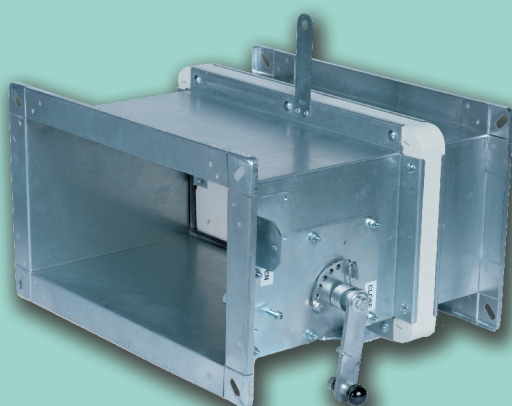
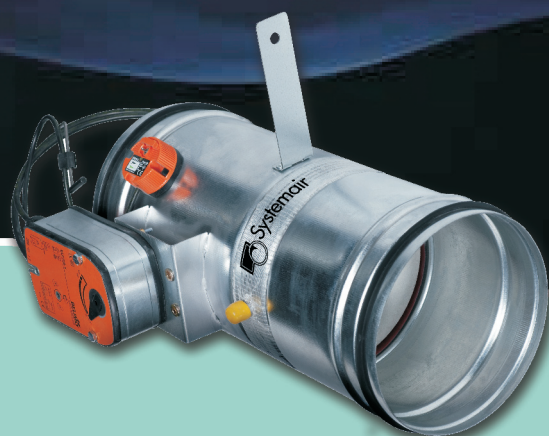
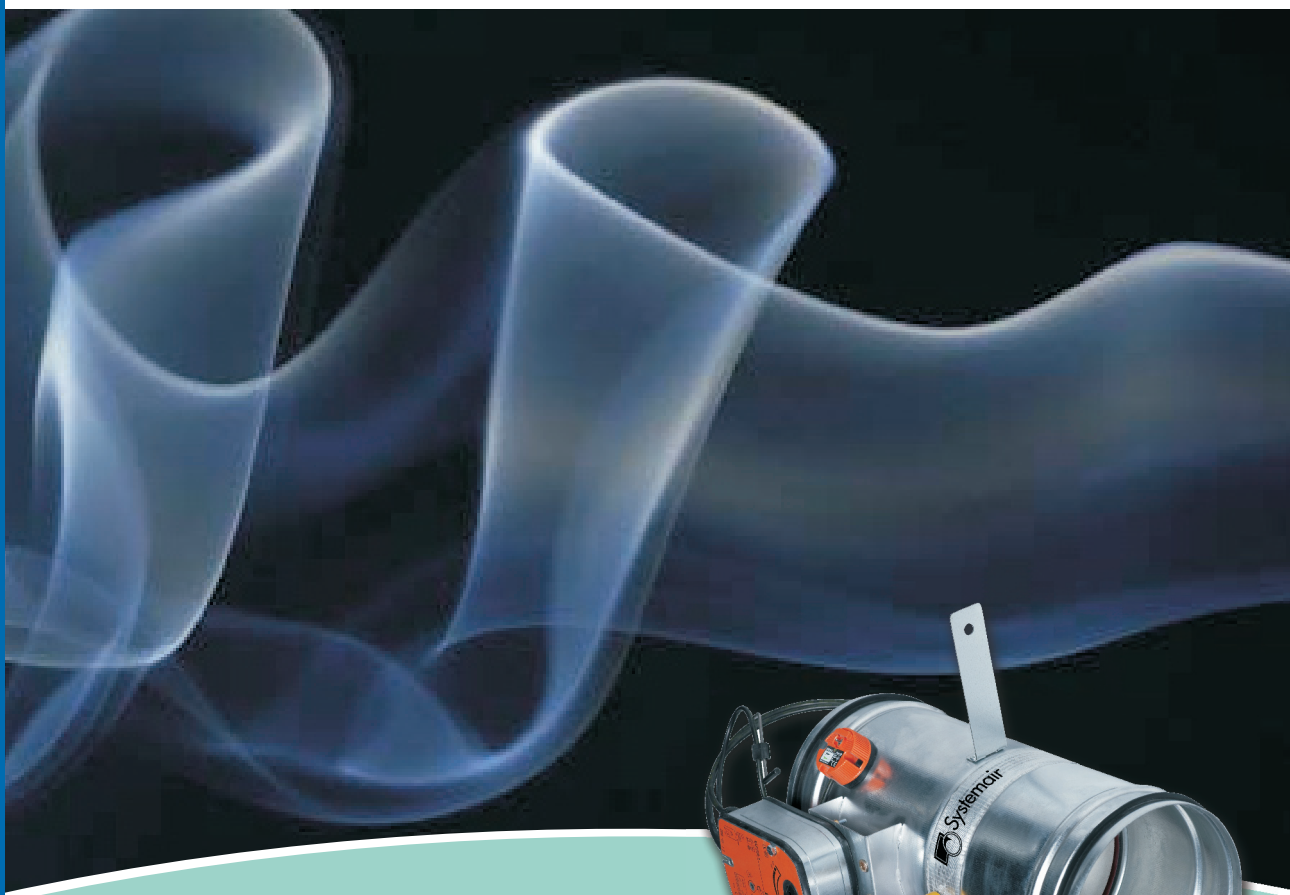
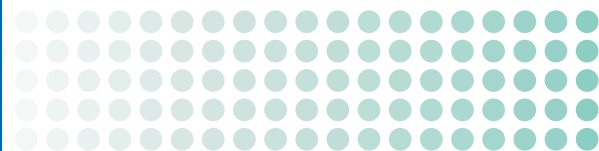


Systemair Fire Dampers



PK-I-R-EI60S, -EI90S and -EI120S

Systemair fire dampers are manufactured to comply with latest European standards. With wide product range and sizes for 60, 90 and 120 minute resistance for round and rectangular ducting. All dampers as standard are designed and certified for EI-S performance conformity.

PK-I fire damper units are designed to be imbedded into the fire partition walls. Installation of these units are clearly indicated in the installation, operation and maintenance manual. All units as standard are available with manual rearmament lever and actuator driven with optional accessories such as micro-switches, electromagnets and communication controller units.

Fire dampers with manual rearmament lever

Fire damper is set to closed position when thermal-fuse link is ruptured or a signal is given to the electromagnet to release the damper blade from open to closed position.

After closure, the damper blade is secured in closed position mechanically and can only be opened manually. Fusible link manufactured and secured in position with a bi-metal solution which is designed to release the link mechanism when the air temperatures in the duct system reach 72 °C with tolerance $\pm 1,5$ °C for the period of 30 to 60 seconds. The damper can be closed electronically by sending a signal to electromagnet from BMS.

Actuator driven fire dampers

Fire damper can be equipped with actuator that closes the damper blade on demand of Building Management System or signal received from electrothermal fuse. As standard all actuator fitted fire dampers are equipped with electrothermal fuse, which when reaching or exceeds ambient temperature of 72 °C with tolerance $\pm 1,5$ °C, releases actuator and closes the damper blade to safe position within 60 seconds.



Round fire dampers are conformed to EN 1366-2 and are classified as in accordance to EN 13501-3:2005:

<p>PK-I-EI60S-ZV, DV7-T and DV9-T For dimensions Ø100mm to Ø630mm Certification No: SK01-ZSV-0159 Classification report No: FIRES-CR-004-08-NURE, FIRES-CR-089-09-AUPE Test report No: FIRES-FR-229-07-AUNE, FIRES-FR-095-09-AUNE2</p>	EI 60 (ve ho i ↔ o) S
<p>PK-I-EI90S-ZV, DV7-T and DV9-T For Dimensions Ø100mm to Ø1000mm Certification No: SK01-ZSV-0160 Classification report No: FIRES-CR-202-07-NURE4, FIRES-CR-003-08-NURE4, FIRES-CR-090-09-AUPE Test report No: FIRES-FR-201-07-AUNE, FIRES-FR-117-09-AUNE2</p>	EI 90 (ve ho i ↔ o) S
<p>PK-I-EI120S-ZV, DV7-T and DV9-T For Dimensions Ø200mm to Ø1000mm Certification No: SK01-ZSV-0161 Classification report No: FIRES-CR-202-07-NURE4, FIRES-CR-219-07-NURE4, FIRES-CR-005-08-NURE Test report No: FIRES-FR-160-07-AUNE, FIRES-FR-229-07-AUNE</p>	EI 120 (ve ho i ↔ o) S

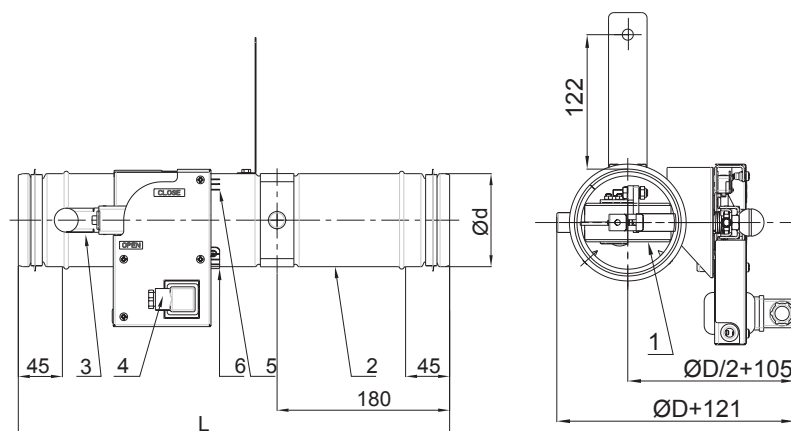


Fig1: Manual operated fire damper construction for sizes Ø100 to Ø225 mm

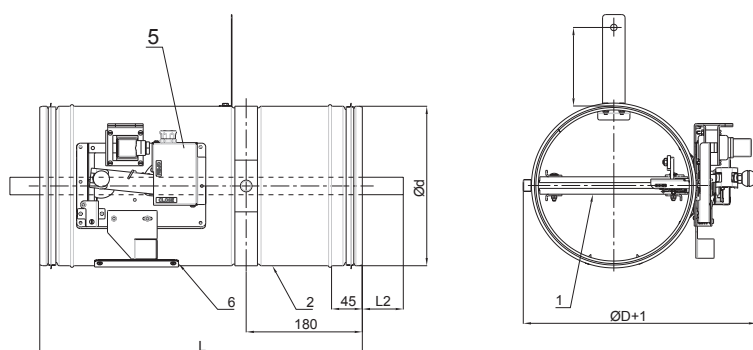


Fig2: Manual operated fire damper construction for sizes Ø250 to Ø1000 mm

Damper Codes and Types

ZV; Basic model with manual operating lever with spring return release driven by a fusible thermal link set at 72 °C.

Optional extras:

DV1; Closed position indication with 24V contact switch
DV1-2; Open and Closed position indication with 24 V contact switches

DV2; Closed position indication with 230V contact switch

DV2-2; Open and Closed position indication with 230 V contact switches

DV3; Electromagnetic release mechanism 24 V. (Release on cut-off of electricity)

DV4; Electromagnetic release mechanism 230V. (Release on cut-off of electricity)

DV5; Electromagnetic release mechanism 24 V. (Release on cut-off of electricity) plus 24 V Endswitch indicating damper Closed position

DV5-2; Electromagnetic release mechanism 24V. (Release on cut-off of electricity) plus 24V End and Begin-switches indicating damper Closed and Open position

DV6; Electromagnetic release mechanism 230 V. (Release on cut-off of electricity) plus 230 V Endswitch indicating damper Closed position

DV6-2; Electromagnetic release mechanism 230 V. (Release on cut-off of electricity) plus 230V End and Begin-switches indicating damper Closed and Open position

Main dimensions for manual operated round fire dampers

		DN																			
		100	125	160	180	200	225	250	280	315	355	400	450	500	560	630	710	800	900	1000	
L	(mm)	450						500					540				600				
L1	(mm)																			37.5	87.5
L2	(mm)											5	27.5	52.5	77.5	108	143	183	228	278	328
Q	(kg)	3.6	4	4.8	5.2	5.6	6.5	7	8.4	9.4	10.6	12.8	15.5	17.9	20.4	23.7	27.6	33.8	39.8	46.6	

Tab. I Dimensions and weight for manual operated circular fire dampers

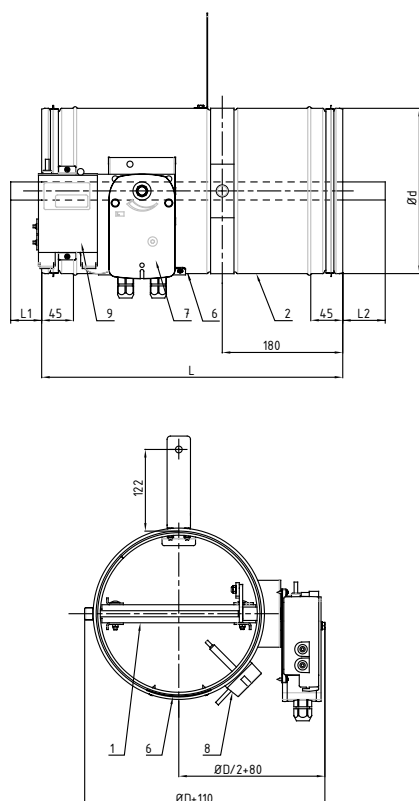


Fig. 3 Actuator operated circular fire damper

Damper parts description:

1. damper blade
2. casing
3. release mechanism (for manufactures ZV and DVI-DV6)
4. electromagnet (for manufactures DV3-DV6)
5. terminal switch (for manufactures DVI, 2,5,6) /two terminal switch (for manufactures DVI-2,2-2,5-2,6-2)
6. inspection (control) lid
7. actuator (for manufactures DV7-T, DV9-T and DV9-TST)
thermo-electrical release device (for manufactures DV7-T, DV9-T and DV9-TST)
8. Thermoelectric fuse
9. Supply and communication unit BKN230-24

Main dimensions for actuator operated round fire dampers

		DN																			
		100	125	160	180	200	225	250	280	315	355	400	450	500	560	630	710	800	900	1000	
L	(mm)	450												500							
L1	(mm)																43	88	138	188	
L2	(mm)											5	28	53	78	108	143	183	228	278	328
Q	(kg)	3.6	4	4.8	5.2	5.6	6.5	7	8.4	9.4	11	13	16	19	22	25	29	35	41	48.1	

Tab. 2 Dimensions and weight for actuator operated circular fire dampers

Actuator operated fire dampers:

DV7-T; Spring return actuator driven fire damper (230 V) complete with thermal release mechanism and auxiliary switches

DV9-T; Spring return actuator driven fire damper (24 V) complete with thermal release mechanism and auxiliary switches

DV9-T-ST; Spring return actuator driven fire damper (24 V) complete with thermal release mechanism, auxiliary switches and Belimo BKN230-24 communication unit

Electrical accessories

BKS1; Communication and control unit BKS24-1B with plug socket ZSO-II for one remotely controlled fire damper (for DV9-T-ST only)

BKS9; Communication and control unit BKS24-9A for up to nine remotely controlled fire dampers (for DV9-T-ST only)

Ordering codes:

		PK-I-R-EI						
Fire resistance class	60S,90S and 120S							
Dimension	ØD							
Operation Type	Manual Reset Lever Switches and Actuators	ZV DvI to Dv9 -T-ST						
Connection Types	Standard Mounting Flanges	0 P						
Control Accessories	Communication and control units	BKS1 BKS9						
Installation Accessories		PR						

NOTE:

E = Casing integrity, I = Insulation class, S = Smoke leakage

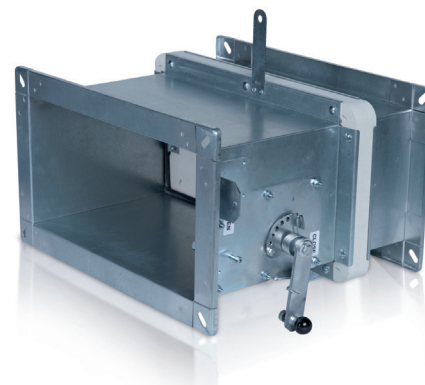
PK-I-S-EI90S and -EI120S

Systemair fire dampers are manufactured to comply with latest European Standards. With wide product range and sizes for 90 and 120 minute resistance for square or rectangular ducting.

All dampers as standard are designed and certified for EI-S performance conformity. PK-I-S fire damper units are designed to be imbedded into the fire partition walls. Installation of these units are clearly indicated in installation, operation and maintenance manual. All units as standard are available with manual rearmament lever and actuator driven with optional accessories such as micro-switches, electromagnets and communication controller units.

Fire dampers with manual rearmament lever

Fire damper is set to closed position when thermal-fuse link is ruptured or a signal is given to the electromagnet to release the damper blade from open to closed position. After closure, the damper blade is secured in closed position mechanically and can only be opened manually. Fusible link manufactured and secured in position with a bi-metal solution which is designed to release the link mechanism when the air temperatures in the duct system reach 72 °C with tolerance $\pm 1,5$ °C for the period of 30 to 60 seconds. The damper can be closed electronically by sending a signal to electromagnet from BMS.



Actuator driven fire dampers

Fire damper can be equipped with actuator that closes the damper blade on demand of Building Management System or signal received from electro-thermal fuse. As standard all actuator fitted fire dampers are equipped with electro-thermal fuse, which when reaching or exceeds ambient temperature of 72 °C with tolerance $\pm 1,5$ °C, releases actuator and closes the damper blade to safe position within 60 seconds.



Square fire dampers are conformed to EN 1366-2 and are classified as in accordance to EN 13501-3:2005:

<p>PK-I-S-EI90S-ZV, DV7-T and DV9-T For dimensions 100 x 100mm to 1600 x 1000mm Certification No: SK01-ZSV-0118 Classification report No: FIRES-CR-202-07-NURE4 Test report No: FIRES-FR-159-07-AUNE, FIRES-FR-161-07-AUNE, FIRES-FR-200-07-AUNE2, FIRES-FR-164-09-AUNS2, FIRES-FR-165-09-AUNS2</p>	EI 90 (ve ho i ↔ o) S
<p>PK-I-S-EI120S-ZV, DV7-T and DV9-T For Dimensions 200 x 200mm to 1600 x 1000mm Certification No: SK01-ZSV-0157 Classification report No: FIRES-CR-202-07-NURE4, FIRES-CR-219-07-NURE4 Test report No: FIRES-FR-159-07-AUNE, FIRES-FR-200-07-AUNE2</p>	EI 120 (ve ho i ↔ o) S

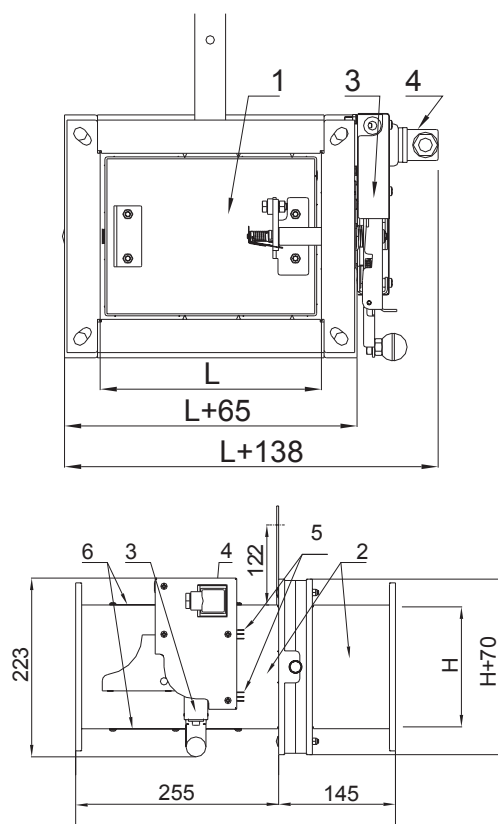


Fig. 4 Manual operated low profile fire damper construction for sizes in table 4

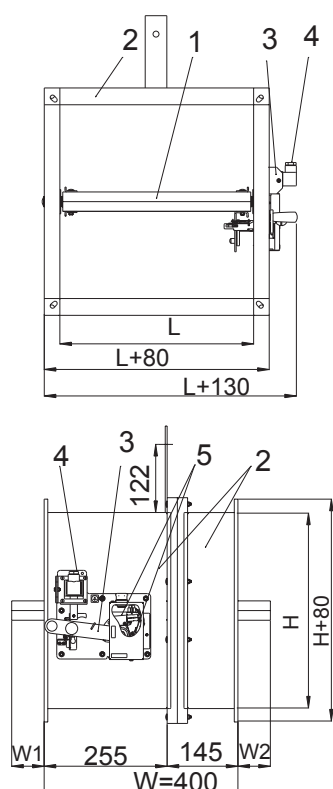


Fig. 5 Manual operated fire damper construction for sizes in table 5

Damper codes and types

ZV; Basic model with manual operating lever with spring return release driven by a fusible thermal link set at 72 °C.

Optional extras:

DVI; Closed position indication with 24V contact switch

DVI-2; Open and Closed position indication with 24V contact switches

DV2; Closed position indication with 230V contact switch

DV2-2; Open and Closed position indication with 230V contact switches

DV3; Electromagnetic release mechanism 24 V. (Release on cutoff of electricity)

DV4; Electromagnetic release mechanism 230 V. (Release on cutoff of electricity)

DV5; Electromagnetic release mechanism 24 V. (Release on cutoff of electricity) plus 24V end-switch indicating damper closed position

DV5-2; Electromagnetic release mechanism 24 V. (Release on cutoff of electricity) plus 24 V end and begin-switches indicating damper closed and open position

DV6; Electromagnetic release mechanism 230 V. (Release on cutoff of electricity) plus 230V end-switch indicating damper closed position

DV6-2; Electromagnetic release mechanism 230V. (Release on cutoff of electricity) plus 230 V end and begin-switches indicating damper closed and open position

Main Dimensions

blade extension		
H	W1 (mm)	W2 (mm)
300		25
400		75
500		125
600	25	175
800	125	275
1000	225	375

Tab. 3 Blade extension in fully open position

H/L	100	150	200	250	300	400	500	600	800
100	5.46	6.14	6.82	7.5	8.18	9.54	10.9	12.3	15
150	6.1	6.85	7.6	8.35	9.1	10.6	12.1	13.6	16.6
200	8.08	8.91							
250	8.74	9.66							
300	9.4	10.4							
400	10.7	11.9							

for actuator version add 2,5 kg weight

Tab. 4 Weight for low profile fire dampers (Fig 4 & 6)

Actuator operated square fire dampers:

DV7-T; Spring return actuator driven fire damper (230 V) complete with thermal release mechanism and auxiliary switches

DV9-T; Spring return actuator driven fire damper (24 V) complete with thermal release mechanism and auxiliary switches

DV9-T-ST; Spring return actuator driven fire damper (24 V) complete with thermal release mechanism, auxiliary switches and Belimo BKN230-24 communication unit

BKSI; Communication and control unit BKS24-1B with plug socket ZSO-11 for one remotely controlled fire damper (for DV9-T-ST only)

BKS9; Communication and control unit BKS24-9A for up to nine remotely controlled fire dampers (for DV9-T-ST only)

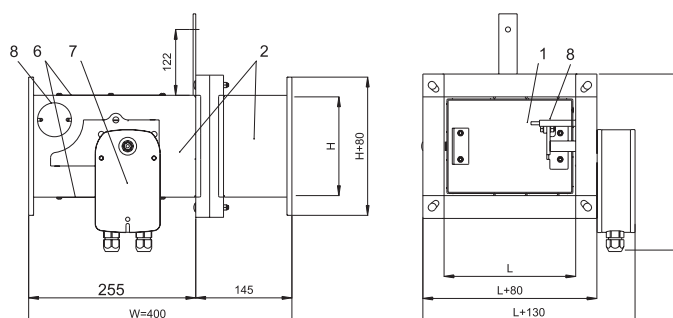


Fig. 6 Actuator operated low profile fire damper construction for sizes in table 4

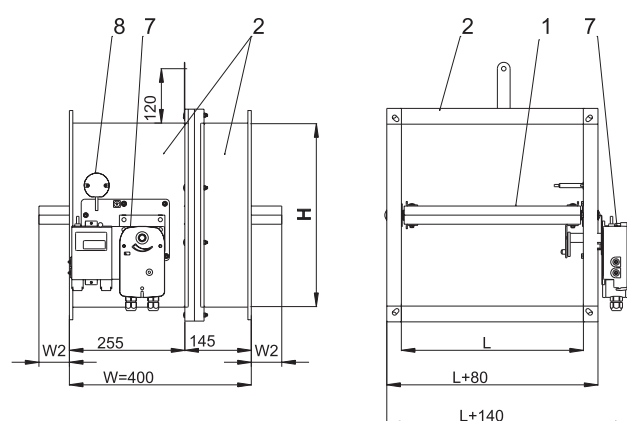


Fig. 7 Actuator operated fire damper construction for sizes in table 5

Ordering codes:

Fire resistance class	90S and 120S
Dimension	L x H
Operation Type	Manual Reset Lever Switches and Actuators Dv1 to Dv9 -T-ST ZV
Control Accessories	Communication and control units BKSI BKS9
Installation Accessories	PR

NOTE:

E = Casing integrity, I = Insulation class, S = Smoke leakage

Unit weight KG

H/L	200	250	300	350	400	450	500	550	600	700	800	900	1000	1100	1200	1400	1500	1600
200	7.75	8.58	9.42	10.3	11.1	11.9	12.8	13.6	14.4	16.1	17.8	19.4	21.1	22.8	24.4	27.8	29.5	31.1
250	8.57	9.49	10.4	11.3	12.2	13.1	14.1	15	15.9	17.7	19.6	21.4	23.2	25	26.9	30.5	34.2	36.1
300	9.38	10.4	11.4	12.3	13.3	14.3	15.3	16.3	17.3	19.3	21.3	23.2	25.2	27.2	30.1	34	36	38
350	10.2	11.3	12.4	13.4	14.5	15.6	16.6	17.7	18.8	20.9	23.1	25.2	27.3	31.4	33.5	37.8	39.9	42.1
400	11	12.2	13.3	14.5	15.6	16.8	17.9	19.1	20.2	22.5	24.8	29	31.3	33.6	35.9	40.5	42.8	45.1
450	11.8	13.1	14.3	15.5	16.7	18	19.2	20.4	21.6	24.1	28.4	30.9	33.3	35.8	38.2	43.1	45.6	48
500	12.7	14	15.3	16.6	17.9	19.2	20.5	21.8	23.1	25.7	30.2	32.8	35.4	38	40.7	45.9	48.5	51.1
550	13.5	14.9	16.3	17.7	19	20.4	21.8	23.2	24.6	29.2	32	34.8	37.5	40.3	43.1	48.6	51.4	54.2
600	14.3	15.8	17.2	18.7	20.2	21.6	23.1	24.5	27.9	30.8	33.7	36.6	39.6	42.5	45.4	51.2	54.2	57.1
700	15.9	17.6	19.2	20.8	22.4	24	25.6	29.1	30.7	34	37.2	40.4	43.7	46.9	50.1	56.6	59.8	63
800	17.6	19.4	21.1	22.9	24.7	28.3	30.1	31.9	33.6	37.2	40.7	44.3	47.8	51.3	54.9	62	65.5	69
900	19.3	21.2	23.1	25	28.9	30.8	32.7	34.6	36.6	40.4	44.3	48.2	52	55.9	59.7	67.5	71.3	75.2
1000	20.9	23	25.1	27.2	31.1	33.2	35.3	37.4	39.5	43.7	47.8	52	56.2	60.3	64.5	72.8	77	81.2

for actuator version add 3 kg weight

Tab. 5 Dimensions and weight for actuator operated square fire dampers



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