															
	200																	2L1							X	
	250																	2L1								
	300										3L2							X								
	315										3L2															
	350										3L2							X								
	355										3L2															
	400	3N5									2N1															
	450										3N5									2N5						
	500	3N5									2N5															
	550	3NX									2FX															
	560																	3NX								
	600																	3NX								
	630																	3NX								
	650																	3NX								
	700	3NX									2FX															
	710	3NX									2FX															
750	3NX									2FX																
800	3NX									2FX																
850	3NX									2FX																
900	3NX									2FX																
950	3NX									2FX																
1000	3NX									2FX																

Tab. 7: (part 1/2) Compatibility code for the PKIS3G rectangular fire damper with Gruner actuator operated activation mechanisms plus preparation for communication unit or plus the communication unit itself

PKIS3G		Activation Types G7-T-W; G9-T-W; G7-T-ST; G9-T-ST																	
		W (mm)																	
		100	150	200	250	300	315	350	355	400	450	500	550	560	600	630	650	700	710
H (mm)	100	3S1																	
	150																		
	175	3S2																	
	180																		
	200																		
	250																		
	300																		
	315	3S3																	
	350																		
	355																		
	400																		
	450																		
	500																		
	550																		
	560																		
	600																		
	630																		
	650																		
	700																		
	710																		
750																			
800	3SX																		
850	2S5						2SX												
900	2SX																		
950																			
1000																			

Tab. 7: (part 2/2) Compatibility code for the PKIS3G rectangular fire damper with Gruner actuator operated activation mechanisms plus preparation for communication unit or plus the communication unit itself

PKIS3G		Activation Types G7-T-W; G9-T-W; G7-T-ST; G9-T-ST																							
		W (mm)																							
		850	900	950	1000	1050	1100	1120	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600							
H (mm)	100	3S1								X															
	150	3S1																							
	175	3S2								X															
	180																								
	200																								
	250																	2SL							
	300	3S2								X															
	315	3S2								X															
	350																								
	355	3S3								X															
	400	3S3								2S2				X											
	450	3S5								2S5															
	500									3S5								2S5							
	550									3S5								2S5							
	560									3S5								2S5							
	600	3SX								2SX															
	630																								
	650																								
	700																								
	710	3SX								2SX															
750	3SX								2SX																
800																									
850																									
900																									
950	3SX								2SX																
1000	3SX								2SX																

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
Activation Temperature	Manually operated: 72 °C as standard (100 °C upon request) by means of a spring after the melting of the thermofuse
	Actuator operated: 72 °C as standard (95 °C or 120 °C upon request) by means of a spring after current interruption in the electro-thermal fuse
Ambient Temperature	Maximum of 60 °C for 72 °C thermofuse, maximum 85 °C for 100 °C thermofuse, maximum 105 °C for 120 °C thermofuse
Repeated Opening	It is possible to open the device in cold conditions
Closing Time	Manually operated < 10 s, actuator operated < 20 s
Indicator Closed/Open	Manually operated 230 V microswitches - versions DV1-2 up to DV6-2
	Actuator operated built-in microswitches - version DV7-T/G7-T up to DV9-T-ST/G9-T-ST
Environment Suitability	Only indoor environment (3K5 according to EN 60721-3-3)
Inspection Possibility	After removing the activation mechanism, or by opening the inspection lid
Maintenance	Not required/cleaning with a dry cloth if demanded by law in the country in which the fire dampers are installed
Conformity with EC Directives	2006/42/ES Machinery Directive
	2006/95/ES Low Voltage Directive
	2004/108/ES Electromagnetic Compatibility Directive

Installation, Maintenance & Operation

Information about installation, maintenance and operation is available in the "UserManual_AM-PKI" document or follow the instruction for PKI fire dampers on Systemair DESIGN.



UserManual_AM-PKI



Systemair DESIGN

Transport & Storage

Dry indoor conditions with a temperature range of -40 °C to +40 °C.

Supplement

Any deviations from the technical specifications contained herein and the terms should be discussed with the manufacturer. We reserve the right to make any changes to the product without prior notice, provided that these changes do not affect the quality of the product and the required parameters.

Current information on all fire safety products is available at www.systemair.com/FSPoverview

Current information on all products is available at www.systemair.com

Related Products

PKIR3G, PKIS3G, PKIS3GA, PKIS-EI90S and PKIS-EI120S

Fire Dampers

Product information is available within the "DataSheet_PKIR_PKIS" technical documentation and at Systemair DESIGN.



