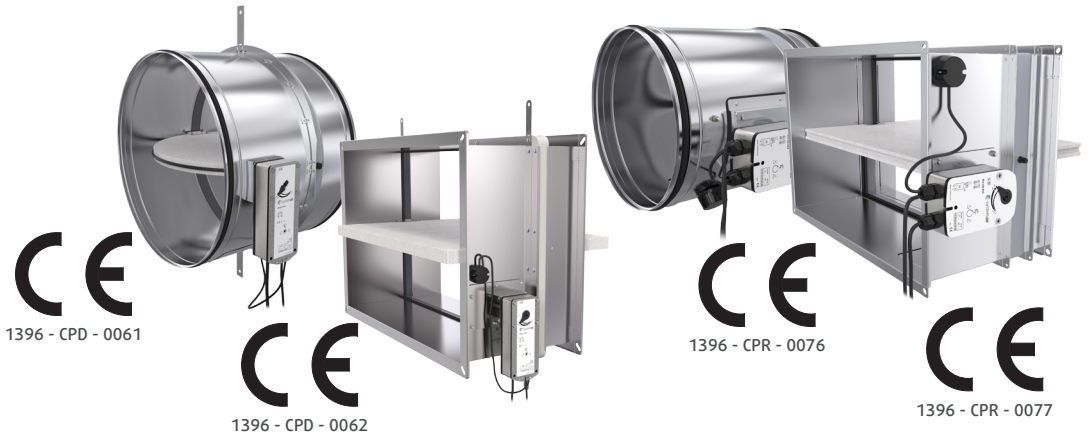
PKIR, PKIS, PKIR3G, PKIS3G and PKIS3GA

Systemair Fire Dampers

Fire resistance EI60S, EI90S and EI120S



1396 - CPD - 0061

1396 - CPD - 0062

1396 - CPR - 0076

1396 - CPR - 0077

Ordering codes

PKIR- □□□

Fire resistance	3G[1] or EI60S, EI90S, EI120S
Dimensions	øDN
Type of activation	ZV, DV1 up to DV9-T-SR

PKIS- □□□

Fire resistance	3G[1], 3GA[2] or EI90S, EI120S
Dimensions	W × H
Type of activation	ZV, DV1 up to DV9-T-SR

NOTES:

1. 3G = fire dampers of third generation (dimensions DN ≤ ø 400 mm, *W* ≤ 800 mm and *H* ≤ 600 mm) where the fire resistivity depends on the installation method mentioned in Tab. 1 and Tab. 2.
2. 3GA = garage fire dampers = rectangular fire dampers of third generation (dimensions 800 ≤ *W* ≤ 1200 mm and 100 ≤ *H* ≤ 300 mm) where the fire resistivity depends on the installation method mentioned in Tab. 1 and Tab. 2.

E = Integrity , I = thermal insulation , S = leakage

Fire resistance: on pages 5-6
Dimensions: on pages 7-8
Type of activation: on page 11

Fire dampers are standardly delivered with closing temperature: manual 74°C, motorized 72°C. By means of the remark in the order can be ordered closing temperature: manual 100°C, motorized 95°C.
See also the Tab. 10 on the page 23.

Examples of the ordering codes:

Round fire dampers - dimensions *DN* > ø 630 mm, example:

PKIR-EI90S - 1000 - DV7-T

Circular fire damper with fire resistance EI90S, diameter ø 1000 mm with actuator 230 V and thermoelectric fuse.

Rectangular fire dampers – dimensions *W* > 800 mm and / or *H* > 600 mm, example:

PKIS-EI120S - 1600×1000 - DV9-T-SR

Rectangular fire damper with fire resistance EI120S, nominal dimensions width × height = 1600 × 1000 mm, with modulating actuator 24 V and thermoelectric fuse.

Round fire dampers 3G - dimensions *DN* ≤ ø 630 mm, example:

PKIR3G - 400 - DV5-2

Circular fire damper, nominal diameter 400 mm, with 24 V AC electromagnetic release mechanism in impulse connection (release takes place when the electromagnet is activated) plus 230 V switches indicating the damper's closed and open position, fire resistivity depends on the installation method in Tab. 1.

Rectangular fire dampers 3G– dimensions 800 < *W* ≤ 1200 mm and 100 ≤ *H* ≤ 300 mm, example:

PKIS3G - 800×600 - DV1-2

Rectangular fire damper, nominal dimensions width × height = 800 × 600 mm, with open and closed position indication with 230 V contact microswitches. Fire resistivity is depending on the installation method in the Tab. 2.

Garage fire damper 3GA – dimensions 800 ≤ *W* ≤ 1200 mm and 100 ≤ *H* ≤ 300 mm

PKIS3G - 850×150 - DV7-T

Rectangular fire damper, nominal dimensions width × height = 850 × 150 mm, with actuator 230 V and thermoelectric fuse. Fire resistivity is depending on the installation method in the Tab. 2.

Description

All our standard fire dampers are designed and certified in accordance with the test criterias EIS according to EN1366 – 2. Fire dampers PKIR and PKIS are designed for installations listed on page 17. Their installation is described in the Installation, operation and inspection manual of the fire dampers PP-28_PKI... By default, all fire dampers are supplied with manual control and optional with micro switches, electromagnets, or with the servomotor, optionally with power and communication unit. The activation mechanisms are removable and all are interchangeable, for example a servomotor mechanism instead of a manual mechanism. Exceptions are circular fire dampers diameter bigger than ø400mm, which do not have a removable mechanism.

Manually operated fire dampers

In case of fire, the fire damper is automatically set to the closed position. Depending on the version, the damper closes either after melting of the thermal fuse or by means of activating the electromagnet in impulse connection, or disconnecting the electromagnet in interrupted connection (see wiring diagrams in the Installation, operation and inspection manual of the fire dampers PP-28_PKI...). After the closing of the damper blade, it is mechanically locked in the closed position and can only be opened manually. Actuating mechanism is activated when the temperature of the air in the duct reaches 74°C and the damper closes within 10 seconds after melting of the fuse.

Servomotor operated fire dampers

Fire damper can be equipped with a servomotor which closes the damper after the command from the building management system, or after breaching of the thermoelectric fuse. Servomotor controlled fire dampers are standardly equiped with thermoelectric fuse that activates the closing of the damper after reaching or exceeding of ambient temperature of 72°C, servomotor circuit is interrupted and the spring closes the damper blade within 20 seconds.

Information about accessories for the fire dampers PKIR and PKIS are on page 13.

- PRR and PRS - Coverplates
- MPA - METO-PG20 adapter
- MPC - METO-PG clutch
- CVR, CVRF and CVS - Thermal dilatation compensator
- SSAR and SSAS - Adapter with smoke sensor
- RFA - Flanges for the circular fire dampers
- IKRR, IKRS and IKSS - Installation kit
- IPOR, IPOS - parts for installation on/out of a wall

Design

Fire dampers have casings made from galvanized sheet metal, blades from non-asbestos insulants have a cold rubber seal and an intumescent one for 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, with the exception of the solder in the thermofuse, which contains a milligram of lead.

Connection of the electrical parts

Connection of all electrical parts according to the types of activation mechanisms is described in the Installation, operation and inspection manual of the fire dampers PP - 28_PKI ... .

Inspection openings

Each Systemair fire damper has minimum one inspection opening:

Dimension range (mm)	Inspection opening implemented with	Second standard inspection opening	Additional inspection opening
DN ≤ ø150	Removable activating mechanism	-	On demand
ø150 < *DN* ≤ ø630	Removable activating mechanism	Inspection lid	
ø630 < *DN* ≤ ø1000	Inspection lid *	-	
W and *H* < 180	Removable activating mechanism	-	
W or *H* ≥ 180	Removable activating mechanism	Inspection lid	

NOTE:
* this dimensions do not have removable activating mechanism

Tightness of the blade and the casing of the fire damper

All circular and rectangular fire dampers have tightness of the blade/casing class 2/B according to EN 1751.
On demand fire dampers 3G can be supplied with tightness class 3/C.

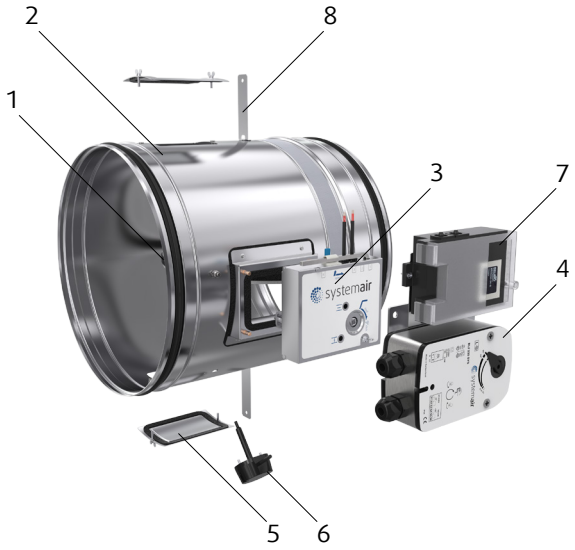


Fig. 1: Components of the circular fire damper

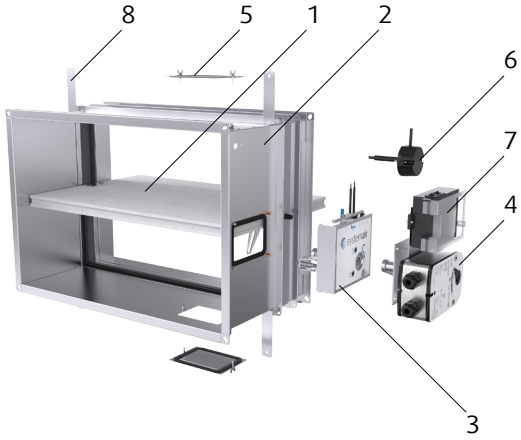


Fig. 2: Components of the rectangular fire damper

Damper parts:

1. Blade
2. Casing
3. Manual activation mechanism (ZV, DV1 up to DV5D-2)
4. Activation mechanism with servomotor (DV7-T up to DV9-T-SR)
5. Inspection lid
6. Thermoelectric fuse (DV7-T up to DV9-T-SR)
7. Supply and communication unit BKN230-24 (for DV9-T-ST)
8. Bendable bracket

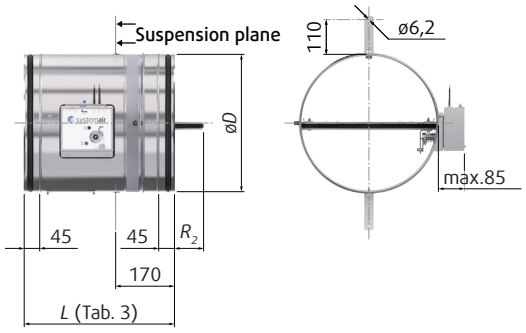


Fig. 3: Dimensions of the manual circular fire damper PKIR3G
- nominal diameter ø 100 to 630 mm

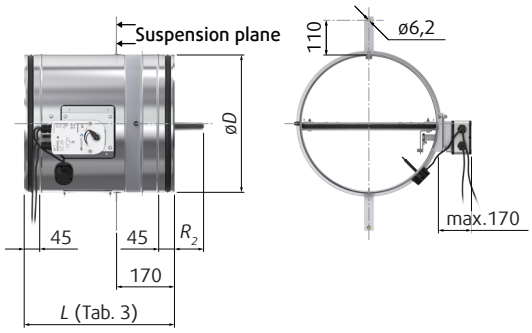


Fig. 4: Dimensions of the servomotor controlled circular fire damper
PKIR3G - nominal diameter ø 100 to 630 mm

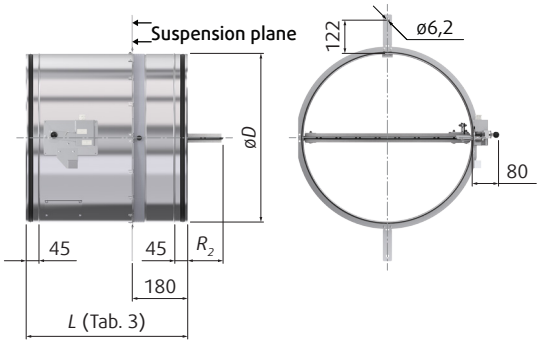


Fig. 5: Dimensions of the manual circular fire damper PKIR
- nominal diameter ø > 630 to 1000 mm

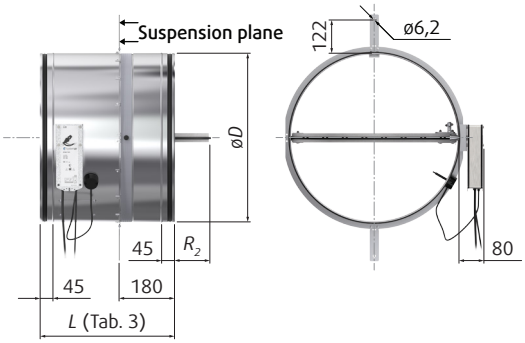


Fig. 6: Dimensions of the servomotor controlled circular fire damper PKIR
- nominal diameter ø > 630 to 1000mm

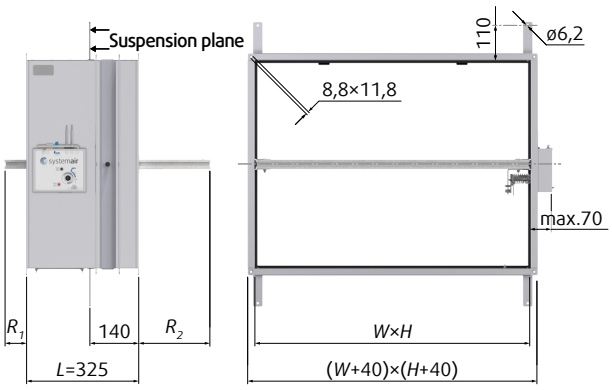


Fig. 7: Dimensions of the manual rectangular fire damper PKIS3G - nominal dimensions 100 × 100 mm to 800 × 600 mm and PKIS3GA - nominal dimensions 850 × 100 to 1200 × 300 mm

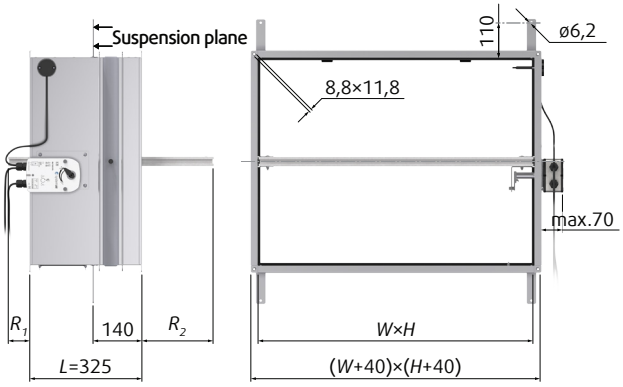


Fig. 8: Dimensions of the servomotor controlled rectangular fire damper
PKIS3G - nominal dimensions 100 × 100 mm to 800 × 600 mm
and PKIS3GA - nominal dimensions 850 × 100 to 1200 × 300 mm

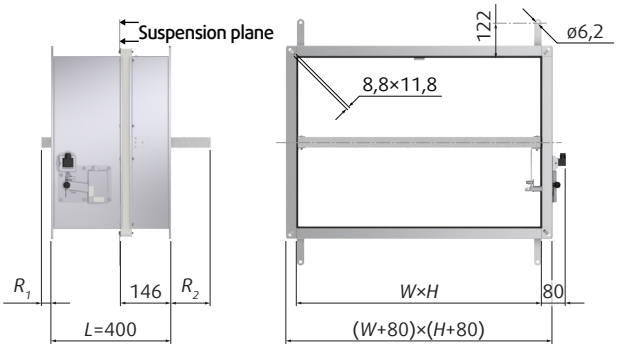


Fig. 9: Dimensions of the manual rectangular fire damper PKIS)
- nominal dimensions *W*>800mm and / or *H*>600 mm (except PKIS3GA)
up to 1600×1000mm

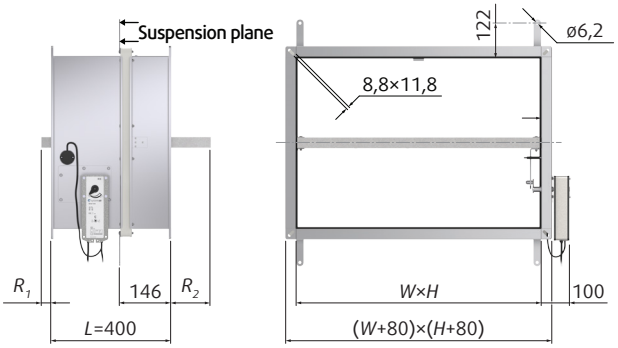


Fig. 10: Dimensions of the servomotor controlled rectangular fire damper PKIS
- nominal dimensions *W* > 800 mm and / or *H* > 600 mm (except PKIS3GA) up to
1600 × 1000 mm

Fire resistance

Circular fire dampers PKIR3G, PKIR-EI60S, -EI90S and -EI120S

Circular fire dampers are certified according to EN 15650 , tested according to EN 1366-2 and classified according to EN13501.

Name	Certificate no.	Activating mechanism	Dimension range (mm)	Installation [1]			Fire resistivity	Tested by underpressure (Pa)
				Solid wall	Flexible wall	Ceiling		
PKIR3G	CE 1396 - CPR - 0076	ZV, DV1 up to DV9-T-SR	ø 100 up to 630 [3]	wet			EI60 (ve ho i↔o) S	500
				dry		-	EI60 (ve i↔o) S	300
				soft crossing			EI60 (ve ho i↔o) S	
				installation kit		-	EI60 (ve i↔o) S	500
				on a wall		-		300
				out of a wall		-		
				wet			EI90 (ve ho i↔o) S	500
				dry		-	EI90 (ve i↔o) S	300
				soft crossing			EI90 (ve ho i↔o) S	
				installation kit		-	EI90 (ve i↔o) S	500
				on a wall		-		300
				out of a wall		-		
				wet			EI120 (ve ho i↔o) S	500
				installation kit		-	EI120 (ve i↔o) S	
PKIR-EI90S	CE 1396 - CPD - 0061	ZV, DV1 up to DV9-T-W	ø > 630 up to 1000	wet			EI90 (ve ho i↔o) S	300
				dry		-		
				soft crossing				
PKIR-EI120S		ZV, DV1 up to DV9-T-W	ø > 400 up to 1000 [2]	wet, dry		wet [2]	EI120 (ve ho i↔o) S	

Tab. 1: Permitted installation methods for the rectangular fire dampers based on fire resistivities

NOTES:

1. The walls must have a fire resistance equal to or better than according to Tab. 3 - 5 in EN 1366-2.
2. Nominal diameters above ø 800 mm in wet ceiling installation, vertically only solid wall and dry or wet installation with coverplates.
3. On a wall and out of a wall only up to ø 400 mm.

ACCORDING TO EN 15650 EACH FIRE DAMPER MUST BE INSTALLED ACCORDING TO THE INSTALLATION INSTRUCTIONS PROVIDED BY THE MANUFACTURER!

Rectangular fire dampers PKIS3G, PKIS-EI60S, EI90S and EI120S

Rectangular fire dampers are certified according to EN 15650 , tested according to EN 1366-2 and classified according to EN13501-3

Name	Certificate no.	Activating mechanism	Dimension range (mm)	Installation [1]			Fire resistivity	Tested by underpressure (Pa)
				Solid wall	Flexible wall	Ceiling		
PKIS3G	CE 1396 - CPR - 0077	ZV, DV1 up to DV9-T-SR	100 × 100 up to 800 × 600	wet			EI60 (ve ho i↔o) S	500
				dry		-	EI60 (ve i↔o) S	300
				soft crossing			EI60 (ve ho i↔o) S	
				installation kit		-	EI60 (ve i↔o) S	500
				on a wall		-		300
				out of a wall		-		
				wet			EI90 (ve ho i↔o) S	500
				dry		-	EI90 (ve i↔o) S	300
				soft crossing			EI90 (ve ho i↔o) S	
				installation kit		-	EI90 (ve i↔o) S	500
				on a wall		-		300
				out of a wall		-		
				wet			EI120 (ve ho i↔o) S	500
				installation kit		-	EI120 (ve i↔o) S	
PKIS3GA[4]	CE 1396 - CPR - 0077	ZV, DV1 up to DV9-T-SR	850 × 100 up to 1200 × 300	wet			EI60 (ve ho i↔o)S	300
				dry		-	EI60 (ve i↔o)S	
				soft crossing			EI60 (ve ho i↔o)S	
				wet			EI90 (ve ho i↔o)S	
				dry		-	EI90 (ve i↔o)S	
				soft crossing			EI90 (ve ho i↔o)S	
PKIS-EI90S	CE 1396 - CPD - 0062	ZV, DV1 up to DV9-T-W	*W* > 800 mm and / or *H* > 600 mm up to 1000 × 1000 [2] up to 1600 × 1000 [3]	wet			EI90 (ve ho i↔o) S	300
				dry		-		
				soft crossing				
				out of a wall		-	EI90 (ve i↔o) S	
				multiinstallation[5]	-	-		
PKIS-EI120S				wet			EI120 (ve ho i↔o) S	

Tab. 2: Permitted installation methods for the rectangular fire dampers based on fire resistivities

NOTES:

1. The walls must have a structure and a fire resistance equal to or better than according to the table 3 - 5 in EN 1366-2.
2. All supporting constructions
3. Solid wall and ceiling
4. Garage fire damper – installation on a wall and out of a wall not possible – for this installation must be used PKIS-EI90S
5. Two fire dampers side by side or one above the other or 4 dampers - always with a horizontal blade axis

ACCORDING TO EN 15650 EACH FIRE DAMPER MUST BE INSTALLED ACCORDING TO THE INSTALLATION INSTRUCTIONS PROVIDED BY THE MANUFACTURER!

Dimensions

PKIR3G, -EI60S, -EI90S and -EI120S

DN	øD	L		m		A_v			R_1	R_2
		Manual	With servomotor	Manual	With servomotor	EI60S	EI90S	EI120S		
(mm)				(kg ±10%)		(m²)			(mm)	
100	98	435		3,7	4,7	0,003			-	-
125	122			3,4	4,9	0,007			-	-
140	137			3,6	5,1	0,009			-	-
150	147			3,7	5,2	0,011			-	-
160	157			3,8	5,3	0,013			-	-
180	177			4,2	5,7	0,018			-	-
200	197			4,4	5,9	0,023			-	-
225	222			4,8	6,3	0,031			-	-
250	247			5,3	6,8	0,039			-	-
280	277			5,8	7,3	0,05			-	14
315	312			6,4	7,9	0,065			-	31,5
355	352			7,3	8,8	0,085			-	51,5
400	397			8,3	9,8	0,11			-	74
450	447	427		11,1	11,9	0,138			-	108
500	497			12,3	13,1	0,173			-	133
560	557			14,6	15,4	0,220			-	163
630	627			17,0	17,8	0,283			-	198
710	707	600	500	27,6	30,4	0,366	0,361	0,357	25	165
800	797			33,8	36,6	0,469	0,463	0,459	70	210
900	897			39,8	42,6	0,599	0,592	0,587	120	260
1000	997			46,6	49,4	0,744	0,736	0,731	170	310

Tab. 3: Weights of the circular fire dampers and the overhangs of the fully open blades

NOTES:
R_1 and R_2 = Overhang of the fully open blade, including seals and gaps after opening

= Fire dampers PKIR3G

PKIS3G, PKIS3GA, PKIS-EI90S and EI120S

m_{zv} (kg ±10%)		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	4,2	4,6	5,1	5,5	6,0	6,1	6,4	6,5	6,9	7,4	7,8	8,3	8,4	8,8	9,0	9,2	9,7	9,8	10,1	10,6
	150	4,6	5,1	5,6	6,2	6,7	6,8	7,2	7,3	7,7	8,3	8,8	9,3	9,4	9,9	10,2	10,4	10,9	11,0	11,4	11,9
	200	5,1	5,7	6,2	6,8	7,4	7,6	8,0	8,1	8,6	9,2	9,8	10,4	10,5	11,0	11,3	11,6	12,2	12,3	12,7	13,3
	250		6,2	6,8	7,5	8,1	8,3	8,8	8,9	9,4	10,2	10,8	11,5	11,6	12,1	12,5	12,8	13,4	13,5	14,1	14,7
	300		6,7	7,4	8,1	8,8	9,1	9,6	9,7	10,3	11,1	11,8	12,5	12,6	13,2	13,6	13,9	14,6	14,8	15,4	16,1
	315			7,6	8,3	9,1	9,3	9,8	9,9	10,5	11,3	12,1	12,8	13,0	13,5	14,0	14,3	15,0	15,2	15,8	16,5
	350			8,0	8,8	9,6	9,8	10,3	10,4	11,1	12,0	12,8	13,5	13,7	14,3	14,8	15,1	15,9	16,0	16,7	17,5
	355			8,1	8,9	9,7	9,9	10,4	10,5	11,2	12,1	12,9	13,6	13,8	14,4	14,9	15,2	16,0	16,2	16,8	17,6
	400			8,6	9,4	10,3	10,5	11,1	11,2	12,0	12,9	13,7	14,6	14,8	15,4	15,9	16,3	17,1	17,3	18,0	18,8
	450				10,1	11,0	11,3	11,9	12,0	12,8	13,8	14,7	15,6	15,8	16,5	17,1	17,5	18,4	18,6	19,3	20,2
	500				10,7	11,7	12,0	12,7	12,8	13,7	14,7	15,7	16,7	16,9	17,7	18,2	18,6	19,6	19,8	20,6	21,6
	550					12,4	12,7	13,5	13,6	14,5	15,6	16,7	17,7	17,9	18,8	19,4	19,8	20,9	21,1	21,9	22,9
	560					12,6	12,9	13,6	13,7	14,7	15,8	16,7	17,9	18,1	19,0	19,6	20,0	21,1	21,3	22,2	23,2
	600					13,1	13,5	14,2	14,4	15,4	16,5	17,7	18,8	19,0	19,9	20,5	21,0	22,1	22,3	23,2	24,3
	630							22,2	23,6	25,0	26,4	27,8	29,1	31,0	32,9	34,8	36,7	38,6	39,5	41,1	42,7
	650							23,6	24,8	26,0	27,2	28,4	31,2	34,0	36,5	37,4	38,3	39,2	40,0	42,5	43,5
	700							24,9	26,0	27,0	29,2	31,4	34,4	35,3	37,4	38,8	40,3	42,1	42,8	44,4	46,4
	710								26,4	28,1	29,8	31,5	33,2	34,9	36,6	38,3	40,0	41,7	43,4	45,1	46,8
	750									29,0	32,1	33,3	34,5	35,7	37,9	40,1	42,0	43,5	45,0	46,5	48,0
	800									30,0	34,3	36,7	39,1	40,0	41,5	44,6	46,5	46,4	46,3	48,8	51,3
	850										36,0	38,9	41,2	42,3	43,3	45,4	47,5	48,5	48,9	50,6	53,4
	900										37,5	40,1	42,7	43,5	45,5	47,0	48,1	50,8	50,6	53,4	56,2
	950											41,7	44,6	45,5	47,6	50,1	51,7	53,0	53,4	55,7	58,8
	1000											43,5	46,5	47,7	49,4	53,0	55,1	55,2	55,3	58,2	61,1

m_{zv} (kg ±10%)		W (mm)																			
		850	900	950	1000	1050	1100	1120	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600			
H (mm)	100	11,0	11,4	11,9	12,4	12,8	13,3	13,4	13,7	14,2											
	150	12,6	13,1	13,6	14,2	14,7	15,2	15,5	15,8	16,3											
	200	14,2	14,8	15,4	16,0	16,6	17,2	17,4	17,8	18,4	35,5	36,2	36,9	37,6	38,3	39,0					
		21,2	22,8	24,5	26,1	28,0	29,8	31,7	33,5	34,8											
	250	15,7	16,4	17,1	17,8	18,5	19,2	19,4	19,8	20,5	36,3	37,0	37,7	38,4	39,1	39,8					
		24,0	25,1	26,2	27,3	29,2	31,1	33,0	34,9	35,6											
	300	17,3	18,1	18,8	19,6	20,3	21,1	21,5	21,9	22,6	37,3	38,5	39,7	40,9	42,1	43,3					
		26,5	27,7	29,0	30,2	31,5	32,7	34,0	35,2	36,1											
	315	26,4	28,2	30,0	31,8	33,2	34,5	35,9	37,2	38,6	39,9	40,9	41,9	42,9	43,9	44,9					
	350	29,1	30,4	31,8	33,1	35,4	37,7	38,7	39,7	40,4	41,1	41,8	43,5	45,9	48,3	50,7					
	355	29,5	30,8	32,2	33,5	36,4	39,3	41,0	41,8	42,6	43,4	44,2	45,0	47,8	51,4	51,8					
	400	33,4	34,9	36,4	37,9	39,4	40,9	41,8	42,7	43,8	44,9	46,0	47,1	49,7	52,3	52,7	54,2	55,6			
	450	36,1	37,6	39,2	40,7	42,4	44	45,2	46,4	47,1	47,8	48,5	49,2	53,5	57,8	56,7	58,3	59,9			
	500	38,5	40,2	42,0	43,7	45,4	47,1	48,3	49,5	50,7	51,9	53,1	54,3	57,4	60,5	60,9	61,1	61,3			
	550	41,2	43	44,8	46,6	48,5	50,3	51,6	52,9	54	55,1	56,2	57,3	61,3	65,3	65	66,9	68,7			
	560	41,8	43,8	45,8	47,8	49,8	51,7	53,1	54,5	55,6	56,5	57,2	58,0	63,3	68,6	67,8	69,2	70,6			
	600	43,5	45,5	47,5	49,5	51,5	53,4	55,4	56,8	57,3	57,8	58,3	58,8	65,1	70,3	71,1	72,0	72,9			
	630	44,0	46,4	48,9	51,3	54,0	56,6	59,3	61,9	64,6	67,2	68,6	69,8	70,9	71,8	72,3	73,4	74,4			
	650	44,4	47,3	50,2	53,1	55,5	57,8	60,2	62,5	64,9	67,2	69,6	71,9	72,8	73,5	74,2	76,1	77,9			
	700	48,6	50,8	53,1	55,3	57,5	59,6	61,2	62,8	64	65,2	66,4	67,6	72,8	75,3	77,1	79,3	81,5			
	710	49,2	51,7	54,3	56,8	59,0	61,2	63,4	65,6	67,8	70,0	72,2	74,4	75,8	76,8	77,9	80,4	82,8			
	750	50,3	52,9	55,5	58,1	61,0	63,8	66,7	69,5	72,4	75,2	76,6	75,0	77,5	80,0	81,1	83,3	85,4			
	800	53,8	56,2	58,6	61	63,4	65,8	67,4	69,0	70,7	72,4	74,1	75,8	78,5	81,2	85,3	87,7	90,1			
	850	55,9	58,5	61,1	63,7	66,1	68,4	70,8	73,1	75,5	77,8	80,2	82,5	84,9	87,2	89,2	92,0	94,7			
	900	59,0	61,6	64,2	66,8	69,5	72,2	73,6	75,0	77,5	80,0	82,5	85,0	88,3	91,6	93,6	96,3	99			
	950	60,5	63,4	66,3	69,2	72,3	75,4	76,6	77,8	79,0	80,2	81,4	82,6	83,8	85,0	97,5	100,4	103,3			
	1000	64,0	66,9	69,8	72,7	75,6	78,5	79,9	81,3	84,3	87,3	90,3	93,3	95,3	97,3	101,8	104,7	107,6			

Tab. 4: Weights of the manual rectangular fire dampers

= Fire dampers with length *L* = 325 mm (PKIS3G); servo + 1,6 kg

= Fire dampers with length *L* = 400 mm; servo + 1,6 kg

= Fire dampers with length *L* = 325 mm (PKIS3GA); servo + 1,6 kg

= Fire dampers with length *L* = 400 mm; servo + 3,3 kg

= Not produced

A_v (m²)	W (mm)																				
H (mm)	100	150	200	250	300	315	350	355	400	450	500	550	560	600	630	650	700	710	750	800
100	0,006	0,009	0,012	0,016	0,019	0,020	0,023	0,023	0,026	0,030	0,033	0,037	0,037	0,040	0,042	0,043	0,047	0,048	0,050	0,054
150	0,010	0,016	0,022	0,028	0,034	0,036	0,040	0,041	0,046	0,052	0,058	0,064	0,065	0,070	0,073	0,076	0,082	0,083	0,088	0,094
200	0,015	0,024	0,032	0,040	0,049	0,051	0,057	0,058	0,066	0,074	0,083	0,091	0,093	0,100	0,105	0,108	0,117	0,118	0,125	0,133
250		0,031	0,042	0,053	0,064	0,067	0,075	0,076	0,086	0,097	0,108	0,118	0,121	0,129	0,136	0,140	0,151	0,154	0,162	0,173
300		0,038	0,052	0,065	0,079	0,083	0,092	0,093	0,105	0,119	0,132	0,146	0,148	0,159	0,167	0,173	0,186	0,189	0,200	0,213
315			0,055	0,069	0,083	0,087	0,097	0,099	0,111	0,126	0,140	0,154	0,157	0,168	0,177	0,182	0,197	0,199	0,211	0,225
350			0,061	0,077	0,093	0,098	0,109	0,111	0,125	0,141	0,157	0,173	0,176	0,189	0,199	0,205	0,221	0,224	0,237	0,253
355			0,062	0,079	0,095	0,100	0,111	0,113	0,127	0,143	0,160	0,176	0,179	0,192	0,202	0,208	0,224	0,228	0,241	0,257
400			0,071	0,090	0,108	0,114	0,127	0,128	0,145	0,163	0,182	0,200	0,204	0,219	0,230	0,237	0,256	0,259	0,274	0,293
450				0,102	0,123	0,129	0,144	0,146	0,165	0,186	0,207	0,228	0,232	0,249	0,261	0,270	0,291	0,295	0,311	0,332
500				0,114	0,138	0,145	0,161	0,164	0,185	0,208	0,232	0,255	0,260	0,278	0,292	0,302	0,325	0,330	0,349	0,372
550					0,153	0,160	0,178	0,181	0,204	0,230	0,256	0,282	0,287	0,308	0,324	0,334	0,360	0,365	0,386	0,412
560					0,155	0,163	0,182	0,185	0,208	0,235	0,261	0,288	0,293	0,314	0,330	0,341	0,367	0,372	0,394	0,420
600					0,167	0,176	0,196	0,199	0,224	0,253	0,281	0,310	0,315	0,338	0,355	0,366	0,395	0,401	0,423	0,452
630							0,202	0,205	0,231	0,260	0,289	0,319	0,325	0,348	0,366	0,377	0,407	0,413	0,436	0,465
							0,194	0,197	0,223	0,252	0,281	0,310	0,316	0,339	0,356	0,368	0,397	0,403	0,426	0,455
650							0,209	0,212	0,239	0,269	0,299	0,330	0,336	0,360	0,378	0,390	0,421	0,427	0,451	0,481
							0,201	0,204	0,231	0,261	0,291	0,321	0,327	0,351	0,369	0,381	0,411	0,417	0,441	0,471
700							0,226	0,229	0,259	0,291	0,324	0,357	0,364	0,390	0,409	0,423	0,455	0,462	0,488	0,521
							0,218	0,221	0,251	0,283	0,315	0,348	0,354	0,380	0,400	0,413	0,445	0,452	0,478	0,510
710								0,233	0,263	0,296	0,329	0,362	0,369	0,396	0,416	0,429	0,462	0,469	0,496	0,529
								0,225	0,254	0,287	0,320	0,353	0,360	0,386	0,406	0,419	0,452	0,459	0,485	0,518
750									0,278	0,314	0,349	0,384	0,391	0,420	0,441	0,455	0,490	0,497	0,526	0,561
									0,270	0,305	0,340	0,375	0,382	0,410	0,431	0,445	0,480	0,487	0,515	0,550
800									0,298	0,336	0,374	0,412	0,419	0,449	0,472	0,487	0,525	0,533	0,563	0,601
									0,289	0,327	0,364	0,402	0,409	0,439	0,462	0,477	0,514	0,522	0,552	0,589
850										0,358	0,399	0,439	0,447	0,479	0,503	0,520	0,560	0,568	0,600	0,640
										0,349	0,389	0,429	0,437	0,469	0,493	0,509	0,549	0,557	0,589	0,628
900										0,381	0,423	0,466	0,475	0,509	0,535	0,552	0,595	0,603	0,637	0,680
										0,371	0,413	0,456	0,464	0,498	0,524	0,541	0,583	0,592	0,625	0,668
950											0,448	0,494	0,503	0,539	0,566	0,584	0,629	0,638	0,675	0,720
											0,438	0,483	0,492	0,528	0,555	0,573	0,617	0,626	0,662	0,707
1000											0,473	0,521	0,530	0,569	0,597	0,616	0,664	0,674	0,712	0,760
											0,462	0,510	0,519	0,557	0,585	0,604	0,652	0,661	0,699	0,747

A_v (m²)	W (mm)																
H (mm)	850	900	950	1000	1050	1100	1120	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600
100	0,06055	0,0642	0,06785	0,0715	0,07515	0,0788	0,08026	0,08245	0,0861								
150	0,10305	0,1092	0,11535	0,1215	0,12765	0,1338	0,13626	0,13995	0,1461								
200	0,14555	0,1542	0,16285	0,1715	0,18015	0,1888	0,19226	0,19745	0,2061								
	0,131	0,139	0,146	0,154	0,162	0,170	0,173	0,178	0,185	0,193	0,201	0,209	0,217	0,224	0,232		
	0,123	0,131	0,138	0,145	0,153	0,160	0,163	0,168	0,175	0,183	0,190	0,198	0,205	0,212	0,220		
250	0,18805	0,1992	0,21035	0,2215	0,23265	0,2438	0,24826	0,25495	0,2661								
	0,173	0,183	0,194	0,204	0,214	0,225	0,229	0,235	0,245	0,256	0,266	0,276	0,286	0,297	0,307		
	0,165	0,175	0,185	0,195	0,205	0,215	0,219	0,225	0,235	0,245	0,255	0,265	0,274	0,284	0,294		
300	0,23055	0,2442	0,25785	0,2715	0,28515	0,2988	0,30426	0,31245	0,3261								
	0,215	0,228	0,241	0,254	0,267	0,279	0,285	0,292	0,305	0,318	0,331	0,343	0,356	0,369	0,382		
	0,207	0,219	0,232	0,244	0,257	0,269	0,274	0,282	0,294	0,307	0,319	0,331	0,344	0,356	0,369		
315	0,228	0,242	0,255	0,269	0,282	0,296	0,301	0,309	0,323	0,337	0,350	0,364	0,377	0,391	0,404		
	0,220	0,233	0,246	0,259	0,272	0,286	0,291	0,299	0,312	0,325	0,338	0,352	0,365	0,378	0,391		
350	0,258	0,273	0,288	0,304	0,319	0,334	0,340	0,350	0,365	0,380	0,395	0,411	0,426	0,441	0,457		
	0,249	0,264	0,279	0,294	0,309	0,324	0,330	0,339	0,354	0,369	0,383	0,398	0,413	0,428	0,443		
355	0,262	0,277	0,293	0,309	0,324	0,340	0,346	0,355	0,371	0,386	0,402	0,417	0,433	0,449	0,464		
	0,253	0,268	0,284	0,299	0,314	0,329	0,335	0,344	0,360	0,375	0,390	0,405	0,420	0,436	0,451		
400	0,300	0,318	0,336	0,353	0,371	0,389	0,396	0,407	0,425	0,442	0,460	0,478	0,496	0,514	0,531	0,549	0,567
	0,291	0,308	0,326	0,343	0,361	0,378	0,385	0,396	0,413	0,430	0,448	0,465	0,483	0,500	0,518	0,535	0,553
450	0,342	0,363	0,383	0,403	0,424	0,444	0,452	0,464	0,484	0,505	0,525	0,545	0,566	0,586	0,606	0,627	0,647
	0,333	0,353	0,373	0,393	0,413	0,433	0,441	0,453	0,472	0,492	0,512	0,532	0,552	0,572	0,592	0,612	0,632
500	0,385	0,407	0,430	0,453	0,476	0,499	0,508	0,521	0,544	0,567	0,590	0,613	0,635	0,658	0,681	0,704	0,727
	0,375	0,397	0,420	0,442	0,465	0,487	0,496	0,509	0,532	0,554	0,577	0,599	0,622	0,644	0,667	0,689	0,712
550	0,427	0,452	0,478	0,503	0,528	0,553	0,564	0,579	0,604	0,629	0,655	0,680	0,705	0,731	0,756	0,781	0,806
	0,417	0,442	0,467	0,492	0,517	0,541	0,551	0,566	0,591	0,616	0,641	0,666	0,691	0,716	0,741	0,766	0,791
560	0,435	0,461	0,487	0,513	0,539	0,564	0,575	0,590	0,616	0,642	0,668	0,693	0,719	0,745	0,771	0,797	0,822
	0,425	0,451	0,476	0,501	0,527	0,552	0,563	0,578	0,603	0,629	0,654	0,680	0,705	0,731	0,756	0,781	0,807
600	0,469	0,497	0,525	0,553	0,580	0,608	0,619	0,636	0,664	0,692	0,719	0,747	0,775	0,803	0,831	0,858	0,886
	0,459	0,486	0,514	0,541	0,568	0,596	0,607	0,623	0,651	0,678	0,706	0,733	0,761	0,788	0,816	0,843	0,870
630	0,495	0,524	0,553	0,582	0,612	0,641	0,653	0,670	0,700	0,729	0,758	0,788	0,817	0,846	0,875	0,905	0,934
	0,484	0,513	0,542	0,571	0,600	0,629	0,640	0,658	0,686	0,715	0,744	0,773	0,802	0,831	0,860	0,889	0,918
650	0,512	0,542	0,572	0,602	0,633	0,663	0,675	0,693	0,724	0,754	0,784	0,815	0,845	0,875	0,905	0,936	0,966
	0,501	0,531	0,561	0,590	0,620	0,650	0,662	0,680	0,710	0,740	0,770	0,800	0,830	0,860	0,890	0,920	0,950
700	0,554	0,587	0,619	0,652	0,685	0,718	0,731	0,751	0,783	0,816	0,849	0,882	0,915	0,947	0,980	1,013	1,046
	0,543	0,575	0,607	0,640	0,672	0,705	0,718	0,737	0,770	0,802	0,835	0,867	0,900	0,932	0,964	0,997	1,029
710	0,562	0,596	0,629	0,662	0,695	0,729	0,742	0,762	0,795	0,829	0,862	0,895	0,929	0,962	0,995	1,028	1,062
	0,551	0,584	0,617	0,650	0,683	0,716	0,729	0,749	0,782	0,815	0,848	0,880	0,913	0,946	0,979	1,012	1,045
750	0,596	0,631	0,667	0,702	0,737	0,773	0,787	0,808	0,843	0,879	0,914	0,949	0,984	1,020	1,055	1,090	1,126
	0,585	0,619	0,654	0,689	0,724	0,759	0,773	0,794	0,829	0,864	0,899	0,934	0,969	1,004	1,039	1,074	1,109
800	0,638	0,676	0,714	0,752	0,790	0,827	0,843	0,865	0,903	0,941	0,979	1,016	1,054	1,092	1,130	1,168	1,205
	0,626	0,664	0,701	0,739	0,776	0,814	0,829	0,851	0,889	0,926	0,964	1,001	1,038	1,076	1,113	1,151	1,188
850	0,681	0,721	0,761	0,802	0,842	0,882	0,898	0,923	0,963	1,003	1,043	1,084	1,124	1,164	1,205	1,245	1,285
	0,668	0,708	0,748	0,788	0,828	0,868	0,884	0,908	0,948	0,988	1,028	1,068	1,108	1,148	1,188	1,228	1,268
900	0,723	0,766	0,809	0,851	0,894	0,937	0,954	0,980	1,023	1,065	1,108	1,151	1,194	1,237	1,279	1,322	1,365
	0,710	0,753	0,795	0,838	0,880	0,923	0,940	0,965	1,008	1,050	1,092	1,135	1,177	1,220	1,262	1,305	1,347
950	0,765	0,811	0,856	0,901	0,947	0,992	1,010	1,037	1,082	1,128	1,173	1,218	1,264	1,309	1,354	1,400	1,445
	0,752	0,797	0,842	0,887	0,932	0,977	0,995	1,022	1,067	1,112	1,157	1,202	1,247	1,292	1,337	1,382	1,427
1000	0,808	0,855	0,903	0,951	0,999	1,047	1,066	1,094	1,142	1,190	1,238	1,286	1,333	1,381	1,429	1,477	1,525
	0,794	0,842	0,889	0,937	0,984	1,032	1,051	1,079	1,126	1,174	1,221	1,269	1,316	1,364	1,411	1,459	1,506

Tab. 5: Free areas of the rectangular fire dampers

= Fire dampers with length *L* = 325 mm (PKIS3G)

= Fire dampers with length *L* = 325 mm (PKIS3GA)

= Fire dampers with length *L* = 400 mm (PKIS-EI90S)
= Fire dampers with length *L* = 400 mm (PKIS-EI120S)

= Not produced

H	R_1		R_2	
	3G and 3GA	EI60/90/120S	3G and 3GA	EI60/90/120S
(mm)				
100	-	-	-	-
150	-	-	-	-
200	-	-	7,5	-
250	-	-	32,5	-
300	-	-	57,5	20
315	-	-	65	27,5
350	-	-	82,5	45
355	-	-	85	47,5
400	-	-	107,5	70
450	-	-	132,5	95
500	12,5	-	157,5	120
550	37,5	-	182,5	145
560	42,5	-	187,5	150
600	62,5	20	207,5	170
630	-	35	-	185
650	-	45	-	195
700	-	70	-	220
710	-	75	-	225
750	-	95	-	245
800	-	120	-	270
850	-	145	-	295
900	-	170	-	320
950	-	195	-	345
1000	-	220	-	370

Tab. 6: Overhang of the fully open blade in the rectangular fire dampers

NOTE:
R_1 and R_2 = Overhang of the fully open blade, including seals and gaps after opening

Type of activation

Overview of the activation types-parameters is in Tab. 7.

ZV; Basic model with manual crank and an actuating mechanism with spring return release driven by a fusible thermal link set to 74°C (on demand 100°C)

DV1; ZV + closed position indication with a 230V contact switch

DV1-2; ZV + open and closed indication with 230V contact switches

DV3; ZV + 24V AC electromagnetic release mechanism in impulse connection (release takes place when the electromagnet is activated)

DV4; ZV + 230V AC electromagnetic release mechanism in impulse connection (release takes place when the electromagnet is activated)

DV5; ZV + 24V AC electromagnetic release mechanism in impulse connection (release takes place when the electromagnet is activated) plus 230V switch indicating the damper's closed position

DV5-2; ZV + 24V AC electromagnetic release mechanism in impulse connection (release takes place when the electromagnet is activated) plus 230V switches indicating the damper's closed and open position

DV6; ZV + 230V AC electromagnetic release mechanism in impulse connection (release takes place when the electromagnet is activated) plus 230V switch indicating the damper's closed position

DV6-2; ZV + 230V AC electromagnetic release mechanism in impulse connection (release takes place when the electromagnet is activated) plus 230V switches indicating the damper's closed and open position

DV3B to DV6B-2; the same as DV3 to DV6-2 with electromagnet 24V AC or 230V AC in interruption connection (release takes place by the interruption of the current in the electromagnet)

DV3C to DV5C-2; the same as DV3, DV5 and DV5-2 with electromagnet 24V DC in impulse connection (release takes place when the electromagnet is activated)

DV3D to DV5D-2; the same as DV3, DV5 and DV5-2 with electromagnet 24V DC in interruption connection (release takes place by the interruption of the current in the electromagnet)

Servomotor-operated fire dampers

DV7-T; spring return servomotor-operated fire dampers (230V AC) with electro-thermal fuse 72°C (on demand 95°C) and auxiliary switches

DV9-T; spring return servomotor-operated fire dampers (24V) with electro-thermal fuse and auxiliary switches

DV9-T-ST; spring return servomotor-operated fire dampers (24V) with electro-thermal fuse, auxiliary switches and Belimo BKN230-24 supply and communication unit

DV9-T-W; spring return servomotor operated fire dampers (24V) complete with electro-thermal fuse, auxiliary switches and with the cables for the Belimo BKN230-24 supply and communication unit

DV9-T-SR; modulated (possibility to open the blade in desired angle) spring return servomotor-operated fire dampers (24V) with electro-thermal fuse and auxiliary switches

Activating mechanism				Type of activation	Manual																						With servomotor				
		Current type	Voltage		ZV	DV1	DV1-2	DV3	DV5	DV5-2	DV4	DV6	DV6-2	DV3C	DV5C	DV5C-2	DV3B [1]	DV5B [1]	DV5B-2 [1]	DV4B	DV6B	DV6B-2	DV3D	DV5D	DV5D-2	DV7-T	DV9-T	DV9-T-ST	DV9-T-W	DV9-T-SR [2]
Switch	Open	AC/DC	230 V				•			•			•			•			•			•			•					
	Closed	AC/DC	230 V			•	•		•	•		•	•		•	•		•	•		•	•		•	•						
Electromagnet	Impulse connection	AC	24 V					•	•	•																					
			230 V								•	•	•																		
		DC	24 V											•	•	•															
	Interruption connection	AC	24 V														•	•	•												
			230 V																	•	•	•									
		DC	24 V																				•	•	•						
Servomotor Belimo BLF / BF	230-T	AC	230 V																							•					
	24-T	AC/DC	24 V																								•				
	24-T-ST		24 V																									•			
	24-T-W		24 V																										•		
	24-SR-T		24 V																												•

Tab. 7: Composition of the activation mechanisms according to the ordering codes

NOTES:

1. Only applicable for PKIS3G, PKIS3GA and PKIR3G
2. Only applicable for PKIS3G, PKIS3GA, PKIR3G, PKIR-EI60/90/120S and PKIR-E60S

Legend

DC	Direct current
AC	Alternating current
230	Servomotor 230V
24	Servomotor 24V
T	Servomotor with thermoelectric fuse
ST	Servomotor with the supply and communication unit BKN230-24
W	Servomotor with cables for the supply and communication unit
SR	Modulated servomotor with the control 0-10V

Pressure loss and sound power level

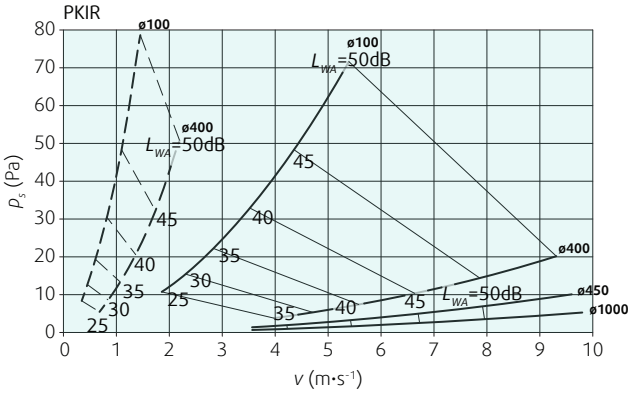


Diagram 1: Pressure drop and sound power level - PKIR

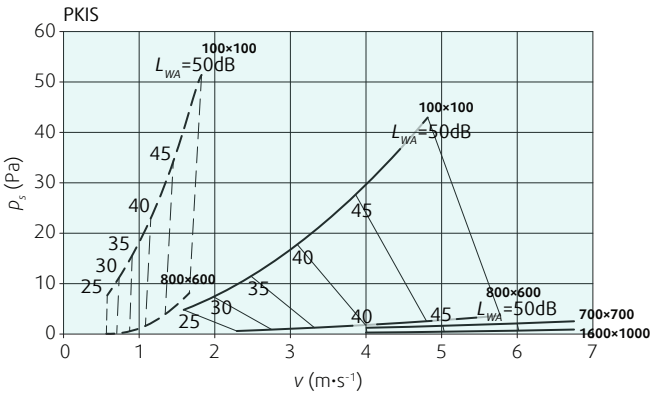


Diagram 2: Pressure drop and sound power level - PKIS

Legend

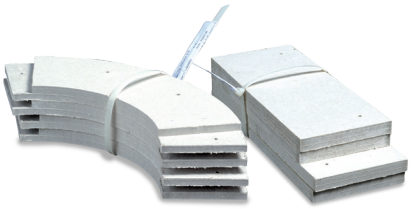
– – – – –	Damper position 45° (valid for DV9-T-SR)
———	Fully open damper

Technical parameters

Durability test	50 cycles / manual actuating mechanism – with no change of the required properties
	10000 + 100 + 100 cycles servomotor controlled – with no change of the required properties
	20000 cycles modulated (DV9-T-SR) – with no change of the required properties
Testing under pressure	300/500 Pa, depending on the method of installation
Safe position	Closed
Possible installation	Vertical / horizontal, rigid / flexible wall, wet / dry (see classification table on the page 5 and 6)
Airflow direction	Optional
Allowed air velocity	Max. 12 m/s
Side protected from the fire	Optional
Closing temperature	Manual - 74°C as standard (100°C on request) by means of spring after melting of the thermofuse
	Servomotor Controlled - 72°C as standard (95°C on request) by menas of the spring after current interruption in the electro-thermal fuse
Closing time	Manualy < 10 s, servomotor driven < 20 s
Ambient temperature	Maximum of 60°C for 72°C thermofuse, maximum 80°C for 100°C thermofuse, at least -10°C
Repeated opening	It is possible to open the device in cold condition
Indicator closed / open	Manual 230V microswitch versions DV1 to DV6B - 2
	Servomotor controlled - built-in microswitches - version DV7 - up DV9-T-SR
Environment suitability	Only indoor environment
Inspection possibility	After removing of the activation mechanism, or by opening of the inspection lid
Maintenance	Not required
Allowed pressure	1200 Pa
Blade tightness (STN EN 1751)	Class 2, Class 3 for 3G and 3GA on request
Tightness of the housing (STN EN 1751)	Class B, Class C for 3G and 3GA on request
Modulated servomotor	Can be set to any position when opening blade - see types of activation mechanisms DV9-T-SR
Conformity with EC directives	2006/42/ES Machinery Directive
	2006/95/ES Low Voltage Directive
	2004/108/ES Electromagnetic Compatibility Directive

Accessories

COVERPLATES



Ordering codes

Ordering code for circular coverplates:
PRR-DN

DN = Nominal diameter (mm)

Ordering code for rectangular coverplates:
PRS-W×H

W = Nominal width (mm), *H* = Nominal height (mm)

Dimensions *W*=100-800mm and *H*=100-600mm have flanges width 20mm, dimensions *W*>800mm and/or *H*>600mm have flanges on one side width 40mm and on another side 20mm up to *W*<1000mm and 30mm for *W*≥1000mm.
They are intended for the fire dampers with fire resistance EI60S and EI90S to all authorized walls and ceilings . For dry installation they are obligatory. Set of 8 coverplates made of calcium- silicate boards (follow the instructions in he Installation, operation and inspection manual for the fire dampers PP-28_PKI ... - there are four front and four back coverplates).

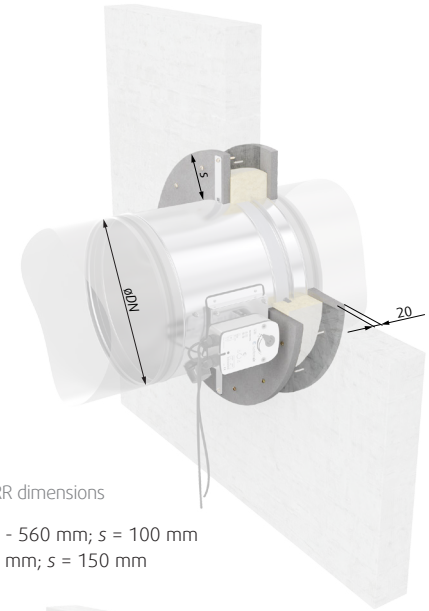


Fig. 11: PRR dimensions

DN = 100 - 560 mm; *s* = 100 mm
DN > 560 mm; *s* = 150 mm

Fig. 12: PRS dimensions

METO - PG20 ADAPTER

Ordering codes

MPA-W×H

W = Width (mm), *H* = Height (mm)

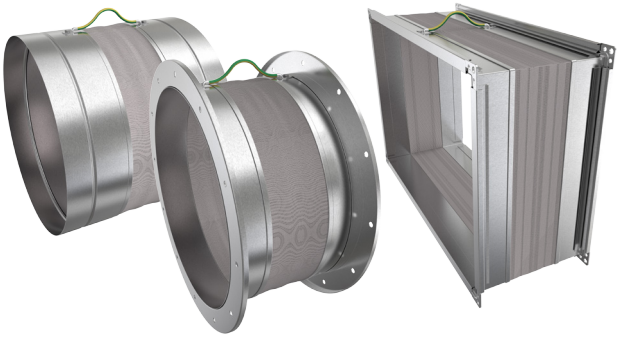
METO-PG CLUTCH

Ordering codes

MPC

M3 item number: 15476

COMPENSATORS OF THE THERMAL DILATATION



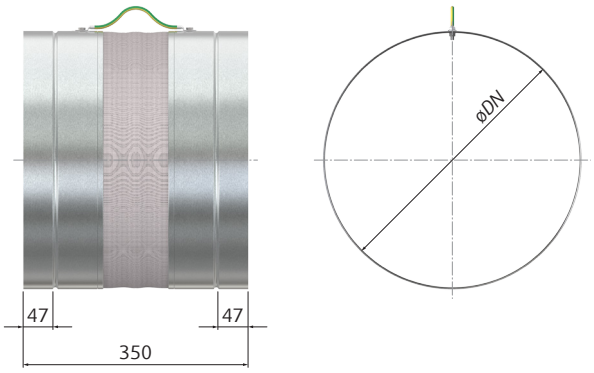


Fig. 13: CVR dimensions

Ordering codes

Ordering code for circular compensators:
CVR-DN

DN=nominal diameter (mm)
(compensator lenght L = 350 mm, produced up to nominal diameter 800 mm)

Ordering code for round compemsator with flanges:
CVRF-DN

DN=nominal diameter (mm)
(compensator lenght *L* = 240 mm, produced up to nominal diameter 800 mm)

Ordering code for rectangular compensators:
CVS-W×H

W = Width (mm), *H* = Height (mm)
(length of the compensators *L* = 350 mm for all nominal dimensions)

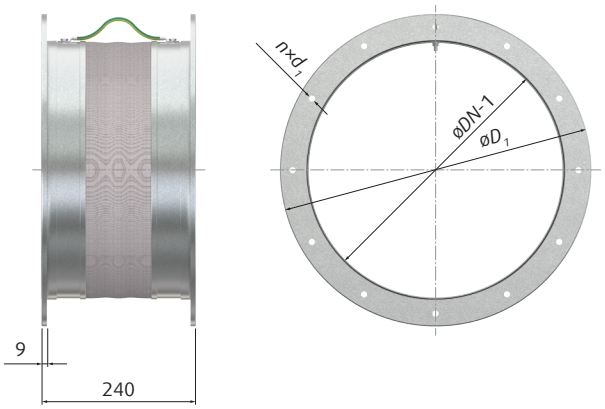


Fig. 14: CVRF dimensions

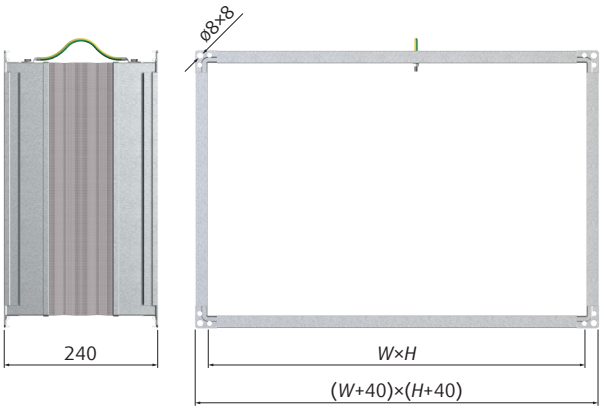


Fig. 15: CVS dimensions

ADAPTERS WITH SMOKE SENSOR

Ordering codes

Ordering code for round adapter with smoke sensor:
SSAR-DN

DN = Nominal diameter (mm), *DN* ≥ 150 mm
(length of the adapter *L* = 400 mm for all nominal diameters;
ø*D* = *DN*-2,5).

Ordering code for rectangular adapter with smoke sensor:
SSAS-W×H

W = Width (mm), *W* ≥ 150 mm, *H* = Height (mm)
(length of the adapter *L* = 400mm for all nominal dimensions)

$W_1 = W + 40$ mm, $H_1 = H + 40$mm;
for nominal dimensions 100 × 100mm up to 800 × 600 mm

$W_1 = W + 80$ mm, $H_1 = H + 80$ mm; for nominal dimensions *W* > 800 mm and / or *H* > 600 mm up to 1600 × 1000 mm

Optical smoke sensor Hekatron LRS01 is mounted in the adapter (piece of duct).

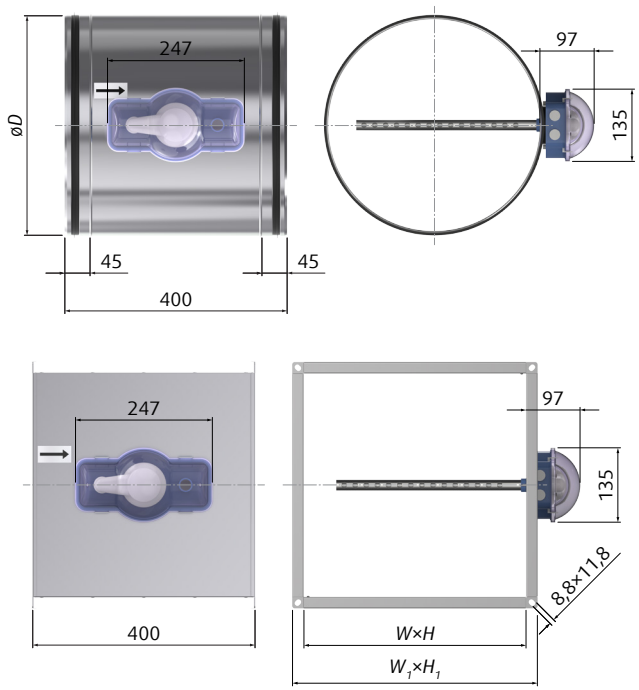


Fig. 16: Adapters with the smoke sensor for round or square fire dampers

ROUND FLANGES FOR FIRE DAMPERS

Ordering codes

RFA-DN

DN = Nominal diameter (mm)

Round flange adapters can be supplied if it is necessary to assemble the circular fire dampers on the flanges.

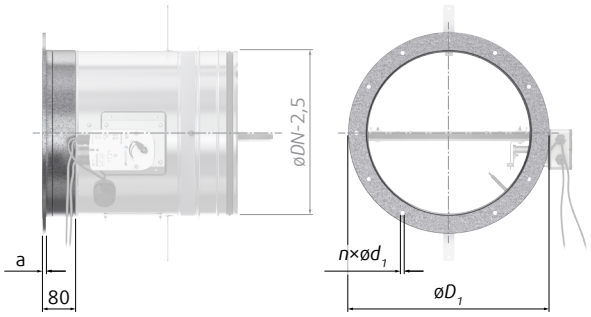


Fig. 17: Flange for the round fire dampers

DN	øD_1	a	ød_1	n
	(mm)			
100	130	7	7	4
125	155			
140	192	9	9	8
150	181	7		
160	224	10		
180	215			
200	235	9		
225	260	10		
250	285			
280	315			
315	350			12
355	390			
400	445			
450	495			
500	545			16
560	605	11	12	
630	680			
710	760			20
800	860			

Tab. 8: Dimensions of flange for the round fire dampers

NOTE:
Flanges for *DN* > ø 800 mm are not produced.

INSTALLATION KIT

Installation kit is delivered only for PKIR3G and PKIS3G. It will be supplied pre-assembled on the fire damper.

Ordering codes

Ordering code for installation kit for round fire damper with round perimeter of the kit:
IKRR-DN

DN = Nominal diameter (mm)

Ordering code for installation kit for round fire damper with rectangular perimeter of the kit:
IKRS-DN

DN = Nominal diameter (mm)

Ordering code for installation kit for rectangular fire damper with rectangular perimeter of the kit:
IKSS-W×H

W = Width (mm), *H* = Height (mm)

DN	W_1	W_2	W_3	øD_1	øD_2
(mm)					
100	200	350	187	200	187
125	250	375	237	250	237
140		390			
150		400			
160		410			
180	300	430	287	300	287
200		450			
225	350	475	337	350	337
250		500			
280	400	530	387	400	387
315		565			
355	450	605	437	450	437
400	500	650	487	500	487

Tab. 9: Dimensions of installation kit

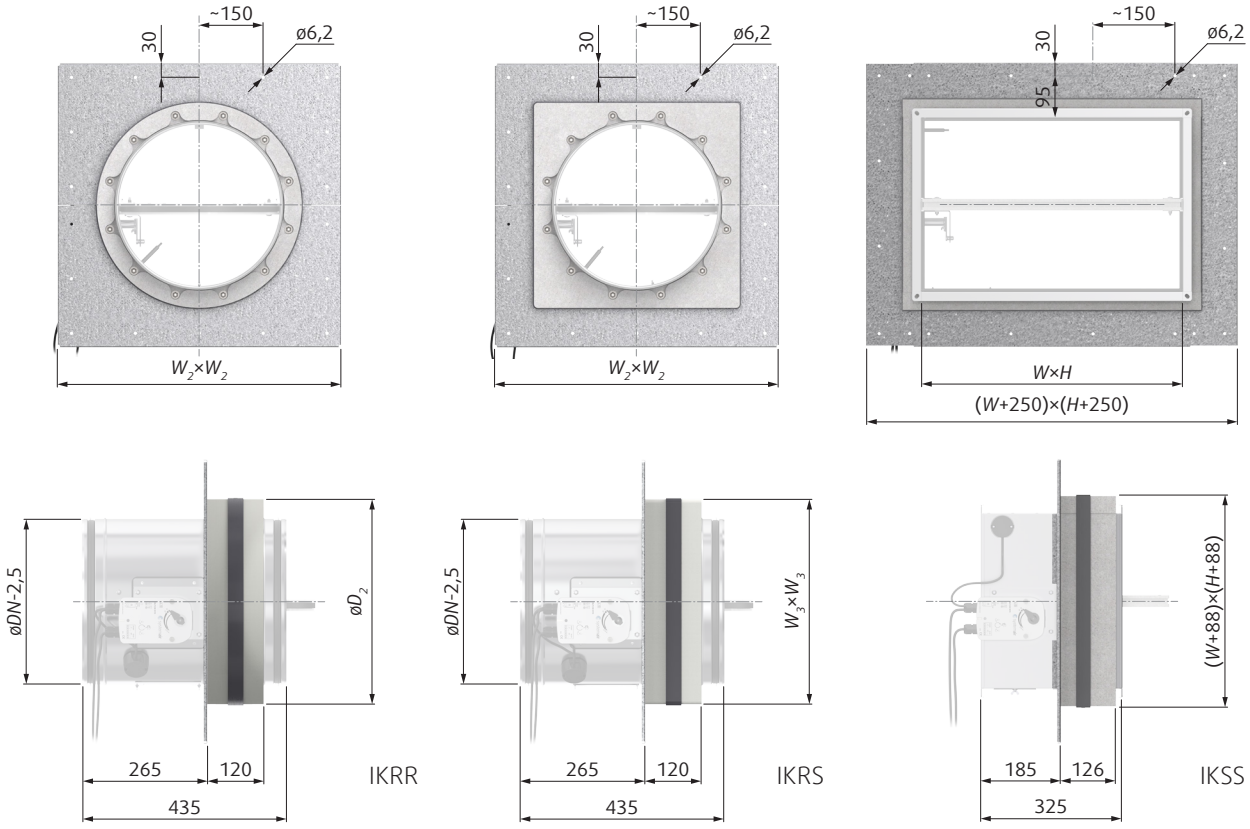


Fig. 18: Installation kit (IKRR, IKRS, IKSS)

INSTALLATION PARTS FOR THE INSTALLATION ON/OUT OF A WALL

Ordering codes

Ordering code for round fire damper:
IPOR-DN

DN = Nominal diameter (mm)

- IPOR is appliccable only for PKIR3G and includes front insulation cover (delivery in disassembled status)

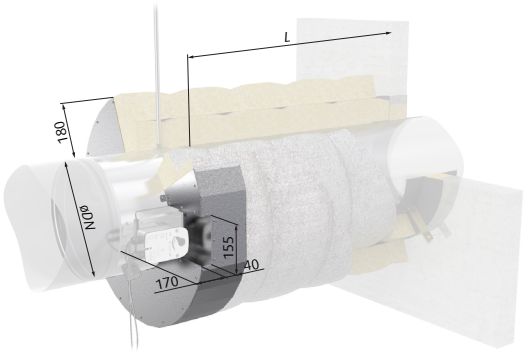


Fig. 19: Front insulation cover IPOR

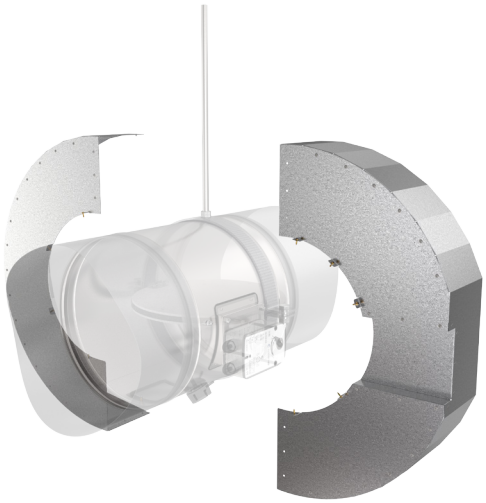


Fig. 21: Disassembled IPOR

Ordering code for rectangular fire damper:
IPOS-W×H

W = Nominal width (mm), *H* = nominal height

IPOS includes:

- for PKIS3G front insulation cover and promatect boards with cross section 60 × 20 mm.
- for PKIS-EI90S front insulation cover and hanging frame (delivery in disassembled status)
- not applicable for PKIS3GA

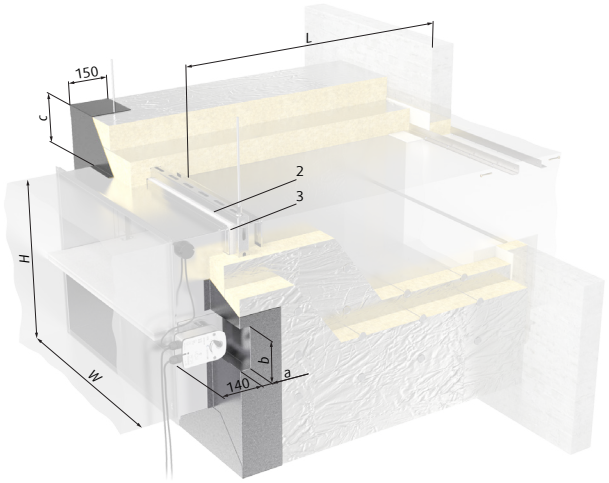


Fig. 20: Front insulation cover IPOS

Installation, operation, inspection and maintenance

Fire dampers must be installed, operated and inspected according to the Installation, operation and inspection manual of the fire dampers PP-28_PKI ... . All Systemair fire safety products are maintenance-free.

Methods of installation

Details see in the Installation, operation and inspection manual of the fire dampers PP-28_PKI ...

Method of installation	1.1 dry	1.2 wet	1.3 soft crossing	1.4 installation kit	1.5 on a wall	1.6 out of a wall	1.7 multiinstal.
					not for PKIR3G>ø400 and PKIS3GA		not for PKIS3G and PKIS3GA
On page...	17	18	19	20	21	21	22

1.1 Wet installation

Wet installation is intended for fire dampers of all fire resistances to all approved walls and ceilings - the rigid or flexible wall or ceiling with a resistance equal or better than required in Table 3 - 5 in EN 1366-2.
Detail description and dimensions of this installation are in Installation manual PP-28... page 21.

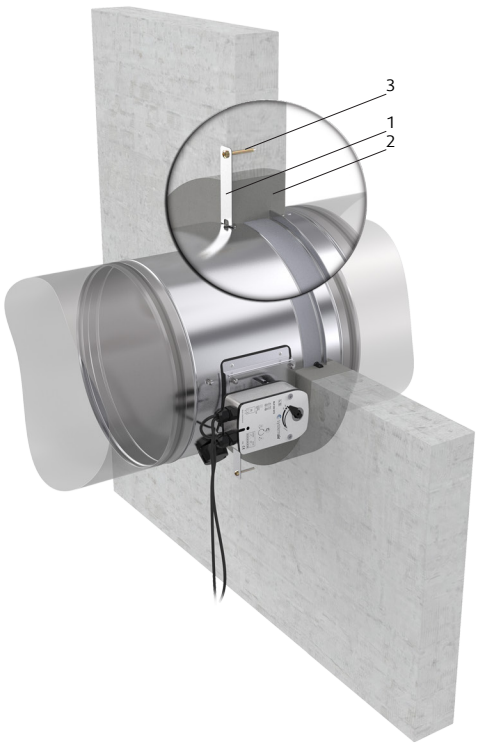


Fig. 22: Wet installation of a round fire damper PKIR using a mixture of plaster with mortar or concrete

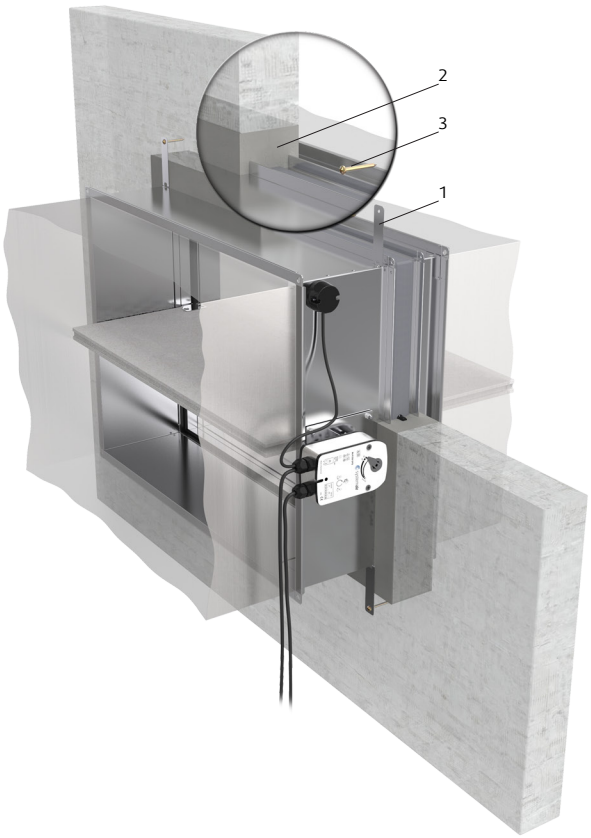


Fig. 23: Wet installation of a rectangular fire damper PKIS using a mixture of plaster with mortar or concrete

Legend

1	Bendable hanging
2	Plaster / mortar / concrete filling
3	Screw 5,5 DIN7981

1.2 Dry installation

It is intended for fire dampers with fire resistance EI60S and EI90S to all approved walls - the rigid or flexible wall or ceiling with a resistance equal or better than required in Table 3 - 5 in EN 1366-2. Detail description and dimensions of this installation are in Installation manual PP-28... page 21.

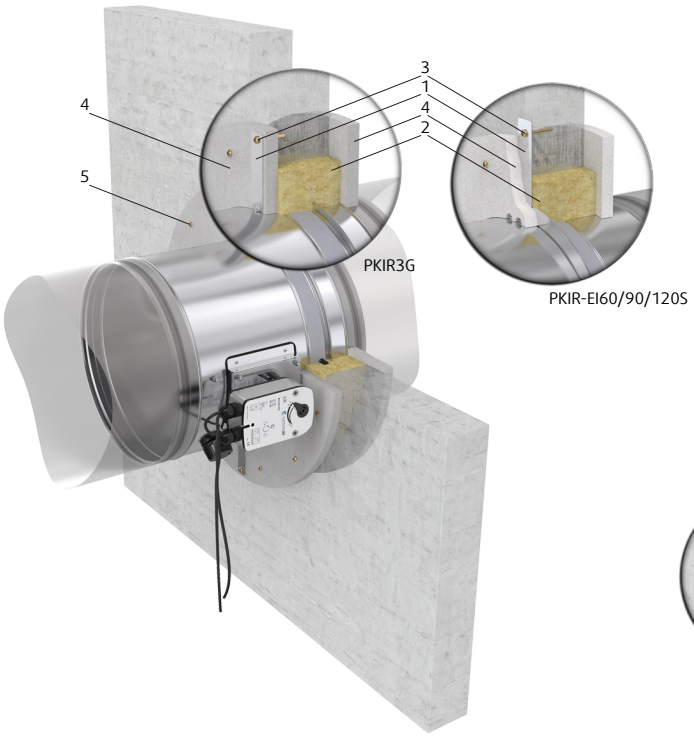


Fig. 24: Dry installation of a round fire damper PKIR using mineral wool with coverplates

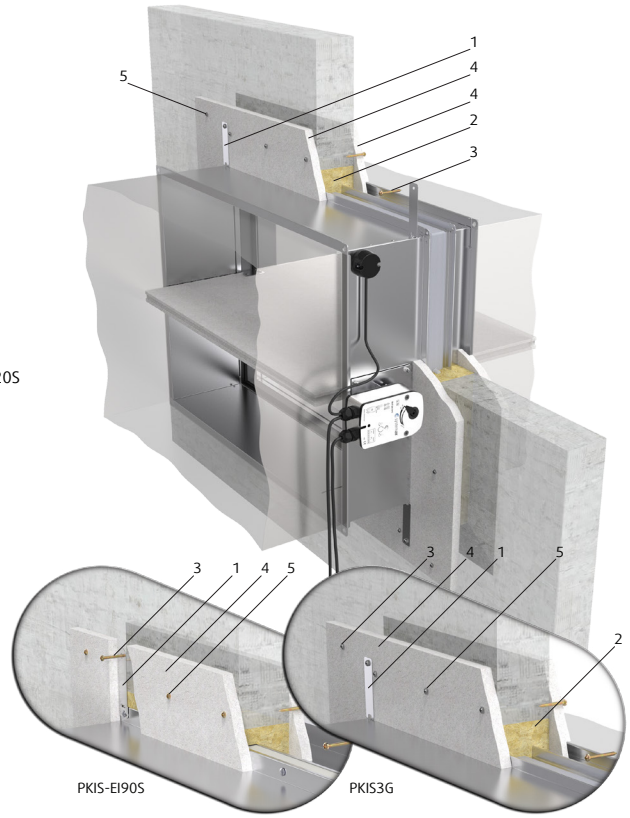


Fig. 25: Dry installation of a rectangular fire damper PKIS using mineral wool with coverplates

Legend

1	Bendable hanging
2	Mineral wool filling (min. 50 kg/m³)
3	Screw 5,5 DIN7981
4	Coverplate PRR for PKIR, PRS for PKIS (accessories)
5	Screw 5,5 DIN7981

1.3 Installation into the soft crossing

It is intended for fire dampers resistance EI60S and EI90S to all approved walls and ceilings with resistance equal or better required in Table 3 - 5 in EN 1366-2. Detail description and dimensions of this installation are in Installation manual PP-28... page 22.

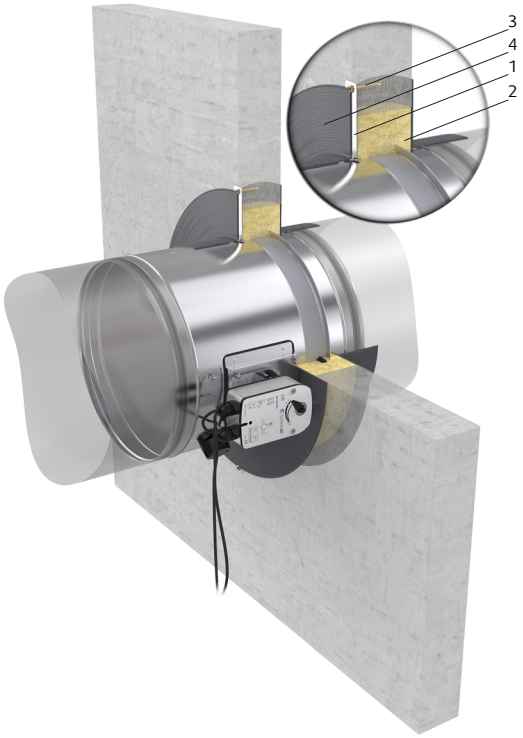


Fig. 26: Installation of a round fire damper PKIR into a soft crossing

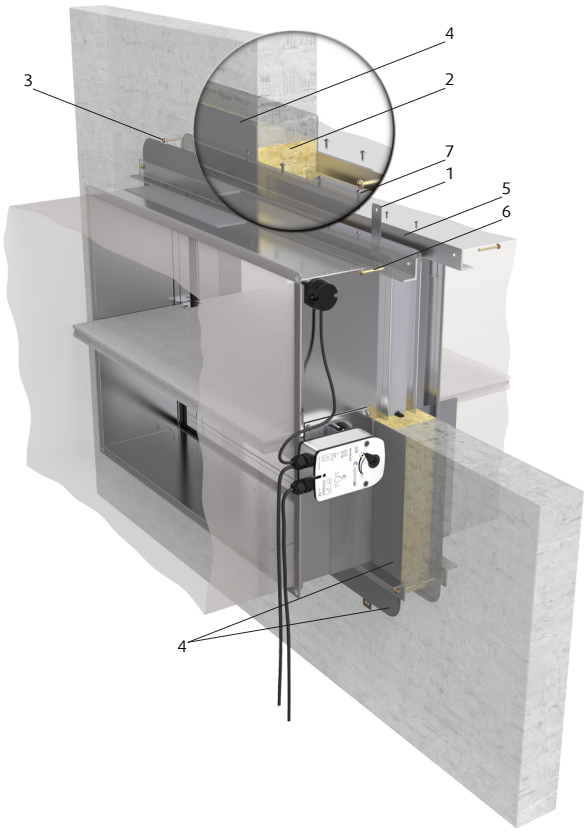


Fig. 27: Installation of a rectangular fire damper PKIS into a soft crossing

Legend

1	Bendable hanging
2	Mineral wool filling (150 kg/m³)
3	Screw 5,5 DIN7981
4	Layer of fire resistive mastic at least 2 mm thick
5	L-profile 60 × 40 × 3 mm (see chapter 1.3 in PP-28)
6	Screw 5,5 DIN7981
7	Screw 3,9 × max.13 DIN7504

1.4 Quick installation using the installation kit

It is intended for all fire dampers resistances, with dimensions ø 100 - 630 mm and 100 × 100 - 800 × 600 mm to all approved walls and ceilings with resistance equal or better than required in Table 3 - 5 in EN 1366-2. Detail description and dimensions of this installation are in Installation manual PP-28... page 22.

Fig. 28: Installation of a round fire damper PKIR using an installation kit
NOTE: ** Distance of the connected duct's ending from the wall.

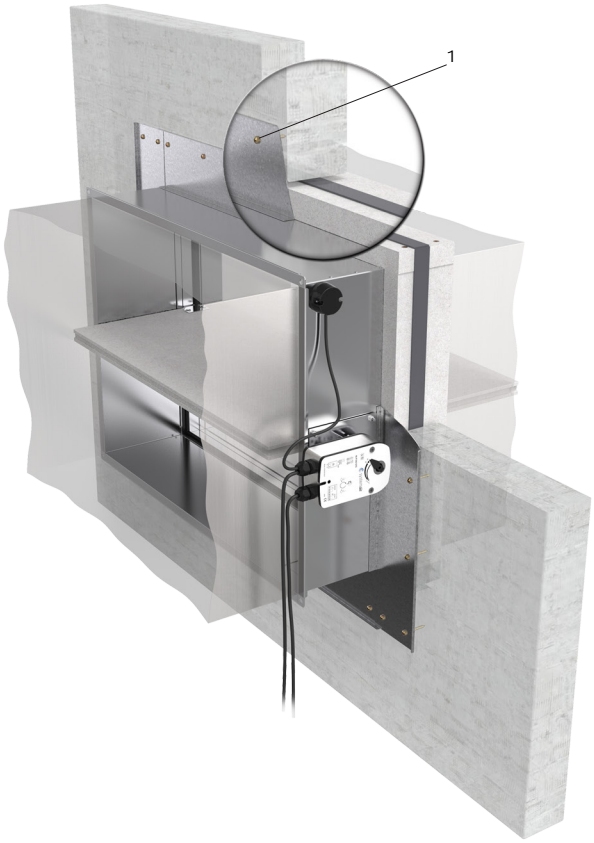


Fig. 29: Installation of a square fire damper PKIS using an installation kit

Legend

1	Screw 5,5 DIN7981

1.5 Installation on the wall

(not for PKIR3G > ø 400; not for PKIS3GA)
It is intended for the fire dampers with dimensions ø 100 - 400 mm and 100 × 100 - 800 × 600 mm, of the fire resistance EI60S and EI90S to all approved walls and ceilings with resistance equal or better than required in Table 3 - 5 in EN 1366-2. Detail description and dimensions of this installation are in Installation manual PP-28... page 22.

1.6 Installation out of the wall

(not for PKIR3G > ø 400; not for PKIS3GA)
It is intended for the fire dampers with dimensions ø 100 - 400 mm and 100 × 100 - 1600 × 1000 mm, of the fire resistance EI60S and EI90S to all approved walls, with resistance equal or better than required in Table 3 - 5 in EN 1366-2. Detail description and dimensions of this installation are in Installation manual PP-28... page 23.

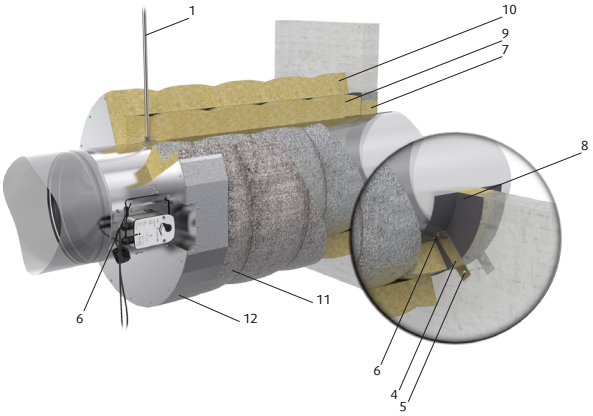


Fig. 30: Installation of a round fire damper PKIR on a wall and out of a wall

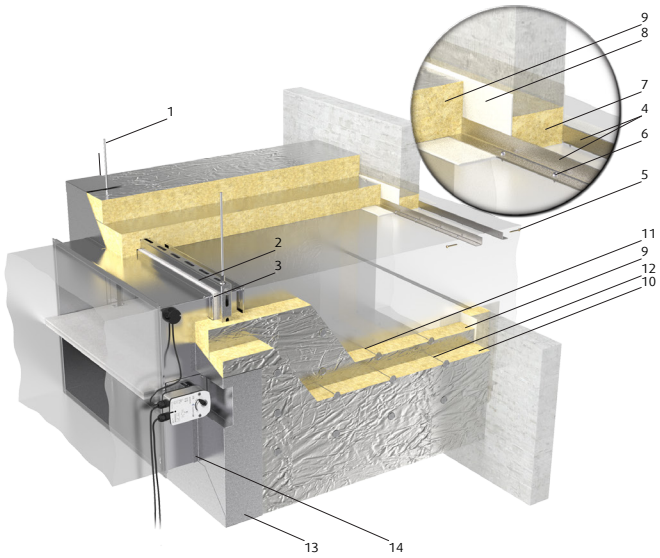


Fig. 31: Installation of a rectangular fire damper PKIS on a wall and out of a wall

Legend (Fig. 24; PKIR)

1	Steel threaded rod M12
2	Sheet metal ringlet for damper suspension (e.g. MP-MX/HILTI)
3	Ceramic tape (e.g. A-KERA) width 40mm, thickness 2mm
4	Sheet metal belt 40×2mm bent into a shape L with sides 35 and 160mm
5	Screw 5,5 DIN7981
6	Screw 3,9×max. 13 DIN7504
7	Mineral wool (66kg/m³)
8	Layer of fire resistive mastic at least 2 mm thick
9	Mineral wool (66kg/m³)
10	Mineral wool (66kg/m³)
11	Steel binding wire thickness 1,6mm
12	Insulation front cover (part of IPOR accessories, see page 16)

Legend (Fig. 25; PKIS)

1	Steel threaded rod M10
2	U-profile (e.g. MQ31/HILTI)
3	Calcium-silicate board 60×20mm (included among IPOS accessories, see page 16)
4	Steel L-profile 60×40×3mm
5	Screw 5,5 DIN7981
6	Screw 3,9×max. 13 DIN7504
7	Mineral wool (66kg/m³)
8	Layer of fire resistive mastic at least 2mm thick
9	Mineral wool (66kg/m³)
10	Mineral wool (66kg/m³)
11	Welding pin – length 90 or 100mm
12	Welding pin – length 180 or 200mm
13	Insulation front cover * (included among IPOS accessories, see page 16)
14	Screw 3,9×max. 13 DIN7504
15	IPOS hanging steel frame made of Jäkl profiles 60×40×3mm (included among IPOS accessories, see page 16)
16	Sheet metal 85×40×2,5mm
17	Damper insulation frame's screw
18	Steel threaded rod M8

1.7 Multiinstallation

(not for PKIS3GA)
It is designed for fire dampers dimensions H > 800 mm and / or W > 600 mm with fire resistance EI90S to all authorized walls, with resistance equal to or better than under the Tab. 3-5 in EN 1366-2. Detail description and dimensions of this installation are in Installation manual PP-28... page 23.

Legend

1	Console
2	Mineral wool (150 kg/m³)
3	Screw 5,5 DIN7981
4	Layer of fire resistive mastic
5	L-profile 60 × 40 × 3 mm
6	Screw 5,5 DIN7981
7	Screw 3,9 × max. 13 DIN7504
8	Sheet metal belt 80 × 0,9 mm
9	Screw 3,5 × 13 DIN7504

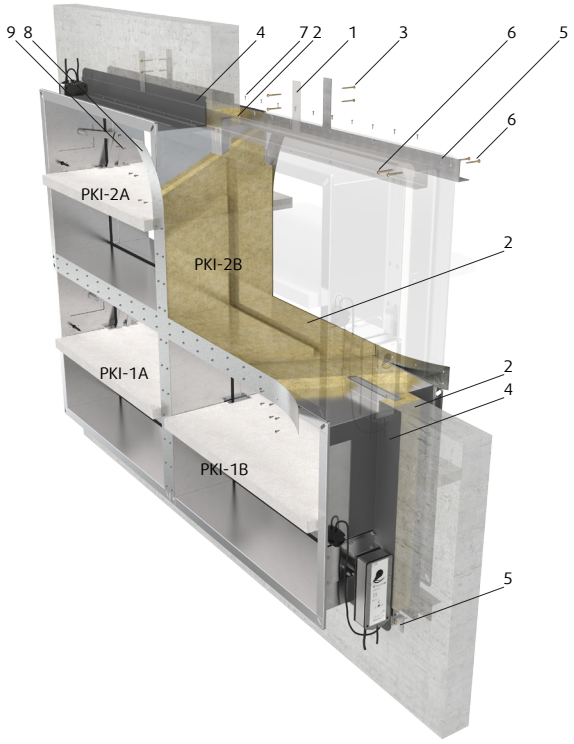


Fig. 32: Multiinstallation of a rectangular fire damper

Operating conditions

The fire dampers can be installed in places with temperatures according to Table 10.

Type of activation mechanism	Temperature of the fire damper closing	Permissible temperature in the duct and its surroundings
	(°C)	
ZV, DV1 to DV6B-2	74 Standard	-10 up to +62
	100 On demand	-10 up to +80
DV7 up to DV9-T-SR	72 Standard	-10 up to +62
	95 On demand	-10 up to +80

Tab. 10: Temperatures of the fire dampers closing and allowed temperatures

Active fire sealing must not be exposed to direct contact with water. The maximum air velocity is 12 m/s with clean air without mechanical or chemical contamination with uniform flow without condensation and icing or ice. Maximum permissible pressure difference before and after the blade is 1200 Pa. Higher temperatures must be consulted with the manufacturer and indicated in the order. The fire dampers are intended to use with horizontal or vertical axis of the blade.

Transport and storage

Fire dampers must be transported in covered means of transport on pallets or in boxes. When handling during transport, the dampers must be protected from damage and weather. Blades of the dampers must be in the "closed" position. It is recommended to store the products in a closed, dry place where the temperature is within the range of -10 °C to +50 °C. The temperature during storage, transportation and operation must not exceed 62 °C in any case!

Warranty

The manufacturer provides a 24 month warranty period, which begins on the day of the expedition noted in the delivery note.

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 products are available at the page www.imos-systemair.sk.

Fire dampers - Related products

PKI2-Ex

Systemair fire dampers for explosive areas

Product information is available in the technical documentation TPI-84.

PKI-C

Cartridge fire dampers

Product information is available in the technical documentation TPI-74.

1396 - CPD - 0050

DKI1

Systemair smoke dampers

Smoke dampers are intended for smoke and heat exhaust ventilation systems (SHEVS).
Product information is available in the technical documentation TPI-52.

1396 - CPD - 0058