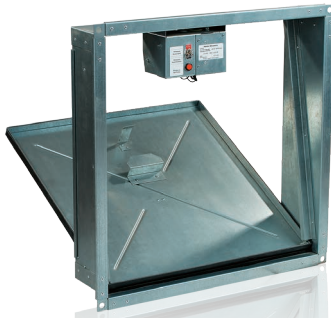


Series  
**KPD**



Normally closed single louvre fire safety dampers, fire resistance rating of 180 minutes at smoke temperature of 600 °C

■ **Application**

The dampers are intended for integration into smoke protection systems of buildings and structures of various purposes for the purpose of removing and compensating combustion products, as well as air support in protective volumes. Valves can be used as smoke valves in accordance with the requirements of SNiP 2.04.05\*, DBN B.1.1-7, DBN B.2.5-56, DBN B.1.2-7, DBN B.2.5-67 in emergency anti-smoke ventilation systems for smoke removal during a fire in order to ensure the evacuation of people from the building at the initial stage of a fire that broke out in one of the premises.

Series  
**KPDU**



Normally closed multiple-louvre fire safety dampers, fire resistance rating of 180 minutes at smoke temperature of 600 °C

■ **Design**

The KPD/KPDU multi-purpose fire safety smoke dampers are rated to resist fire for 180 minutes (E 180) at the temperature of 600 °C.

The damper casing is made of galvanised steel 1.5 mm thick. The dampers are available in the wall-mounted or duct-mounted variant which have either one or two attachment flanges.

The units are available in 3 control variants:

- ▶ **With an electric magnet (220 or 24 V).** The damper opens via a spring when the electric magnet is energized. When the damper reaches

the end position, a limit switch opens the circuit disconnecting the electric magnet from the power mains. The electric magnet must not remain energized for more than 10 seconds. The damper is reset to the safety (closed) position manually by means of a handle. The damper equipped with an electric magnet has a special button for testing the unit performance.

- ▶ **With a 230 or 24 V electric actuator and a return spring.**

The flaps are automatically set to the normal (closed) position when applying voltage to the electric actuator. On a fire alarm signal the electric actuator is de-energized causing its return spring to set the damper to an open position. The electric actuator is equipped with a contact group to signal its end positions. The damper can also be controlled manually and fixed in any position. The unit can be unlocked either manually using a hex wrench or automatically upon power-up.

- ▶ **With a 230 or 24 V electric actuator and two-wire control.**

The damper flap is set from the "Open" to the "Closed" position by an external command sending the voltage phase from one actuator contact to the other. The electric actuator is equipped with a contact group to signal its end positions. The damper can be controlled manually by means of a hex key.

**Note.** The KPDU dampers with a height of 300 and 350 mm have one louvre. The main difference between the KPDU and the KPD dampers with a similar height of 300 and 350 mm is that the method of fastening the flap, which ensures a smaller overhang of the flap beyond the KPDU valve.

**Designation key:** \_\_\_\_\_

**KPDX-XxX-X-X-X**

<p><b>Damper Series</b> KPD – single-louvre KPDU – multi-louvre</p>	<p><b>Actuator Location</b> SN – outside (except for electric magnet EM220/24) VN – inside</p>
<p><b>Damper flow area width [mm]</b> 300; 350; 400; 450; 500; 550; 600; 650; 700; 750; 800; 850; 900; 950; 1000; 1050; 1100; 1150; 1200; 1250; 1300; 1350; 1400</p>	<p><b>Actuator Type</b> EM220/24 – 220/24 V electric magnet PNP24 – 24 V NENUTEC electric actuator with a return spring PNP230 – 230 V NENUTEC electric actuator with a return spring PN24 – actuator NENUTEC 24 V two-position (opened/closed) PN230 – actuator NENUTEC 230 V two-position (opened/closed) PV24 – 24 V BELIMO open/close electric actuator PV230 – 230 V BELIMO open/close electric actuator PVP24 – 24 V BELIMO electric actuator with a return spring PVP230 – 230 V BELIMO electric actuator with a return spring PS24 – 24 V SIEMENS open/close electric actuator PS230 – 230 V SIEMENS open/close electric actuator PSP24 – 24 V SIEMENS electric actuator with a return spring PSP230 – 230 V SIEMENS actuator with a return spring</p>
<p><b>Damper flow area height [mm]</b> 300; 350; 400; 450; 500; 550; 600; 650; 700; 750; 800; 850; 900; 950; 1000; 1050; 1100; 1150; 1200; 1250; 1300; 1350; 1400</p>	
<p><b>Number of flanges</b> 1 – one 2 – two</p>	

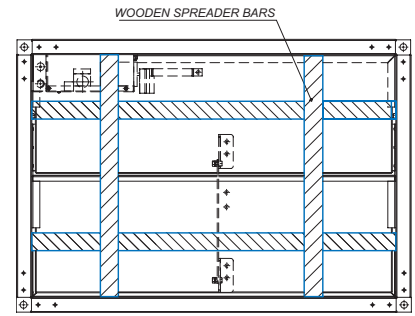
**■ Mounting**

The dampers are not intended for installation in air ducts and ducts of spaces with fire and explosion hazard categories A and B, in local exhaust systems designed for extraction of flammable and explosive mixtures as well as in systems containing environments more aggressive to plain carbon steels than air or those containing sticky and fibrous materials. Fire safety dampers are only intended for installation in systems subjected to regular cleaning to prevent formation of flammable deposits. The damper must be installed into the building envelope structure in accordance with the applicable standards and regulations.

The seal fire resistance must be at least equal to that of the building envelope. When preparing for

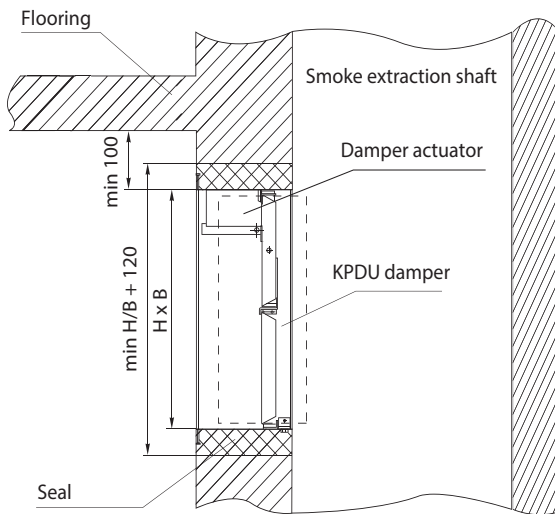
installation the damper casing should be fitted with wooden spreader bars to prevent deformation, torsional twisting or geometry perturbation of the casing which may result in louvre jamming and, eventually, loss of the damper functionality.

Upon completion of the damper brickwork envelope in the smoke shaft, fire division wall or flooring and complete cure (setting) of the sealing, remove the wooden spreader bars and check the louvre for free and frictionless opening. Ground the damper, connect the electric magnet or electric actuator (depending on the modification) to the automatic fire-fighting system and test the damper actuation.

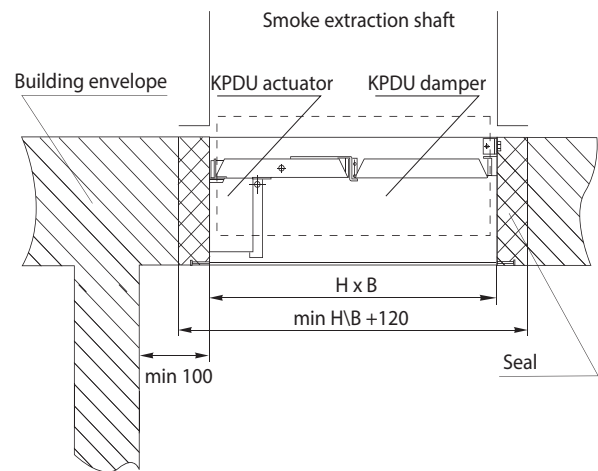


**■ Installation recommendation for the KPDU damper with an internally connected actuator**

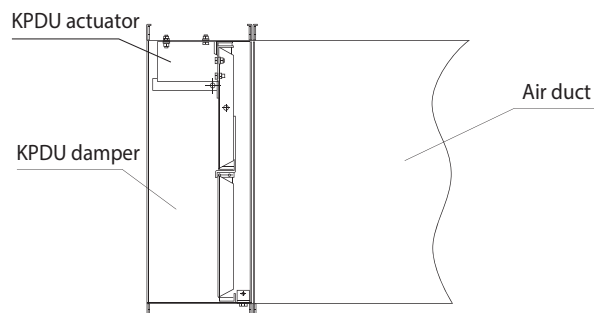
– in vertical building structures



– in horizontal building structures

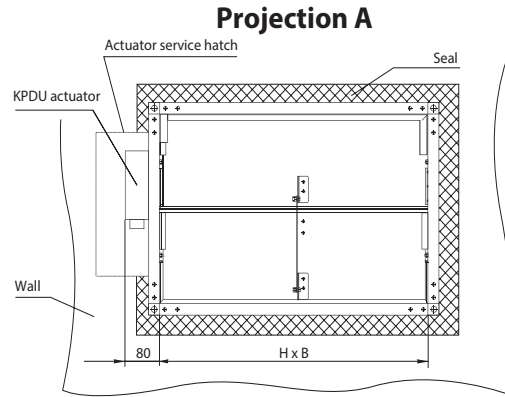
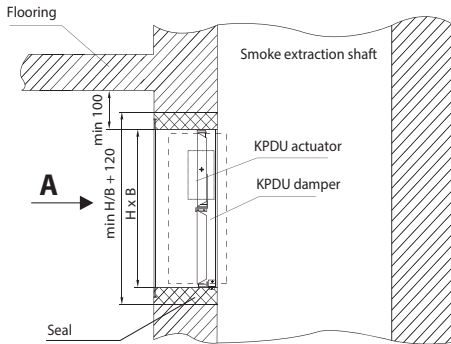


– duct modification with an air duct

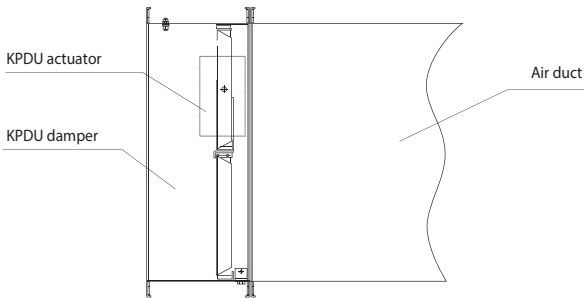


■ Installation recommendation for the KPDU damper with an externally located actuator

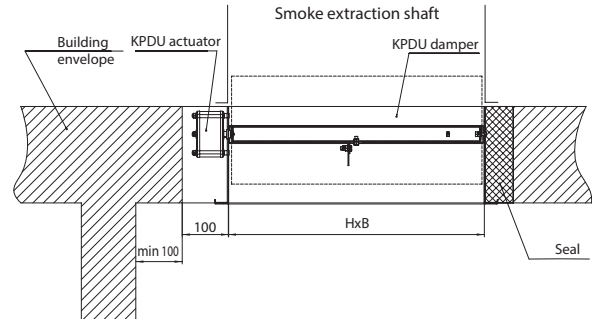
– in vertical building structures



– duct modification with an air duct

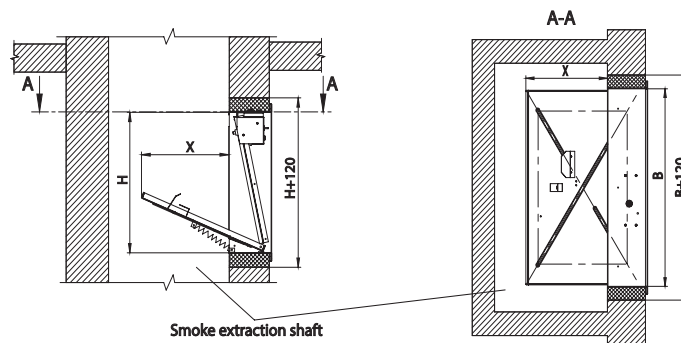


– in horizontal building structures

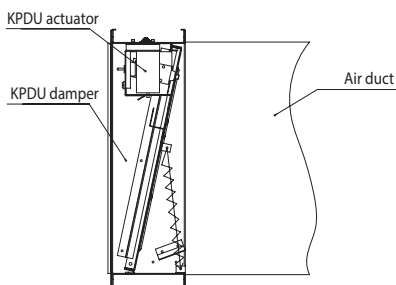


■ Installation recommendation for the KPD damper with an internally connected actuator

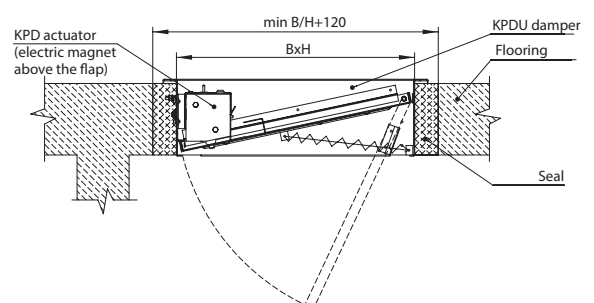
– in vertical building structures



– duct modification with an air duct



– in horizontal building structures

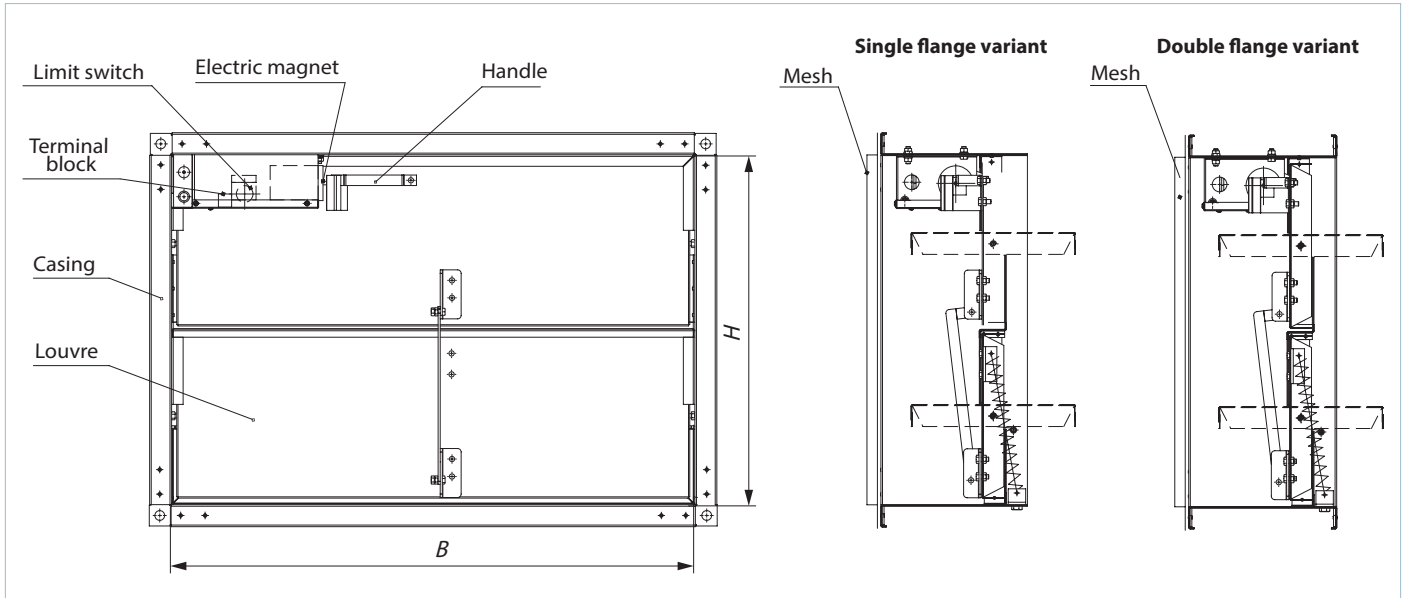


**Possible KPDU damper variants**

► **The KPDU damper with an internally installed electric magnet (220/24 V), single or double flange:**  
The single-flange variant is intended for wall or ceiling mounting irrespective of the dimensional orientation.

Upon the test or emergency damper actuation the louvres can only be manually reset to the initial position. The double-flange variant is intended for duct installation irrespective of the dimensional orientation.

Upon the test or emergency damper actuation the louvres can only be manually reset to the initial position.



**Flow area of the KPDU smoke exhaust damper with an electric magnet [m<sup>2</sup>]**

B/H	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	
300	0.06																							
350	0.08	0.1																						
400	0.09	0.11	0.12																					
450	0.1	0.13	0.14	0.16																				
500	0.12	0.14	0.15	0.18	0.2																			
550	0.13	0.16	0.17	0.2	0.23	0.25																		
600	0.15	0.18	0.19	0.22	0.25	0.28	0.31																	
650	0.16	0.19	0.2	0.24	0.27	0.3	0.33	0.37																
700	0.17	0.21	0.22	0.26	0.29	0.33	0.36	0.4	0.43															
750	0.19	0.22	0.24	0.28	0.31	0.35	0.39	0.43	0.46	0.48														
800	0.2	0.24	0.26	0.3	0.34	0.38	0.42	0.46	0.5	0.51	0.55													
850	0.21	0.26	0.27	0.31	0.36	0.4	0.44	0.48	0.53	0.54	0.59	0.63												
900	0.23	0.27	0.29	0.33	0.38	0.42	0.47	0.51	0.56	0.58	0.62	0.67	0.71											
950	0.24	0.29	0.31	0.35	0.4	0.45	0.5	0.54	0.59	0.61	0.66	0.71	0.75	0.8										
1000	0.25	0.3	0.32	0.37	0.42	0.47	0.52	0.57	0.62	0.64	0.69	0.74	0.79	0.84	0.89									
1050	0.26	0.32	0.34	0.39	0.44	0.5	0.55	0.6	0.65	0.67	0.73	0.78	0.83	0.88	0.93	0.99								
1100	0.27	0.33	0.35	0.41	0.46	0.52	0.57	0.63	0.68	0.7	0.76	0.82	0.87	0.92	0.97	1.04	1.11							
1150	0.28	0.35	0.37	0.43	0.48	0.55	0.6	0.66	0.71	0.73	0.8	0.86	0.91	0.96	1.01	1.1	1.17	1.25						
1200	0.29	0.36	0.38	0.45	0.5	0.57	0.62	0.69	0.74	0.76	0.83	0.9	0.95	1	1.05	1.16	1.23	1.32	1.4					
1250	0.3	0.38	0.4	0.47	0.52	0.6	0.65	0.72	0.77	0.79	0.87	0.94	0.99	1.04	1.09	1.22	1.29	1.39	1.47	1.55				
1300	0.31	0.39	0.41	0.49	0.54	0.62	0.67	0.75	0.8	0.82	0.9	0.98	1.03	1.08	1.13	1.28	1.35	1.46	1.54	1.63	1.71			
1350	0.32	0.41	0.43	0.51	0.56	0.65	0.7	0.78	0.83	0.85	0.94	1.02	1.07	1.12	1.17	1.34	1.41	1.53	1.61	1.71	1.79	1.88		
1400	0.33	0.42	0.44	0.53	0.58	0.67	0.72	0.81	0.86	0.88	0.97	1.06	1.11	1.16	1.21	1.4	1.47	1.6	1.68	1.79	1.87	1.97	2.06	

**Note:** Select the damper of the required cross-section BxH according to the completed table cells. Since the damper can be installed in any spatial position, a change of the height and width (B and H values) orientation may enable selection of a damper with a cross-section beyond the completed cell range.  
**For example, a 700x500 damper can be ordered as 500x700.**

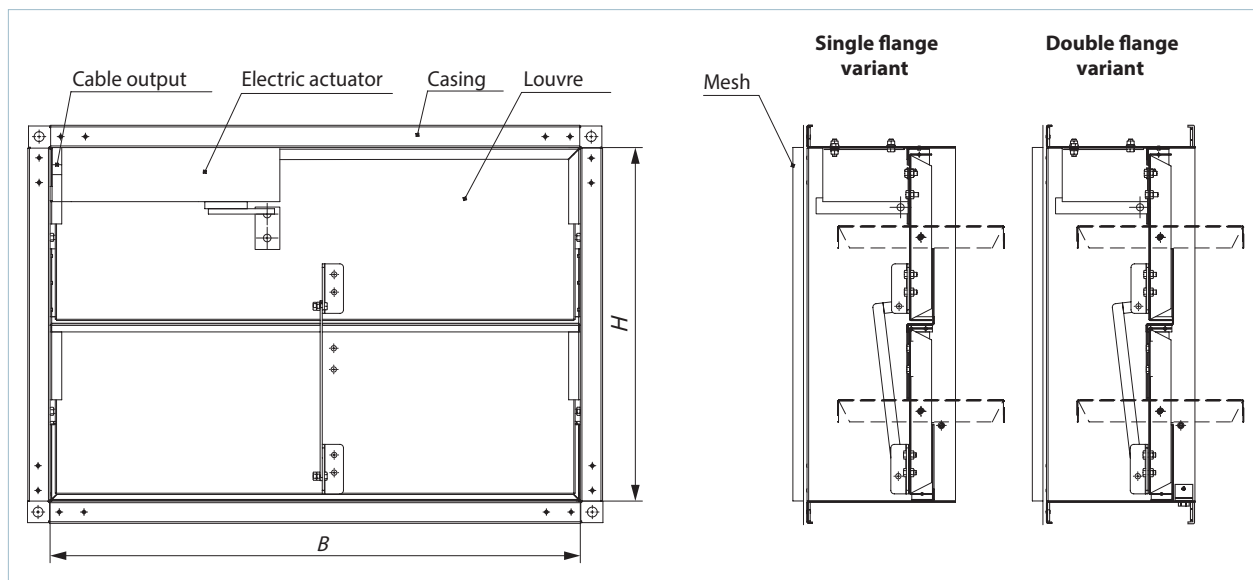
## MULTI-PURPOSE FIRE SAFETY SMOKE DAMPERS

### ► The KPDU damper with an electric actuator (230 or 24 V) installed inside the damper, single or double flange:

The single flange variant is intended for wall or ceiling mounting irrespective of the dimensional orientation.

The double flange variant is intended for duct installation irrespective of the dimensional orientation. The louvres of dampers equipped with a two-position electric actuator are set to the "open" or "closed" position by an external actuating signal.

After a test or emergency actuation the louvres of dampers equipped with an electric actuator with a return spring can return to the initial position automatically upon feeding the supply voltage.



Flow area of the KPDU smoke exhaust damper with an electric actuator installed inside the damper [m<sup>2</sup>]

B/H	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	
300	0.06																							
350	0.08	0.1																						
400	0.09	0.11	0.12																					
450	0.1	0.13	0.14	0.16																				
500	0.12	0.14	0.15	0.18	0.2																			
550	0.13	0.16	0.17	0.2	0.23	0.25																		
600	0.15	0.18	0.19	0.22	0.25	0.28	0.31																	
650	0.16	0.19	0.2	0.24	0.27	0.3	0.33	0.37																
700	0.17	0.21	0.22	0.26	0.29	0.33	0.36	0.4	0.43															
750	0.19	0.22	0.24	0.28	0.31	0.35	0.39	0.43	0.46	0.48														
800	0.2	0.24	0.26	0.3	0.34	0.38	0.42	0.46	0.5	0.51	0.55													
850	0.21	0.26	0.27	0.31	0.36	0.4	0.44	0.48	0.53	0.54	0.59	0.63												
900	0.23	0.27	0.29	0.33	0.38	0.42	0.47	0.51	0.56	0.58	0.62	0.67	0.71											
950	0.24	0.29	0.31	0.35	0.4	0.45	0.5	0.54	0.59	0.61	0.66	0.71	0.75	0.8										
1000	0.25	0.3	0.32	0.37	0.42	0.47	0.52	0.57	0.62	0.64	0.69	0.74	0.79	0.84	0.89									
1050	0.26	0.32	0.34	0.39	0.44	0.5	0.55	0.6	0.65	0.67	0.73	0.78	0.83	0.88	0.93	0.99								
1100	0.27	0.33	0.35	0.41	0.46	0.52	0.57	0.63	0.68	0.7	0.76	0.82	0.87	0.92	0.97	1.04	1.11							
1150	0.28	0.35	0.37	0.43	0.48	0.55	0.6	0.66	0.71	0.73	0.8	0.86	0.91	0.96	1.01	1.1	1.17	1.25						
1200	0.29	0.36	0.38	0.45	0.5	0.57	0.62	0.69	0.74	0.76	0.83	0.9	0.95	1	1.05	1.16	1.23	1.32	1.4					
1250	0.3	0.38	0.4	0.47	0.52	0.6	0.65	0.72	0.77	0.79	0.87	0.94	0.99	1.04	1.09	1.22	1.29	1.39	1.47	1.55				
1300	0.31	0.39	0.41	0.49	0.54	0.62	0.67	0.75	0.8	0.82	0.9	0.98	1.03	1.08	1.13	1.28	1.35	1.46	1.54	1.63	1.71			
1350	0.32	0.41	0.43	0.51	0.56	0.65	0.7	0.78	0.83	0.85	0.94	1.02	1.07	1.12	1.17	1.34	1.41	1.53	1.61	1.71	1.79	1.88		
1400	0.33	0.42	0.44	0.53	0.58	0.67	0.72	0.81	0.86	0.88	0.97	1.06	1.11	1.16	1.21	1.4	1.47	1.6	1.68	1.79	1.87	1.97	2.06	

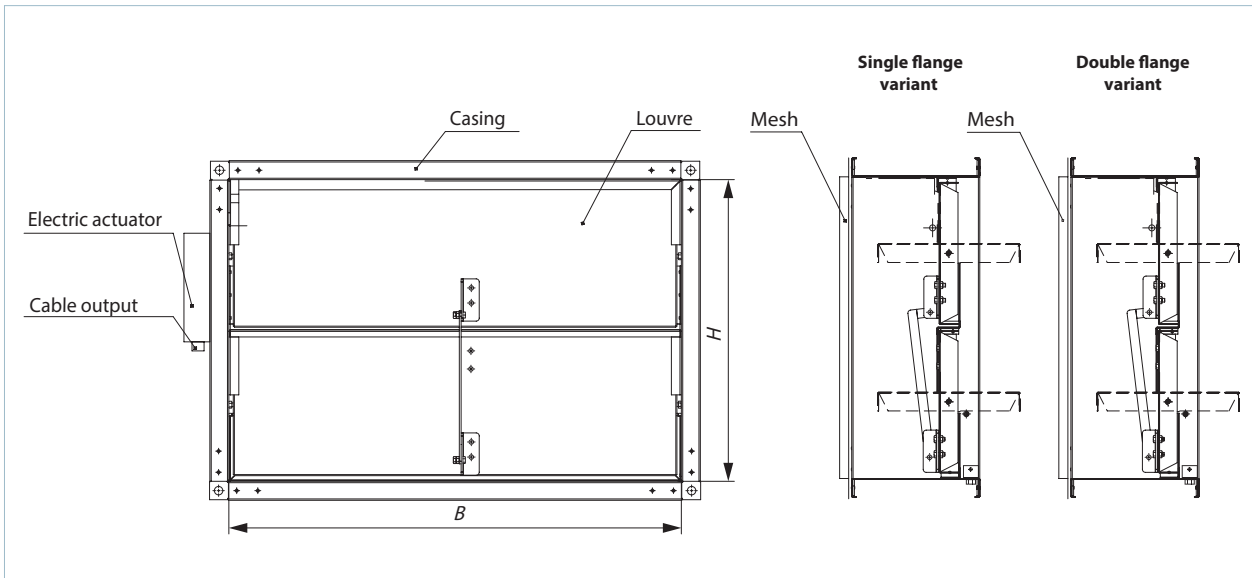
**Note:** Select the damper of the required cross-section BxH according to the completed table cells. Since the damper can be installed in any spatial position, a change of the height and width (B and H values) orientation may enable selection of a damper with a cross-section beyond the completed cell range. **For example**, a 700x500 damper can be ordered as 500x700.

► **The KPDU damper with an electric actuator (230 or 24 V) installed outside the damper, single or double flange:**

The single flange variant is intended for wall or ceiling mounting irrespective of the dimensional orientation.

The double flange variant is intended for duct installation irrespective of the dimensional orientation. The louvres of dampers equipped with a two-position electric actuator are set to the "open" or "closed" position by an external actuating signal.

After a test or emergency actuation the louvres of dampers equipped with an electric actuator with a return spring can return to the initial position automatically upon feeding the supply voltage.



**Flow area of the KPDU smoke exhaust damper with an electric actuator installed outside the damper [m<sup>2</sup>]**

B/H	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	
300	0.07																							
350	0.09	0.11																						
400	0.1	0.12	0.13																					
450	0.11	0.14	0.15	0.17																				
500	0.13	0.15	0.16	0.19	0.21																			
550	0.14	0.17	0.18	0.21	0.24	0.26																		
600	0.16	0.18	0.2	0.23	0.26	0.29	0.32																	
650	0.17	0.2	0.21	0.25	0.28	0.31	0.34	0.38																
700	0.18	0.22	0.23	0.27	0.3	0.34	0.37	0.41	0.44															
750	0.2	0.23	0.25	0.29	0.32	0.36	0.4	0.44	0.47	0.49														
800	0.21	0.25	0.27	0.31	0.35	0.39	0.43	0.47	0.51	0.52	0.56													
850	0.22	0.27	0.28	0.32	0.37	0.41	0.45	0.49	0.54	0.55	0.6	0.64												
900	0.24	0.28	0.3	0.34	0.39	0.43	0.48	0.52	0.57	0.59	0.63	0.68	0.72											
950	0.25	0.3	0.32	0.36	0.41	0.46	0.51	0.55	0.6	0.62	0.67	0.72	0.76	0.81										
1000	0.26	0.31	0.33	0.38	0.43	0.48	0.53	0.58	0.63	0.65	0.7	0.75	0.8	0.85	0.9									
1050	0.27	0.33	0.35	0.4	0.45	0.51	0.56	0.61	0.66	0.68	0.74	0.79	0.84	0.89	0.94	1								
1100	0.28	0.34	0.36	0.42	0.47	0.53	0.58	0.64	0.69	0.71	0.77	0.83	0.88	0.93	0.98	1.05	1.12							
1150	0.29	0.36	0.38	0.44	0.49	0.56	0.61	0.67	0.72	0.74	0.81	0.87	0.92	0.97	1.02	1.11	1.18	1.26						
1200	0.3	0.37	0.39	0.46	0.51	0.58	0.63	0.7	0.75	0.77	0.84	0.91	0.96	1.01	1.06	1.17	1.24	1.33	1.41					
1250	0.31	0.39	0.41	0.48	0.53	0.61	0.66	0.73	0.78	0.8	0.88	0.95	1	1.05	1.1	1.23	1.3	1.4	1.48	1.56				
1300	0.32	0.4	0.42	0.5	0.55	0.63	0.68	0.76	0.81	0.83	0.91	0.99	1.04	1.09	1.14	1.29	1.36	1.47	1.55	1.64	1.72			
1350	0.33	0.42	0.44	0.52	0.57	0.66	0.71	0.79	0.84	0.86	0.95	1.03	1.08	1.13	1.18	1.35	1.42	1.54	1.62	1.72	1.8	1.89		
1400	0.34	0.43	0.45	0.54	0.59	0.68	0.73	0.82	0.87	0.89	0.98	1.07	1.12	1.17	1.22	1.41	1.48	1.61	1.69	1.8	1.88	1.98	2.07	

**Note:** Select the damper of the required cross-section BxH according to the completed table cells. Since the damper can be installed in any spatial position, a change of the height and width (B and H values) orientation may enable selection of a damper with a cross-section beyond the completed cell range. **For example, a 700x500 damper can be ordered as 500x700.**



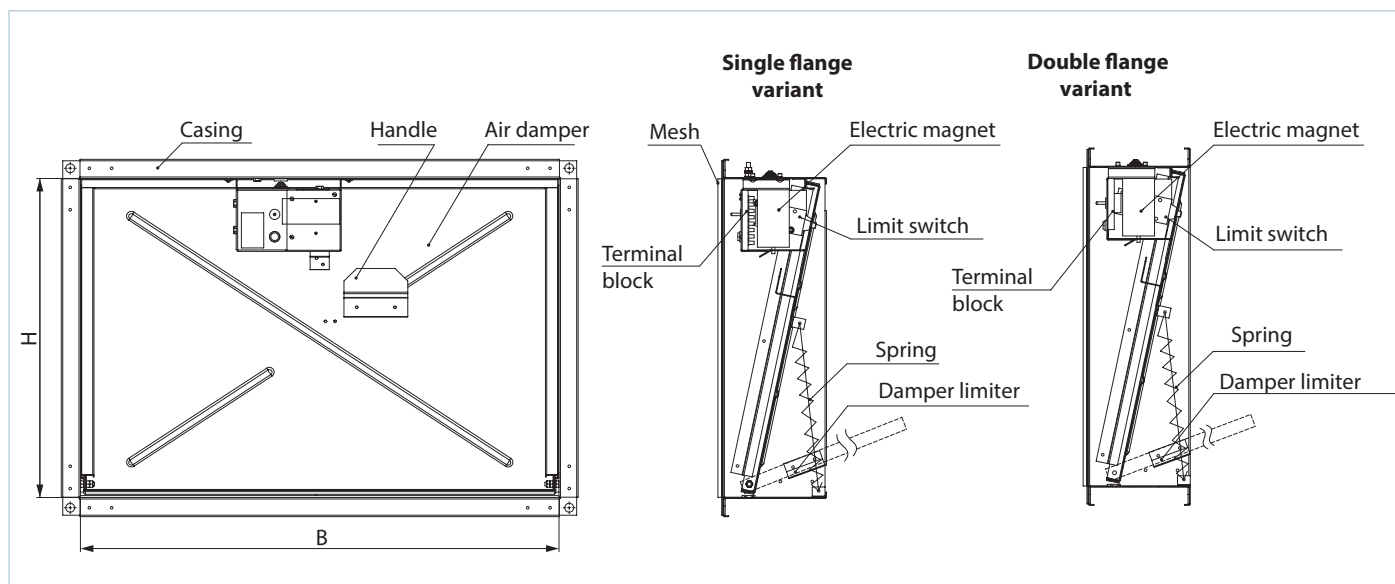
■ Possible KPD Damper variants

▶ The KPD damper with an internally installed electric magnet (220/24 V), single or double flange:

The single flange variant is intended for wall or ceiling installation.

The damper must be installed according to the installation guidelines for the KPD damper with an internal actuator (see page 24). Upon the test or emergency damper actuation, the louvres can only be

manually reset to initial position. The double flange variant is intended for duct installation. Upon the test or emergency damper actuation the louvres can only be manually reset to the initial position.



Flow area of the KPD smoke exhaust damper with an electric magnet [m²]

B/H	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	
300	0.06																							
350	0.08	0.1																						
400	0.09	0.11	0.12																					
450	0.1	0.13	0.14	0.16																				
500	0.12	0.14	0.15	0.18	0.2																			
550	0.13	0.16	0.17	0.2	0.23	0.25																		
600	0.15	0.18	0.19	0.22	0.25	0.28	0.31																	
650	0.16	0.19	0.2	0.24	0.27	0.3	0.33	0.37																
700	0.17	0.21	0.22	0.26	0.29	0.33	0.36	0.4	0.43															
750	0.19	0.22	0.24	0.28	0.31	0.35	0.39	0.43	0.46	0.48														
800	0.2	0.24	0.26	0.3	0.34	0.38	0.42	0.46	0.5	0.51	0.55													
850	0.21	0.26	0.27	0.31	0.36	0.4	0.44	0.48	0.53	0.54	0.59	0.63												
900	0.23	0.27	0.29	0.33	0.38	0.42	0.47	0.51	0.56	0.58	0.62	0.67	0.71											
950	0.24	0.29	0.31	0.35	0.4	0.45	0.5	0.54	0.59	0.61	0.66	0.71	0.75	0.8										
1000	0.25	0.3	0.32	0.37	0.42	0.47	0.52	0.57	0.62	0.64	0.69	0.74	0.79	0.84	0.89									
1050	0.26	0.32	0.34	0.39	0.44	0.5	0.55	0.6	0.65	0.67	0.73	0.78	0.83	0.88	0.93	0.99								
1100	0.27	0.33	0.35	0.41	0.46	0.52	0.57	0.63	0.68	0.7	0.76	0.82	0.87	0.92	0.97	1.04	1.11							
1150	0.28	0.35	0.37	0.43	0.48	0.55	0.6	0.66	0.71	0.73	0.8	0.86	0.91	0.96	1.01	1.1	1.17	1.25						
1200	0.29	0.36	0.38	0.45	0.5	0.57	0.62	0.69	0.74	0.76	0.83	0.9	0.95	1	1.05	1.16	1.23	1.32	1.4					
1250	0.3	0.38	0.4	0.47	0.52	0.6	0.65	0.72	0.77	0.79	0.87	0.94	0.99	1.04	1.09	1.22	1.29	1.39	1.47	1.55				
1300	0.31	0.39	0.41	0.49	0.54	0.62	0.67	0.75	0.8	0.82	0.9	0.98	1.03	1.08	1.13	1.28	1.35	1.46	1.54	1.63	1.71			
1350	0.32	0.41	0.43	0.51	0.56	0.65	0.7	0.78	0.83	0.85	0.94	1.02	1.07	1.12	1.17	1.34	1.41	1.53	1.61	1.71	1.79	1.88		
1400	0.33	0.42	0.44	0.53	0.58	0.67	0.72	0.81	0.86	0.88	0.97	1.06	1.11	1.16	1.21	1.4	1.47	1.6	1.68	1.79	1.87	1.97	2.06	

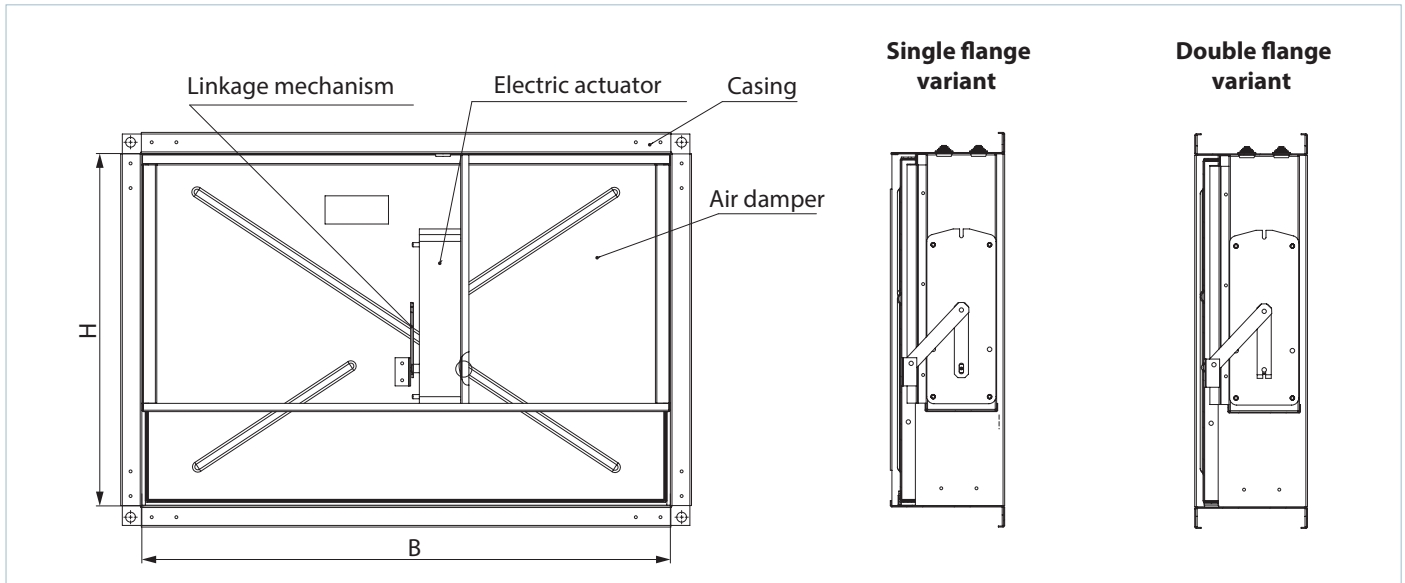
**Note:** Select the damper of the required cross-section BxH according to the completed table cells. Since the damper can be installed in any spatial position any change of the height and width (B and H values) orientation may enable selection of a damper with a cross-section beyond the completed cell range. **For example, a 700x500 damper can be ordered as 500x700.**

► **The KPD damper with an electric actuator (230 or 24 V) installed inside the damper, single or double flange:**

The single flange variant is intended for wall or ceiling mounting irrespective of the dimensional orientation.

The double flange variant is intended for duct installation irrespective of the dimensional orientation. The louvres of dampers equipped with a two-position electric actuator are set to the "open" or "closed" position by an external actuating signal. After

a test or emergency actuation the louvres of dampers equipped with an electric actuator with a return spring can return to the initial position automatically upon feeding the supply voltage.



**Flow area of the KPD smoke exhaust damper with an electric actuator installed inside the damper [m<sup>2</sup>]**

B/H	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	
300	0.06																							
350	0.08	0.1																						
400	0.09	0.11	0.12																					
450	0.1	0.13	0.14	0.16																				
500	0.12	0.14	0.15	0.18	0.2																			
550	0.13	0.16	0.17	0.2	0.23	0.25																		
600	0.15	0.18	0.19	0.22	0.25	0.28	0.31																	
650	0.16	0.19	0.2	0.24	0.27	0.3	0.33	0.37																
700	0.17	0.21	0.22	0.26	0.29	0.33	0.36	0.4	0.43															
750	0.19	0.22	0.24	0.28	0.31	0.35	0.39	0.43	0.46	0.48														
800	0.2	0.24	0.26	0.3	0.34	0.38	0.42	0.46	0.5	0.51	0.55													
850	0.21	0.26	0.27	0.31	0.36	0.4	0.44	0.48	0.53	0.54	0.59	0.63												
900	0.23	0.27	0.29	0.33	0.38	0.42	0.47	0.51	0.56	0.58	0.62	0.67	0.71											
950	0.24	0.29	0.31	0.35	0.4	0.45	0.5	0.54	0.59	0.61	0.66	0.71	0.75	0.8										
1000	0.25	0.3	0.32	0.37	0.42	0.47	0.52	0.57	0.62	0.64	0.69	0.74	0.79	0.84	0.89									
1050	0.26	0.32	0.34	0.39	0.44	0.5	0.55	0.6	0.65	0.67	0.73	0.78	0.83	0.88	0.93	0.99								
1100	0.27	0.33	0.35	0.41	0.46	0.52	0.57	0.63	0.68	0.7	0.76	0.82	0.87	0.92	0.97	1.04	1.11							
1150	0.28	0.35	0.37	0.43	0.48	0.55	0.6	0.66	0.71	0.73	0.8	0.86	0.91	0.96	1.01	1.1	1.17	1.25						
1200	0.29	0.36	0.38	0.45	0.5	0.57	0.62	0.69	0.74	0.76	0.83	0.9	0.95	1	1.05	1.16	1.23	1.32	1.4					
1250	0.3	0.38	0.4	0.47	0.52	0.6	0.65	0.72	0.77	0.79	0.87	0.94	0.99	1.04	1.09	1.22	1.29	1.39	1.47	1.55				
1300	0.31	0.39	0.41	0.49	0.54	0.62	0.67	0.75	0.8	0.82	0.9	0.98	1.03	1.08	1.13	1.28	1.35	1.46	1.54	1.63	1.71			
1350	0.32	0.41	0.43	0.51	0.56	0.65	0.7	0.78	0.83	0.85	0.94	1.02	1.07	1.12	1.17	1.34	1.41	1.53	1.61	1.71	1.79	1.88		
1400	0.33	0.42	0.44	0.53	0.58	0.67	0.72	0.81	0.86	0.88	0.97	1.06	1.11	1.16	1.21	1.4	1.47	1.6	1.68	1.79	1.87	1.97	2.06	

**Note:** Select the damper of the required cross-section BxH according to the completed table cells. Since the damper can be installed in any spatial position any change of the height and width (B and H values) orientation may enable selection of a damper with a cross-section beyond the completed cell range.  
**For example, a 700x500 damper can be ordered as 500x700.**



## MULTI-PURPOSE FIRE SAFETY SMOKE DAMPERS

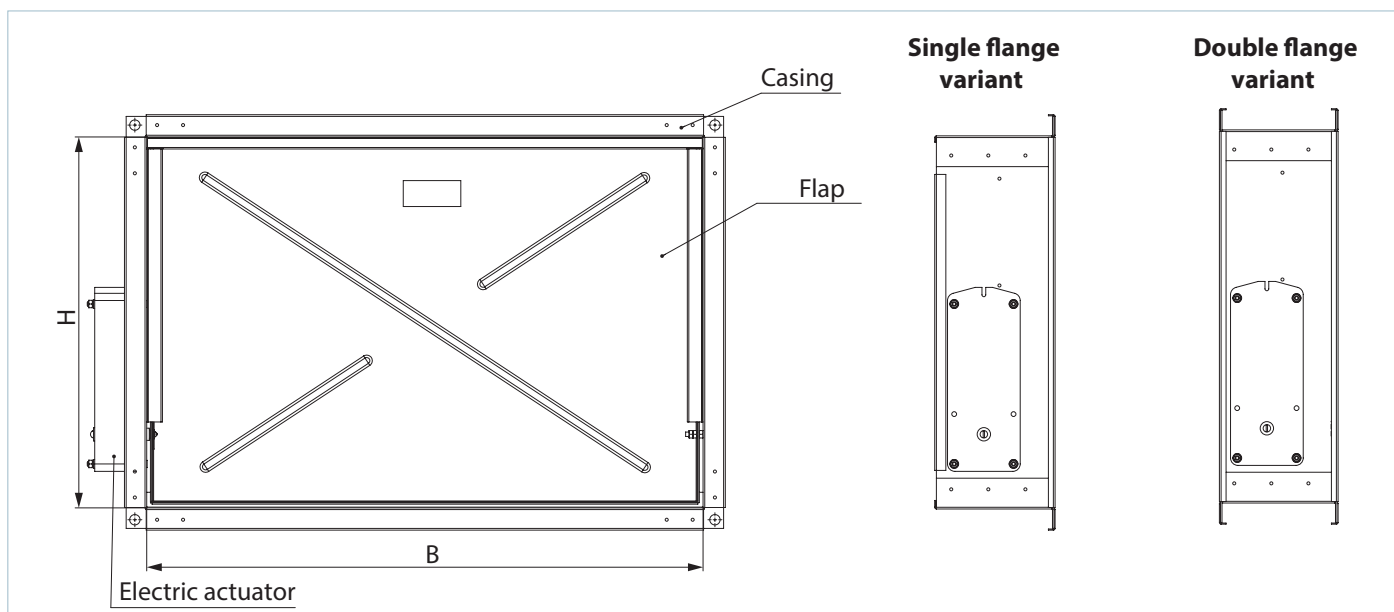
### ► The KPD damper with an electric actuator (230 or 24 V) installed outside the damper, single or double flange:

The single flange variant is intended for wall or ceiling mounting irrespective of the dimensional orientation.

The double flange variant is intended for duct installation irrespective of the dimensional orientation.

The louvres of dampers equipped with a two-position electric actuator are set to the "open" or "closed" position by an external actuating signal.

After a test or emergency actuation the louvres of dampers equipped with an electric actuator with a return spring can return to the initial position automatically upon feeding the supply voltage.



Flow area of the KPD smoke exhaust damper with an electric actuator installed outside the damper [m<sup>2</sup>]

B/H	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	
300	0.07																							
350	0.09	0.11																						
400	0.1	0.12	0.13																					
450	0.11	0.14	0.15	0.17																				
500	0.13	0.15	0.16	0.19	0.21																			
550	0.14	0.17	0.18	0.21	0.24	0.26																		
600	0.16	0.18	0.2	0.23	0.26	0.29	0.32																	
650	0.17	0.2	0.21	0.25	0.28	0.31	0.34	0.38																
700	0.18	0.22	0.23	0.27	0.3	0.34	0.37	0.41	0.44															
750	0.2	0.23	0.25	0.29	0.32	0.36	0.4	0.44	0.47	0.49														
800	0.21	0.25	0.27	0.31	0.35	0.39	0.43	0.47	0.51	0.52	0.56													
850	0.22	0.27	0.28	0.32	0.37	0.41	0.45	0.49	0.54	0.55	0.6	0.64												
900	0.24	0.28	0.3	0.34	0.39	0.43	0.48	0.52	0.57	0.59	0.63	0.68	0.72											
950	0.25	0.3	0.32	0.36	0.41	0.46	0.51	0.55	0.6	0.62	0.67	0.72	0.76	0.81										
1000	0.26	0.31	0.33	0.38	0.43	0.48	0.53	0.58	0.63	0.65	0.7	0.75	0.8	0.85	0.9									
1050	0.27	0.33	0.35	0.4	0.45	0.51	0.56	0.61	0.66	0.68	0.74	0.79	0.84	0.89	0.94	1								
1100	0.28	0.34	0.36	0.42	0.47	0.53	0.58	0.64	0.69	0.71	0.77	0.83	0.88	0.93	0.98	1.05	1.12							
1150	0.29	0.36	0.38	0.44	0.49	0.56	0.61	0.67	0.72	0.74	0.81	0.87	0.92	0.97	1.02	1.11	1.18	1.26						
1200	0.3	0.37	0.39	0.46	0.51	0.58	0.63	0.7	0.75	0.77	0.84	0.91	0.96	1.01	1.06	1.17	1.24	1.33	1.41					
1250	0.31	0.39	0.41	0.48	0.53	0.61	0.66	0.73	0.78	0.8	0.88	0.95	1	1.05	1.1	1.23	1.3	1.4	1.48	1.56				
1300	0.32	0.4	0.42	0.5	0.55	0.63	0.68	0.76	0.81	0.83	0.91	0.99	1.04	1.09	1.14	1.29	1.36	1.47	1.55	1.64	1.72			
1350	0.33	0.42	0.44	0.52	0.57	0.66	0.71	0.79	0.84	0.86	0.95	1.03	1.08	1.13	1.18	1.35	1.42	1.54	1.62	1.72	1.8	1.89		
1400	0.34	0.43	0.45	0.54	0.59	0.68	0.73	0.82	0.87	0.89	0.98	1.07	1.12	1.17	1.22	1.41	1.48	1.61	1.69	1.8	1.88	1.98	2.07	

**Note:** Select the damper of the required cross-section BxH according to the completed table cells. Since the damper can be installed in any spatial position any change of the height and width (B and H values) orientation may enable selection of a damper with a cross-section beyond the completed cell range.

**For example,** a 700x500 damper can be ordered as 500x700.

### ■ Technical specifications of the electric magnet

Parameter name	Parameter value
Rated voltage [V]	220/24
Rated current at the ambient temperature of 25±10 °C [A]	0.6/5.5
Armature stroke [mm]	10±1
Armature release time [seconds]	2
Tractive force [N]	45
Maximum active power consumption at 220 V [W]	600
Maximum total power consumption at 220 V [W]	1200
Maximum total power consumption at 24 V [W]	60

### ■ Main technical specifications of BELIMO electric actuators with a return spring

Technical data	Basic models		Models with increased torque	
Rated voltage	AC/DC 24 V	AC 230 V	AC/DC 24 V	AC 230 V
Rated voltage range	AC 19.2...28.8 V DC 21.6...28.8 V	AC 198...264 V	AC 19.2...28.8 V DC 21.6...28.8 V	AC 198...264 V
Rated voltage frequency AC	50/60 Hz			
Power consumption in rest position [W]	1.4	2.0	2	3
Power consumption in operation [W]	4.0	4.5	7	8.5
Maximum design flow [VA]	6	9.0	10	11
Motor torque [Nm]	9		18	
Spring torque [Nm]	7		12	
Protection class	III	II	III	II
Ingress protection rating	IP54			
Auxiliary switches	2 pcs., single-pole, reversible 1 mA...3 (0.5) A, AC 250 V		2 pcs., single-pole, reversible 1 mA...6 (3) A, AC 250 V	
Electric motor connection cable	1 m, 2 x 0.75 mm <sup>2</sup> (halogen-free)			
Auxiliary switch connection cable	1 m, 6 x 0.75 mm <sup>2</sup> (halogen-free)			
Running time spring	20 seconds at -10...+55 °C < 60 seconds at -30...-10 °C		16 seconds at +20 °C	
Running time motor	< 60 s/90°		< 120 s/90°	
Service life	Min. 60 000 emergency positions			
Technical maintenance	Not required			

### ■ Main technical specifications of BELIMO two-position electric actuators

Technical data	Basic models		Models with increased torque	
Rated operation voltage	AC/DC 24 V	AC 230 V	AC/DC 24 V	AC 230 V
Rated voltage range	AC 19.2...28.8 V DC 21.6...28.8 V	AC 198...264 V	AC 19.2...28.8 V DC 21.6...28.8 V	AC 198...264 V
Rated voltage frequency AC	50/60 Hz			
Power consumption in rest position [W]	<0.5	<1	0.5	0.5
Power consumption in operation [W]	7.5	5	12	8
Maximum design capacity [VA]	9	12	18	15
Motor torque [Nm]	15		40	
Holding torque [Nm]	20		50	
Protection class	III	II	III	II
Ingress protection rating	IP54			
Auxiliary switches	2 pcs., single-pole, reversible, 1 mA...3(0.5)A, AC 250 V			
Electric motor connection cable	1 m, 3 x 0.75 mm <sup>2</sup> (halogen-free)			
Auxiliary switch connection cable	1 m, 6 x 0.75 mm <sup>2</sup> (halogen-free)			
Running time	< 30 s/90°		< 60 s/90°	
Service life	Min. 10 000 emergency positions			
Technical maintenance	Not required			

■ Main technical specifications of NENUTEC electric actuators with a return spring

Technical data	Basic models		Models with increased torque	
Rated operation voltage	AC/DC 24 V	AC 230 V	AC/DC 24 V	AC 230 V
Permissible operating voltage tolerance	AC/DC 21.8...26.4 V	AC 209...253 V	AC/DC 21.8...26.4 V	AC 209...253 V
AC mains frequency	50/60 Hz			
Power consumption in rest position [W]	2.5		2	
Power consumption in operation [W]	7		10	
Maximum design capacity [VA]	10		10	
Motor torque [Nm]	5		8	
Spring torque [Nm]				
Protection class	III	II	III	II
Ingress protection rating	IP54			
Auxiliary switches	2 pcs., single-pole, reversible, 3 (1.5) A, AC 250 V			
Electric motor connection cable	1 m, 2 x 0.75 mm <sup>2</sup> (halogen-free)			
Auxiliary switch connection cable	1 m, 6 x 0.75 mm <sup>2</sup> (halogen-free)			
Running time spring	50...70 s (return spring < 20 s)		75...90 s (return spring < 25 s)	
Service life	60 000 emergency positions			

■ Main technical specifications of NENUTEC two-position electric actuators

Technical data	Basic models		Models with increased torque	
Rated operation voltage	AC/DC 24 V	AC 230 V	AC/DC 24 V	AC 230 V
Permissible operating voltage tolerance	AC/DC 21.8...26.4 V	AC 209...253 V	AC/DC 21.8...26.4 V	AC 209...253 V
AC mains frequency	50/60 Hz			
Power consumption in rest position [W]	3.5	3.5	3.5	3.5
Power consumption in operation [W]	8.2	5.2	8.2	5.2
Maximum design capacity [VA]	10		10	
Motor torque [Nm]	15		15	
Spring torque [Nm]				
Protection class	III	II	III	II
Ingress protection rating	IP54			
Auxiliary switches	2 pcs., single-pole, reversible, 3 (1.5) A, AC 250 V			
Electric motor connection cable	1 m, 3 x 0.75 mm <sup>2</sup> (halogen-free)			
Auxiliary switch connection cable	1 m, 6 x 0.75 mm <sup>2</sup> (halogen-free)			
Running time spring	< 30 s			
Service life	60 000 emergency positions			

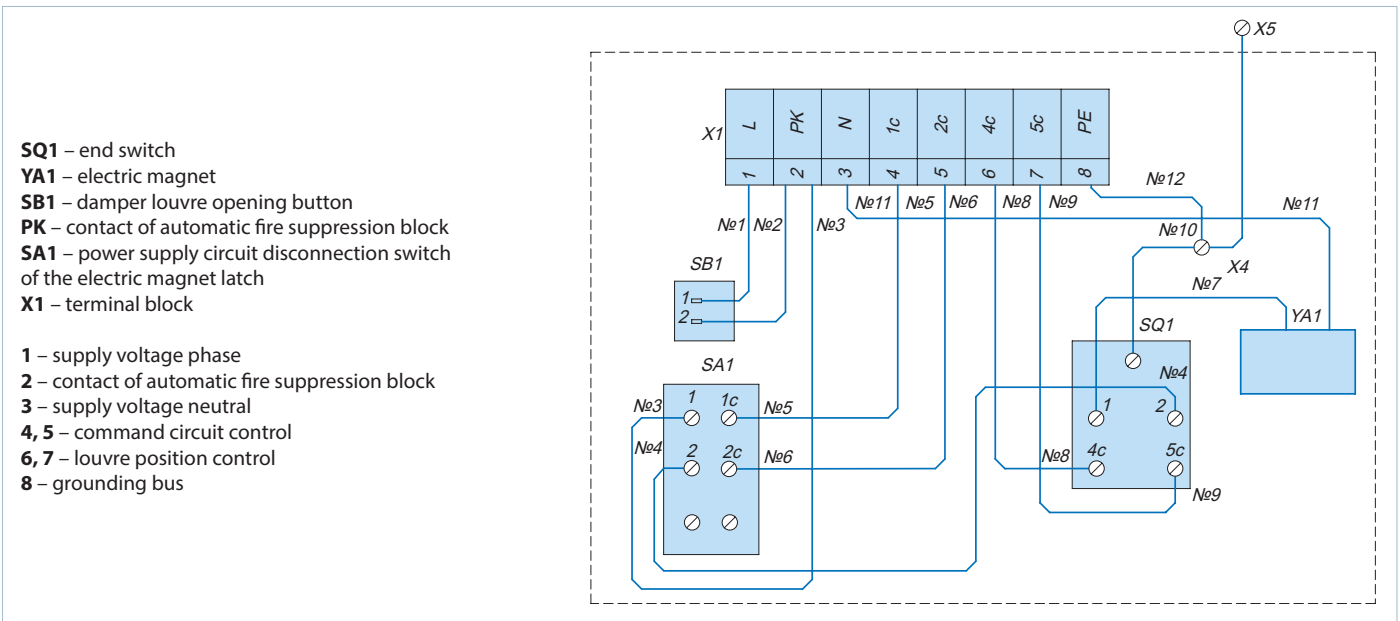
■ Main technical specifications of Siemens electric actuators with a return spring

Technical data	Basic models		Models with increased torque	
Rated operation voltage	AC 24 V/DC 24...48 V	AC 230 V	AC 24 V/DC 24...48 V	AC 230 V
Permissible operating voltage tolerance	AC/DC ±20%	AC ±15%	AC/DC ±20%	AC ±15%
AC mains frequency	50/60 Hz			
Power consumption in rest position [W]	2	3.5	3	4
Power consumption in operation [W]	3.5	4.5	5	6
Maximum design capacity [VA]	5	7	7	8
Motor torque [Nm]	9		18	
Spring torque [Nm]	7		18	
Protection class	III	II	III	II
Ingress protection rating	IP54			
Auxiliary switches	2 pcs., single-pole, reversible, 6(2)A, AC 24...250 V			
Electric motor connection cable	0.9 m, 2 x 0.75 mm <sup>2</sup> (halogen-free)			
Auxiliary switch connection cable	0.9 m, 6 x 0.75 mm <sup>2</sup> (halogen-free)			
Running time spring	15 seconds < 60 seconds at -30...-10 °C			
Running time motor	90 s/90°			
Service life	10 000 emergency positions			
Technical maintenance	Not required			

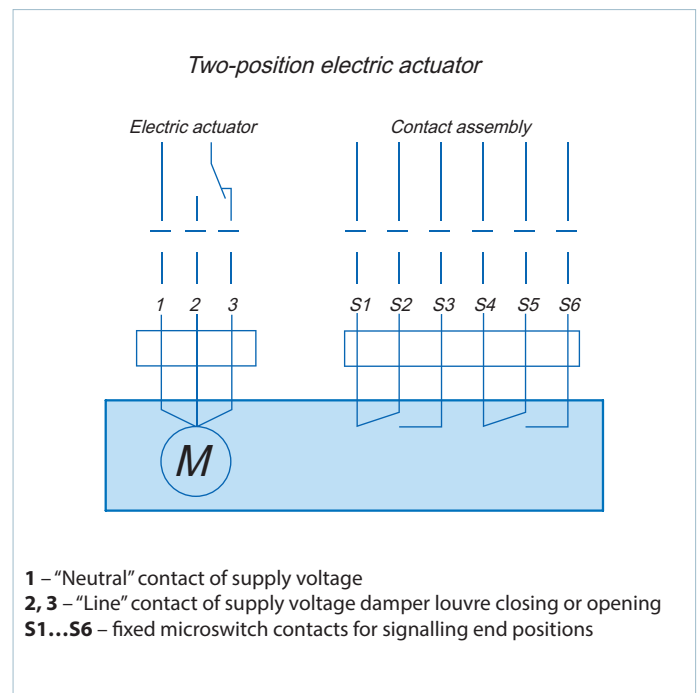
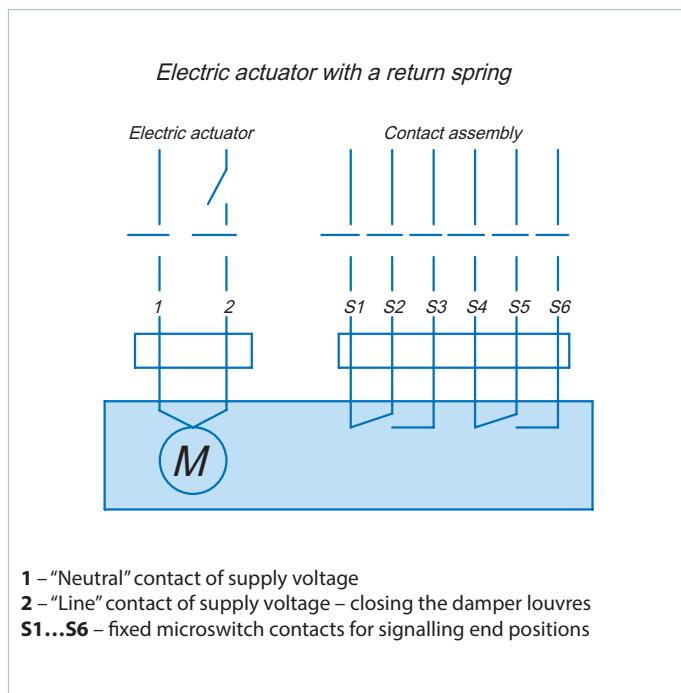
**Note:** The table "Main technical specifications of Siemens two-position electric actuators" is in development. This information is available upon request.

■ Electrical connection diagrams of KPD/KPDU dampers

Electrical connection diagram of KPD/KPDU dampers equipped with an electric magnet



Wiring diagram of KPD/KPDU dampers



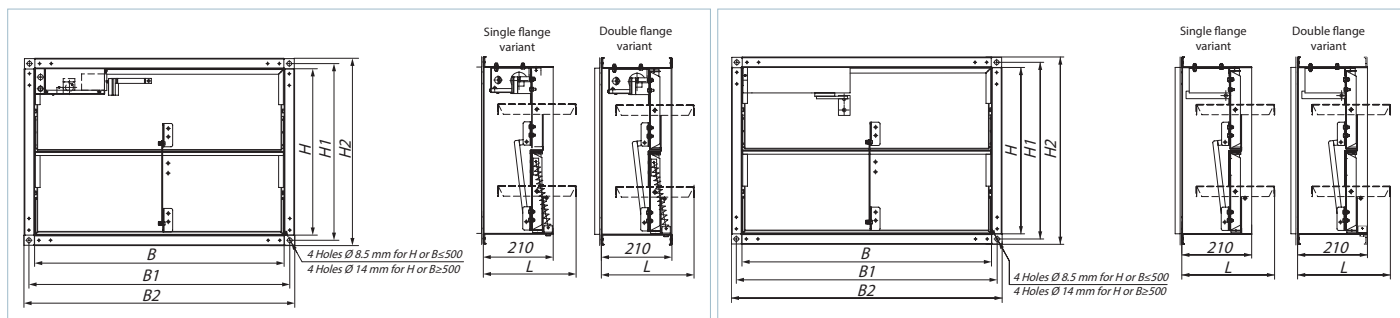
Overall and connecting dimensions of KPDU multi-louvre dampers

Standard damper size	Minimum flow area [m <sup>2</sup> ]	KPDU size [mm]							KPDU weight [kg]	Number of louvres, pcs.
		H	H1	H2	B	B1	B2	L		
300x300	0.06	300	320	340	300	320	340	310	6.5	1
350x350	0.10	350	370	390	350	370	390	345	7.8	
400x400	0.12	400	420	440	400	420	440	260	9.5	2
450x450	0.16	450	470	490	450	470	490	275	11.3	
500x500	0.20	500	520	540	500	520	540	285	12.1	
550x550	0.25	550	580	610	550	580	610	300	14.2	3
600x600	0.31	600	630	660	600	630	660	260	17	
650x650	0.37	650	680	710	650	680	710	270	19	
700x700	0.43	700	730	760	700	730	760	275	20.3	4
750x750	0.48	750	780	810	750	780	810	285	22.1	
800x800	0.55	800	830	860	800	830	860	260	24.8	
850x850	0.63	850	880	910	850	880	910	270	26.8	5
900x900	0.71	900	930	960	900	930	960	275	28.8	
950x950	0.80	950	980	1010	950	980	1010	280	30.8	
1000x1000	0.90	1000	1030	1060	1000	1030	1060	285	32.8	4
1050x1050	0.99	1050	1080	1110	1050	1080	1110	295	34.8	
1100x1100	1.11	1100	1130	1160	1100	1130	1160	305	36.8	
1150x1150	1.25	1150	1180	1210	1150	1180	1210	320	38.8	5
1200x1200	1.40	1200	1230	1260	1200	1230	1260	335	40.8	
1250x1250	1.55	1250	1280	1310	1250	1280	1310	350	42.8	
1300x1300	1.71	1300	1330	1360	1300	1330	1360	260	46.0	5
1350x1350	1.88	1350	1380	1410	1350	1380	1410	270	49.0	
1400x1400	2.06	1400	1430	1460	1400	1430	1460	280	52.0	

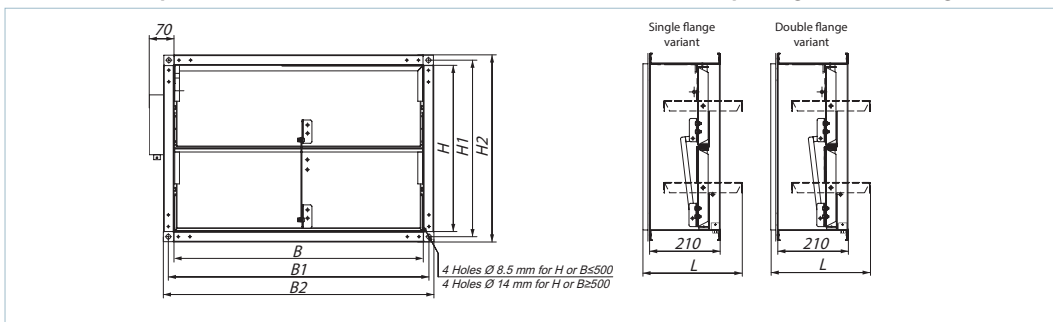
Note: product weight may vary slightly depending on the number of flanges and actuator type.

▶ The KPDU damper with an internally installed electric magnet (220/24 V), single or double flange.

▶ The KPDU damper with an electric actuator (230 or 24 V) installed inside the damper, single or double flange.



▶ The KPDU damper with an electric actuator (230 or 24 V) installed outside the damper, single or double flange.

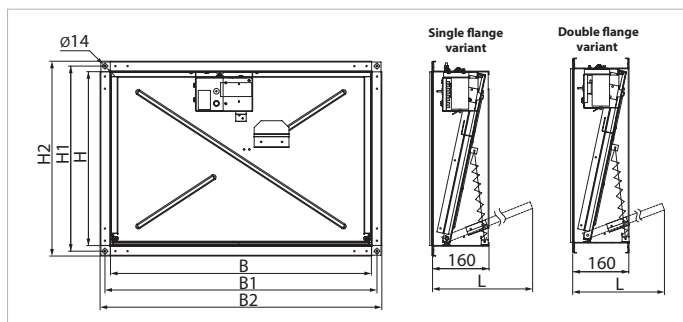


■ Overall and connecting dimensions of the KPD single-louvre damper

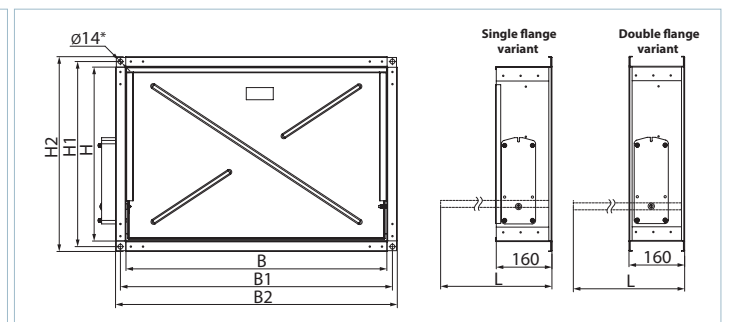
Standard damper size	Minimum flow area [m <sup>2</sup> ]	KPD size [mm]							KPD weight [kg]	Number of louvres, pcs.
		H	H1	H2	B	B1	B2	L		
300x300	0.06	300	330	360	300	330	360	350	6.3	1
350x350	0.10	350	380	410	350	380	410	390	7.3	
400x400	0.12	400	430	460	400	430	460	410	8.2	
450x450	0.16	450	480	510	450	480	510	460	9.5	
500x500	0.20	500	530	560	500	530	560	500	10.6	
550x550	0.25	550	580	610	550	580	610	550	11.9	
600x600	0.31	600	630	660	600	630	660	600	13.2	
650x650	0.37	650	680	710	650	680	710	640	14.5	
700x700	0.43	700	730	760	700	730	760	690	16.0	
750x750	0.48	750	780	810	750	780	810	740	17.4	
800x800	0.55	800	830	860	800	830	860	790	19.0	
850x850	0.63	850	880	910	850	880	910	840	20.6	
900x900	0.71	900	930	960	900	930	960	890	21.4	
950x950	0.80	950	980	1010	950	980	1010	930	23.9	
1000x1000	0.90	1000	1030	1060	1000	1030	1060	980	25.6	
1050x1050	0.99	1050	1080	1110	1050	1080	1110	500	28.0	2
1100x1100	1.11	1100	1130	1160	1100	1130	1160	530	30.5	
1150x1150	1.25	1150	1180	1210	1150	1180	1210	560	33.0	
1200x1200	1.40	1200	1230	1260	1200	1230	1260	580	35.5	
1250x1250	1.55	1250	1280	1310	1250	1280	1310	600	38.0	
1300x1300	1.71	1300	1330	1360	1300	1330	1360	630	42.0	4
1350x1350	1.88	1350	1380	1410	1350	1380	1410	650	45.0	
1400x1400	2.06	1400	1430	1460	1400	1430	1460	680	48.0	

Note: product weight may vary slightly depending on the number of flanges and actuator type.

▶ The KPD damper with an internally installed electric magnet (220/24 V), single or double flange.



▶ The KPD damper with an electric actuator (230 or 24 V) installed outside the damper, single or double flange.



▶ The KPD damper with an electric actuator (230 or 24 V) installed inside the damper, single or double flange.

