Fire-fighting normally closed valve (NC) used in supply and exhaust systems exhaust smoke ventilation and in systems for removing smoke and gas after a fire from premises protected by gas or powder fire extinguishing installations. The smoke valve is designed to open ventilation ducts, which are used to remove smoke. During normal operation of the ventilation system, such valves block the specified sections of the ventilation ducts in which they are installed. In the event of a fire, the smoke valve damper opens and allows smoke to be removed from evacuation areas (for example, corridors) and other smoke-filled areas. It is used in exhaust smoke ventilation systems, installed in the openings of exhaust smoke shafts. The valves are not subject to installation in air ducts and ducts of premises of category

A and B fire and explosion hazards, in local exhaust fans of fire and explosion hazardous mixtures, in systems in which media containing explosives, explosive dust, sticky and fibrous materials are transported.

Design features

* KD valves are produced in general industrial versions;
* Fire resistance limit of fire valves (NC) - EI120;
* The body and damper are made of galvanized steel by default;
* There is a thermally expanding material around the perimeter of the damper on the body, which expands and seals the valve during a fire;
* Actuator type: electromechanical actuator with return spring, electromagnetic actuator, reversible actuator;
* Valve operating temperature from -30 to +40°C in the absence of direct exposure to precipitation and moisture condensation on the damper, placement category 3 according to GOST 15150;
* Maximum relative humidity of ambient air - 98% at 25°C;
* Maximum air flow speed - 15 m/s;

KD valves are manufactured in two types: channel and wall.
Duct valves have two connecting flanges for installation in the ventilation duct. The actuator is placed externally (only with an electric drive) or internally.

Wall valves are manufactured with one connecting flange. Actuator mechanism located inside the valve. They are convenient to mount directly into the wall opening.

Principles of moving the damper from the initial position to the working position
Normal (initial) valve position - is the state of the valve outside the fire effect. For NC or smoke valve - the damper is closed.
Operating (emergency) position of the valve - is the valve state (the position of the valve blade in which it must be) during direct fire exposure (fire condition). For NC or smoke valve - the damper is open/closed.

Ways to move the damper from the initial position to the working position:
* automatic according to fire automation signals;
* remote control;
* manually using the manual cocking handle (included in the mandatory delivery set for the electric drive);
* from the toggle switch at the valve installation location;

Electromechanical actuator with spring return in the starting position constantly is under voltage. In the event of an emergency operation, such an actuator is disconnected from the power supply and automatically moves the damper to the operating position.

Electromagnetic actuator (impulse type) is triggered when power is applied to it, moving the valve flap to the operating position.

Electromechanical reversing drive in the initial position is without voltage. In the case of In the event of an emergency operation, power is supplied to such an actuator and the valve flap is automatically set to the operating position.

Technical specifications

Parameter name	Norm	
Fire resistance limit, not less than	*EI 120*	
Specific resistance to smoke gas penetration at a temperature of 20^{0}C in closed valve position, m^3-kg^{-1}, not less than	*1600*	
Inertia of operation, seconds, no more: ** with electromagnetic drive* ** with electromechanical drive*	 *2* *60*	
Rated supply voltage, V	*24 or 230 (50 Hz)*	
Power consumption, W, no more than: ** with electromagnetic drive* ** with electromechanical drive*	*24* *100* *7*	*230* *200* *8.5*
Degree of protection of the electric drive	*IP54*	

Order example

Fire-prevention smoke valve KD with a working cross-section of 500 mm width, 300 mm height, 1 damper, reversible drive located inside the valve, supply voltage 230V, duct version with decorative aluminum grille.

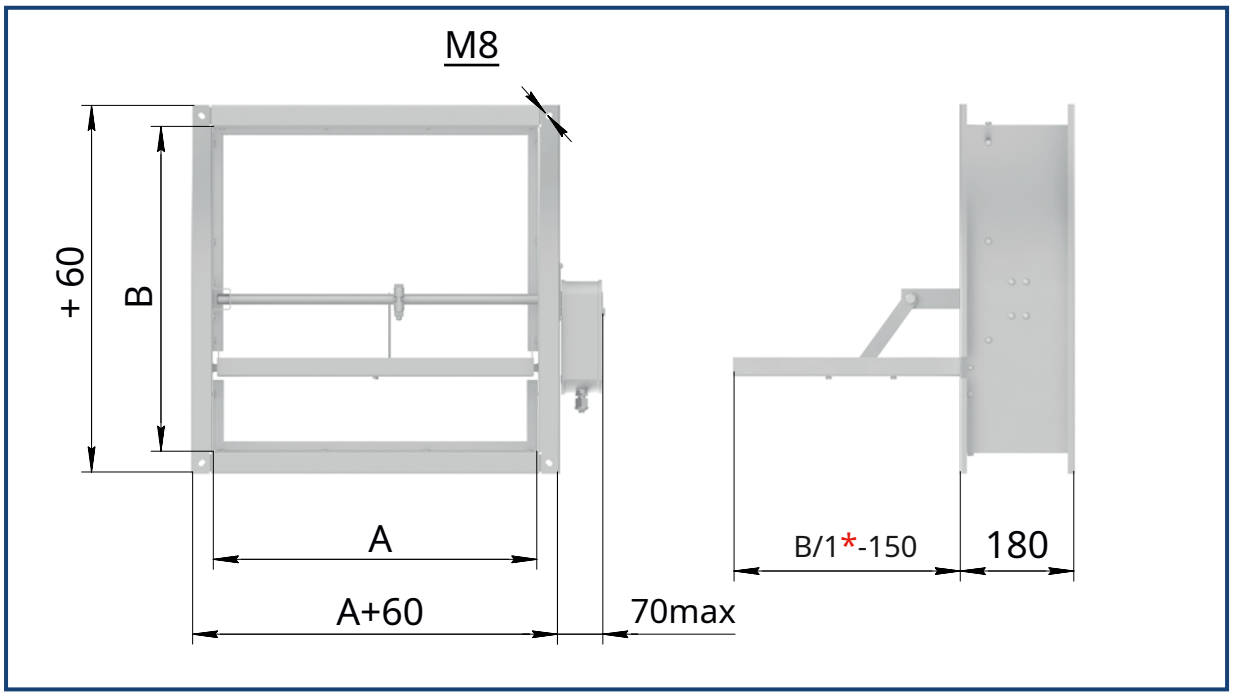
KD - 500x300 - 1 - PV - 230 - 2 - RDA

Name:**KD**
Working cross-section: **AhB**- A - width, mm; B - height, mm
Number of dampers: **1**- one; **2**- two; **3**- three; **0**- execution without flaps protruding for the valve body;
Drive type: **EM**– electromagnet (only inside); **PV**– reversible drive inside; **PN**– reversible drive from the outside; **PVZ**– actuator with spring return inside; **PNZ**– actuator with external spring return;
Supply voltage: **24**-24, B; **230**-230, B;
Implementation: **1**- single-flange, wall-mounted; **2**- double-flange, channel;
Additional equipment: **RDA***- decorative aluminum grille; **RDJ**- louvered grille; **SDA**- anti-vandal mesh;

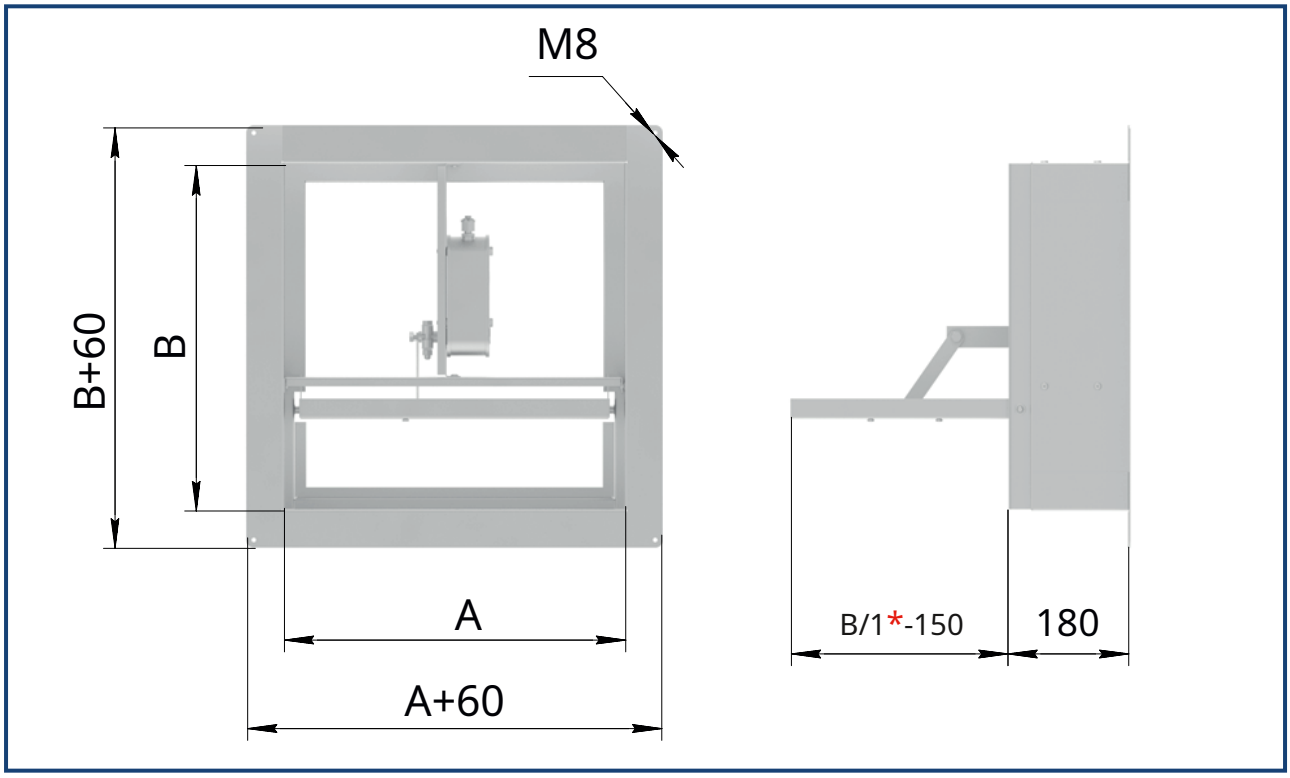
If it is necessary to supply fire valves made of stainless steel (for aggressive acidic environments), you must specify: STAINLESS STEEL in the order line.

* standard painting color RAL9016 matte, if another color is required, indicate RAL at the end of the name;
** made of galvanized steel, if painting is necessary, indicate RAL at the end of the name;

KD smoke damper with external electric drive, duct version



Smoke valve KD with electric drive/electromagnet inside, wall-mounted implementation



* the number of dampers (blades) is selected according to the depth of the smoke exhaust shaft to avoid its blockage;

Smoke control dampers KD

Living cross-section area $m_2$fire-fighting smoke dampers with external electric drive

Width \ Height	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600	1650	1700
300	0.077	0.090	0.105	0.119	0.133	0.147	0.162	0.175	0.190	0.204	0.218	0.215	0.229	0.244	0.257	0.272	0.286	0.300	0.314	0.329	0.342	0.357	0.371	0.385	0.399	0.414	0.427	0.442	0.457
350	0.090	0.107	0.124	0.141	0.158	0.174	0.191	0.208	0.225	0.242	0.258	0.255	0.272	0.289	0.306	0.322	0.339	0.356	0.373	0.390	0.406	0.423	0.440	0.457	0.474	0.490	0.507	0.524	0.541
400	0.105	0.124	0.144	0.163	0.183	0.202	0.222	0.240	0.260	0.279	0.299	0.294	0.314	0.333	0.353	0.372	0.392	0.411	0.431	0.449	0.469	0.488	0.508	0.527	0.547	0.566	0.586	0.605	0.624
450	0.119	0.141	0.163	0.185	0.207	0.229	0.251	0.273	0.295	0.317	0.339	0.334	0.356	0.378	0.400	0.422	0.444	0.466	0.488	0.510	0.532	0.554	0.576	0.599	0.621	0.643	0.665	0.687	0.709
500	0.132	0.158	0.182	0.207	0.231	0.256	0.280	0.306	0.330	0.355	0.379	0.374	0.399	0.423	0.448	0.473	0.498	0.522	0.547	0.571	0.596	0.621	0.646	0.670	0.695	0.719	0.744	0.769	0.793
550	0.147	0.174	0.202	0.229	0.256	0.284	0.311	0.338	0.365	0.393	0.420	0.414	0.441	0.468	0.496	0.523	0.550	0.578	0.605	0.632	0.659	0.687	0.714	0.741	0.769	0.796	0.823	0.851	0.878
600	0.161	0.191	0.221	0.251	0.280	0.311	0.340	0.371	0.400	0.431	0.460	0.454	0.484	0.513	0.544	0.573	0.604	0.633	0.664	0.693	0.723	0.753	0.783	0.813	0.843	0.873	0.903	0.932	0.962
650	0.175	0.208	0.240	0.273	0.306	0.338	0.371	0.403	0.436	0.468	0.501	0.494	0.526	0.559	0.591	0.624	0.656	0.689	0.721	0.754	0.786	0.819	0.852	0.884	0.917	0.949	0.982	1,014	1,047
700	0.189	0.225	0.259	0.295	0.330	0.365	0.400	0.436	0.470	0.506	0.541	0.533	0.568	0.604	0.638	0.674	0.709	0.744	0.779	0.815	0.849	0.885	0.920	0.956	0.990	1,026	1,061	1,096	1,132
750	0.204	0.242	0.279	0.317	0.355	0.393	0.431	0.468	0.506	0.544	0.582	0.573	0.611	0.649	0.687	0.725	0.762	0.800	0.838	0.876	0.914	0.951	0.989	1,027	1,065	1,103	1,140	1,178	1,216
800	0.217	0.258	0.298	0.339	0.379	0.420	0.460	0.501	0.541	0.582	0.622	0.613	0.653	0.694	0.734	0.775	0.815	0.856	0.896	0.937	0.977	1,017	1,057	1,098	1,138	1,179	1,219	1,260	1,301
850	0.232	0.275	0.318	0.361	0.404	0.447	0.490	0.533	0.576	0.620	0.663	0.653	0.696	0.739	0.782	0.825	0.868	0.911	0.954	0.998	1,041	1,084	1,127	1,170	1,213	1,256	1,299	1,342	1,385
900	0.246	0.292	0.337	0.383	0.428	0.475	0.520	0.566	0.611	0.657	0.702	0.692	0.738	0.783	0.830	0.875	0.921	0.966	1,012	1,057	1,104	1,149	1,195	1,240	1,286	1,331	1,378	1,423	1,468
950	0.259	0.308	0.356	0.404	0.453	0.501	0.549	0.597	0.646	0.694	0.742	0.732	0.780	0.828	0.877	0.925	0.973	1,022	1,070	1,118	1,167	1,215	1,263	1,311	1,360	1,408	1,456	1,505	1,553
1000	0.274	0.324	0.376	0.426	0.478	0.528	0.580	0.630	0.681	0.732	0.783	0.772	0.823	0.874	0.925	0.975	1,027	1,077	1,129	1,179	1,231	1,281	1,332	1,383	1,434	1,485	1,536	1,587	1,637
1050	0.288	0.341	0.395	0.448	0.502	0.555	0.609	0.663	0.653	0.701	0.751	0.812	0.865	0.919	0.972	1,026	1,079	1,133	1,187	1,240	1,294	1,347	1,401	1,299	1,347	1,397	1,445	1,494	1,544
1100	0.302	0.358	0.415	0.470	0.527	0.583	0.639	0.636	0.688	0.739	0.791	0.852	0.908	0.964	1,021	1,076	1,133	1,189	1,245	1,301	1,358	1,265	1,317	1,368	1,420	1,471	1,523	1,574	1,625
1150	0.316	0.375	0.434	0.492	0.551	0.562	0.615	0.669	0.723	0.777	0.832	0.891	0.950	1,009	1,068	1,127	1,185	1,114	1,168	1,222	1,276	1,330	1,384	1,439	1,492	1,547	1,600	1,655	1,709
1200	0.331	0.392	0.454	0.476	0.532	0.589	0.645	0.701	0.758	0.815	0.872	0.931	0.992	0.941	0.998	1,054	1,111	1,168	1,224	1,281	1,338	1,394	1,451	1,508	1,565	1,621	1,678	1,735	1,791
1250	0.320	0.379	0.438	0.498	0.557	0.616	0.675	0.734	0.794	0.853	0.912	0.866	0.925	0.985	1,044	1,104	1,162	1,222	1,281	1,341	1,400	1,460	1,518	1,578	1,637	1,697	1,756	1,815	1,875
1300	0.334	0.396	0.458	0.520	0.582	0.644	0.705	0.767	0.828	0.890	0.952	0.904	0.966	1,028	1,090	1,152	1,214	1,276	1,338	1,400	1,462	1,524	1,586	1,647	1,709	1,771	1,833	1,895	1,957
1350	0.349	0.413	0.477	0.542	0.606	0.671	0.735	0.799	0.864	0.928	0.993	0.943	1,007	1,072	1,136	1,201	1,265	1,330	1,394	1,460	1,524	1,589	1,653	1,718	1,782	1,847	1,911	1,976	2,041
1400	0.362	0.429	0.497	0.564	0.631	0.698	0.764	0.832	0.899	0.966	1,033	0.981	1,048	1,115	1,182	1,250	1,317	1,384	1,451	1,518	1,586	1,653	1,720	1,787	1,854	1,922	1,989	2,056	1,157
1450	0.377	0.446	0.516	0.586	0.655	0.726	0.795	0.864	0.935	1,004	1,074	1,020	1,089	1,159	1,229	1,299	1,368	1,439	1,508	1,578	1,647	1,718	1,787	1,857	1,927	1,997	2,066	2,137	2,066
1500	0.391	0.463	0.536	0.608	0.680	0.753	0.824	0.897	0.969	1,042	1,114	1,057	1,130	1,202	1,275	1,347	1,420	1,492	1,565	1,637	1,709	1,782	1,854	1,927	1,999	2,072	2,144	2,217	2,289
1550	0.405	0.480	0.554	0.630	0.705	0.780	0.855	0.929	1,005	1,079	1,155	1,096	1,171	1,246	1,321	1,397	1,471	1,547	1,621	1,697	1,771	1,847	1,922	1,997	2,072	2,147	2,222	2,297	2,373
1600	0.419	0.497	0.574	0.652	0.730	0.807	0.884	0.962	1,040	1,117	1,195	1,134	1,212	1,289	1,367	1,445	1,523	1,600	1,678	1,756	1,833	1,911	1,989	2,066	2,144	2,222	2,300	2,377	2,455
1650	0.434	0.513	0.593	0.674	0.754	0.835	0.915	0.994	1,075	1,155	1,236	1,173	1,253	1,334	1,413	1,494	1,574	1,655	1,735	1,815	1,895	1,976	2,056	2,137	2,217	2,297	2,377	2,458	2,539
1700	0.447	0.530	0.613	0.696	0.779	0.862	0.944	1,027	1,110	1,193	1,276	1,211	1,294	1,377	1,460	1,542	1,625	1,708	1,791	1,874	1,957	2,040	2,123	2,206	2,289	2,372	2,455	2,538	2,621
1750	0.462	0.547	0.632	0.718	0.803	0.889	0.974	1,059	1,146	1,231	1,317	1,250	1,335	1,421	1,506	1,592	1,677	1,763	1,848	1,934	2,019	2,105	2,190	2,276	2,361	2,448	2,533	2,619	2,705
1800	0.476	0.564	0.652	0.740	0.828	0.917	1,004	1,092	1,180	1,268	1,357	1,287	1,376	1,464	1,552	1,640	1,728	1,817	1,905	1,993	2,081	2,169	2,258	2,346	2,434	2,522	2,610	2,699	2,787
1850	0.490	0.581	0.671	0.762	0.853	0.944	1,034	1,125	1,216	1,306	1,398	1,326	1,416	1,508	1,598	1,689	1,780	1,871	1,961	2,053	2,143	2,234	2,325	2,416	2,506	2,598	2,688	2,779	2,871
1900	0.504	0.597	0.691	0.784	0.878	0.971	1,064	1,157	1,251	1,344	1,437	1,364	1,457	1,551	1,644	1,738	1,831	1,925	2,018	2,112	2,205	2,298	2,392	2,485	2,579	2,672	2,766	2,859	2,953
1950	0.519	0.614	0.710	0.806	0.902	0.999	1,094	1,190	1,286	1,382	1,478	1,403	1,498	1,595	1,691	1,787	1,883	1,979	2,075	2,171	2,267	2,364	2,459	2,556	2,651	2,748	2,843	2,940	3,037
2000	0.532	0.631	0.730	0.828	0.927	1,026	1,124	1,222	1,321	1,420	1,518	1,441	1,539	1,638	1,737	1,835	1,934	2,033	2,132	2,230	2,329	2,428	2,526	2,625	2,724	2,822	2,921	3,020	3,119

Living cross-section area m_2 fire-fighting smoke damper valves with an electromagnet or electric drive inside

Width \ Height	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600	1650	1700
300	0.055	0.067	0.080	0.092	0.105	0.118	0.130	0.143	0.156	0.169	0.182	0.183	0.195	0.208	0.221	0.197	0.210	0.223	0.236	0.249	0.261	0.274	0.287	0.299	0.312	0.324	0.337	0.350	0.363
350	0.067	0.083	0.098	0.113	0.129	0.144	0.160	0.174	0.190	0.206	0.221	0.224	0.239	0.254	0.270	0.242	0.257	0.273	0.288	0.303	0.318	0.334	0.350	0.364	0.380	0.395	0.411	0.426	0.441
400	0.080	0.099	0.117	0.134	0.152	0.170	0.188	0.206	0.224	0.242	0.259	0.265	0.282	0.300	0.318	0.287	0.305	0.322	0.340	0.358	0.376	0.394	0.412	0.429	0.448	0.466	0.484	0.502	0.520
450	0.093	0.113	0.134	0.155	0.175	0.196	0.216	0.237	0.258	0.278	0.299	0.306	0.327	0.348	0.368	0.331	0.351	0.372	0.393	0.413	0.434	0.454	0.475	0.496	0.516	0.537	0.557	0.578	0.599
500	0.106	0.129	0.152	0.175	0.200	0.223	0.246	0.269	0.292	0.315	0.338	0.348	0.371	0.394	0.417	0.375	0.398	0.421	0.444	0.467	0.491	0.515	0.538	0.561	0.584	0.607	0.630	0.653	0.676
550	0.120	0.145	0.171	0.196	0.223	0.249	0.274	0.300	0.326	0.352	0.378	0.389	0.414	0.440	0.466	0.419	0.445	0.470	0.497	0.523	0.548	0.574	0.600	0.626	0.652	0.677	0.704	0.729	0.755
600	0.132	0.161	0.189	0.217	0.246	0.274	0.302	0.332	0.360	0.389	0.417	0.429	0.458	0.486	0.515	0.463	0.492	0.521	0.549	0.578	0.606	0.634	0.663	0.691	0.719	0.748	0.777	0.805	0.834
650	0.145	0.176	0.207	0.238	0.270	0.300	0.332	0.362	0.394	0.425	0.456	0.470	0.502	0.532	0.564	0.508	0.539	0.570	0.601	0.632	0.664	0.694	0.726	0.756	0.788	0.819	0.849	0.881	0.911
700	0.159	0.192	0.226	0.259	0.293	0.327	0.360	0.394	0.427	0.461	0.496	0.511	0.545	0.580	0.613	0.552	0.586	0.620	0.653	0.687	0.720	0.754	0.789	0.822	0.856	0.889	0.923	0.957	0.990
750	0.171	0.208	0.244	0.280	0.316	0.353	0.390	0.425	0.462	0.498	0.534	0.553	0.589	0.626	0.662	0.596	0.633	0.669	0.706	0.741	0.778	0.815	0.851	0.887	0.923	0.960	0.996	1,032	1,069
800	0.184	0.223	0.261	0.301	0.340	0.379	0.418	0.457	0.496	0.534	0.573	0.594	0.633	0.672	0.711	0.641	0.679	0.718	0.758	0.797	0.836	0.875	0.914	0.952	0.991	1,030	1,069	1,108	1,148
850	0.197	0.238	0.280	0.321	0.363	0.405	0.446	0.488	0.529	0.571	0.613	0.635	0.677	0.718	0.760	0.685	0.727	0.769	0.810	0.852	0.893	0.935	0.977	1,017	1,059	1,100	1,142	1,184	1,225
900	0.210	0.254	0.298	0.342	0.386	0.431	0.476	0.520	0.564	0.608	0.652	0.676	0.720	0.764	0.809	0.730	0.774	0.818	0.862	0.906	0.950	0.994	1,038	1,083	1,128	1,172	1,216	1,260	1,304
950	0.223	0.270	0.317	0.363	0.411	0.457	0.504	0.551	0.597	0.645	0.691	0.717	0.764	0.812	0.858	0.774	0.820	0.867	0.915	0.961	1,008	1,054	1,101	1,149	1,195	1,242	1,288	1,336	1,383
1000	0.236	0.286	0.335	0.384	0.434	0.483	0.532	0.582	0.631	0.681	0.731	0.759	0.809	0.858	0.907	0.818	0.867	0.917	0.966	1,015	1,066	1,115	1,164	1,214	1,263	1,313	1,362	1,411	1,461
1050	0.249	0.301	0.353	0.405	0.457	0.509	0.562	0.613	0.550	0.593	0.637	0.800	0.852	0.904	0.957	0.862	0.915	0.966	1,019	1,071	1,122	1,175	1,226	1,055	1,099	1,143	1,188	1,231	1,275
1100	0.261	0.316	0.372	0.426	0.481	0.536	0.590	0.538	0.584	0.630	0.676	0.841	0.896	0.950	1,005	0.906	0.962	1,016	1,071	1,126	1,180	1,028	1,074	1,121	1,168	1,214	1,260	1,306	1,353
1150	0.275	0.332	0.390	0.447	0.504	0.470	0.520	0.569	0.617	0.667	0.716	0.882	0.940	0.996	1,054	0.951	1,008	0.893	0.941	0.990	1,040	1,088	1,137	1,187	1,236	1,284	1,334	1,383	1,431
1200	0.288	0.348	0.407	0.394	0.445	0.497	0.548	0.600	0.652	0.704	0.755	0.923	0.983	0.880	0.931	0.838	0.890	0.942	0.993	1,045	1,096	1,149	1,200	1,252	1,303	1,355	1,407	1,458	1,510
1250	0.251	0.306	0.360	0.414	0.468	0.523	0.578	0.631	0.686	0.740	0.794	0.818	0.872	0.926	0.981	0.883	0.937	0.991	1,046	1,099	1,154	1,209	1,263	1,317	1,371	1,426	1,479	1,534	1,589
1300	0.265	0.321	0.378	0.435	0.492	0.549	0.606	0.663	0.719	0.777	0.834	0.859	0.916	0.972	1,029	0.927	0.984	1,041	1,097	1,155	1,212	1,268	1,325	1,382	1,440	1,496	1,553	1,610	1,666
1350	0.277	0.337	0.396	0.456	0.516	0.575	0.634	0.694	0.754	0.813	0.873	0.900	0.960	1,019	1,078	0.971	1,031	1,090	1,150	1,210	1,269	1,328	1,388	1,448	1,507	1,567	1,626	1,685	1,745
1400	0.290	0.353	0.415	0.477	0.539	0.601	0.664	0.726	0.788	0.849	0.911	0.941	1,003	1,066	1,128	1,015	1,077	1,140	1,202	1,264	1,326	1,388	1,451	1,513	1,575	1,637	1,699	1,762	1,824
1450	0.303	0.368	0.433	0.498	0.563	0.627	0.692	0.757	0.821	0.886	0.951	0.982	1,047	1,112	1,177	1,059	1,125	1,190	1,255	1,319	1,384	1,449	1,513	1,578	1,643	1,707	1,772	1,838	1,903
1500	0.316	0.383	0.452	0.519	0.586	0.653	0.720	0.789	0.856	0.923	0.990	1,024	1,091	1,158	1,225	1,105	1,172	1,239	1,306	1,373	1,442	1,509	1,576	1,643	1,710	1,779	1,846	1,913	1,980
1550	0.329	0.399	0.469	0.540	0.609	0.679	0.750	0.819	0.889	0.960	1,029	1,065	1,135	1,204	1,275	1,149	1,219	1,288	1,359	1,429	1,498	1,569	1,639	1,708	1,779	1,849	1,919	1,989	2,059
1600	0.342	0.415	0.487	0.560	0.633	0.706	0.778	0.851	0.923	0.996	1,069	1,106	1,178	1,251	1,324	1,193	1,265	1,338	1,411	1,484	1,556	1,629	1,701	1,775	1,847	1,919	1,992	2,064	2,138
1650	0.355	0.431	0.506	0.581	0.656	0.732	0.806	0.882	0.958	1,032	1,108	1,147	1,222	1,298	1,372	1,237	1,313	1,388	1,463	1,538	1,614	1,688	1,764	1,840	1,915	1,990	2,065	2,141	2,216
1700	0.369	0.446	0.524	0.602	0.679	0.758	0.836	0.914	0.991	1,069	1,148	1,188	1,266	1,344	1,422	1,281	1,360	1,437	1,515	1,593	1,671	1,749	1,827	1,905	1,982	2,060	2,139	2,217	2,294
1750	0.381	0.462	0.542	0.623	0.704	0.783	0.864	0.945	1,025	1,106	1,187	1,230	1,309	1,390	1,471	1,326	1,406	1,487	1,568	1,647	1,728	1,809	1,890	1,970	2,051	2,132	2,211	2,292	2,373
1800	0.394	0.477	0.561	0.644	0.727	0.810	0.893	0.977	1,059	1,142	1,225	1,271	1,353	1,436	1,519	1,370	1,453	1,536	1,619	1,703	1,786	1,869	1,952	2,035	2,119	2,202	2,285	2,368	2,451
1850	0.407	0.492	0.579	0.665	0.750	0.836	0.922	1,007	1,093	1,179	1,265	1,311	1,398	1,483	1,569	1,414	1,500	1,586	1,672	1,758	1,844	1,929	2,015	2,101	2,186	2,272	2,358	2,443	2,529
1900	0.420	0.508	0.596	0.686	0.774	0.862	0.950	1,038	1,128	1,216	1,304	1,352	1,441	1,530	1,618	1,458	1,547	1,636	1,724	1,812	1,901	1,989	2,078	2,166	2,254	2,343	2,431	2,520	2,608
1950	0.433	0.524	0.615	0.706	0.797	0.888	0.979	1,070	1,161	1,253	1,343	1,393	1,485	1,576	1,667	1,503	1,594	1,685	1,777	1,867	1,958	2,050	2,140	2,231	2,323	2,413	2,504	2,596	2,687
2000	0.446	0.540	0.633	0.727	0.820	0.915	1,008	1,101	1,195	1,288	1,383	1,435	1,529	1,622	1,716	1,548	1,641	1,735	1,828	1,922	2,016	2,109	2,203	2,296	2,390	2,484	2,578	2,671	2,765

Mass of fire-fighting smoke dampers with reversible electric drive, kg

Width \ Height	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600	1650	1700
300	8.7	9.2	9.8	10.4	10.9	11.5	12.1	12.6	13.2	13.8	14.4	16.8	17.3	17.8	18.3	18.8	19.3	19.8	20.3	20.8	21.3	21.8	22.3	22.8	23.3	23.8	24.3	24.8	25.3
350	9.2	9.8	10.4	10.9	11.5	12.1	12.6	13.2	13.8	14.4	14.9	17.3	17.8	18.3	18.8	19.3	19.8	20.3	20.8	21.3	21.8	22.3	22.8	23.3	23.8	24.3	24.8	25.3	25.8
400	9.8	10.4	10.9	11.5	12.1	12.6	13.2	13.8	14.4	14.9	15.5	17.9	18.4	18.9	19.4	19.9	20.4	20.9	21.4	21.9	22.4	22.9	23.4	23.9	24.4	24.9	25.4	25.9	26.4
450	10.4	10.9	11.5	12.1	12.6	13.2	13.8	14.4	14.9	15.5	16.1	18.5	19.0	19.5	20.0	20.5	21.0	21.5	22.0	22.5	23.0	23.5	24.0	24.5	25.0	25.5	26.0	26.5	27.0
500	10.9	11.5	12.1	12.6	13.2	13.8	14.4	14.9	15.5	16.1	16.6	19.0	19.5	20.0	20.5	21.0	21.5	22.0	22.5	23.0	23.5	24.0	24.5	25.0	25.5	26.0	26.5	27.0	27.5
550	11.5	12.1	12.6	13.2	13.8	14.4	14.9	15.5	16.1	16.6	17.2	19.6	20.1	20.6	21.1	21.6	22.1	22.6	23.1	23.6	24.1	24.6	25.1	25.6	26.1	26.6	27.1	27.6	28.1
600	12.1	12.6	13.2	13.8	14.4	14.9	15.5	16.1	16.6	17.2	17.8	20.2	20.7	21.2	21.7	22.2	22.7	23.2	23.7	24.2	24.7	25.2	25.7	26.2	26.7	27.2	27.7	28.2	28.7
650	12.6	13.2	13.8	14.4	14.9	15.5	16.1	16.6	17.2	17.8	18.3	20.7	21.2	21.7	22.2	22.7	23.2	23.7	24.2	24.7	25.2	25.7	26.2	26.7	27.2	27.7	28.2	28.7	29.2
700	13.2	13.8	14.4	14.9	15.5	16.1	16.6	17.2	17.8	18.3	18.9	21.3	21.8	22.3	22.8	23.3	23.8	24.3	24.8	25.3	25.8	26.3	26.8	27.3	27.8	28.3	28.8	29.3	29.8
750	13.8	14.4	14.9	15.5	16.1	16.6	17.2	17.8	18.3	18.9	19.5	21.9	22.4	22.9	23.4	23.9	24.4	24.9	25.4	25.9	26.4	26.9	27.4	27.9	28.4	28.9	29.4	29.9	30.4
800	14.4	14.9	15.5	16.1	16.6	17.2	17.8	18.3	18.9	19.5	20.1	22.5	23.0	23.5	24.0	24.5	25.0	25.5	26.0	26.5	27.0	27.5	28.0	28.5	29.0	29.5	30.0	30.5	31.0
850	14.9	15.5	16.1	16.6	17.2	17.8	18.4	18.9	19.5	20.1	20.6	23.0	23.5	24.0	24.5	25.0	25.5	26.0	26.5	27.0	27.5	28.0	28.5	29.0	29.5	30.0	30.5	31.0	31.5
900	15.5	16.1	16.6	17.2	17.8	18.4	18.9	19.5	20.1	20.6	21.2	23.6	24.1	24.6	25.1	25.6	26.1	26.6	27.1	27.6	28.1	28.6	29.1	29.6	30.1	30.6	31.1	31.6	32.1
950	16.1	16.6	17.2	17.8	18.3	18.9	19.4	20.0	20.6	21.1	21.7	24.1	24.6	25.1	25.6	26.1	26.6	27.1	27.6	28.1	28.6	29.1	29.6	30.1	30.6	31.1	31.6	32.1	32.6
1000	16.6	17.2	17.8	18.3	18.9	19.5	20.1	20.6	21.2	21.8	22.4	24.8	25.3	25.8	26.3	26.8	27.3	27.8	28.3	28.8	29.3	29.8	30.3	30.8	31.3	31.8	32.3	32.8	33.3
1050	17.1	17.7	18.3	18.3	18.9	19.5	20.1	20.6	23.6	24.2	24.8	25.3	25.8	26.3	26.8	27.3	27.8	28.3	28.8	29.3	29.8	30.3	30.8	35.1	35.6	36.1	36.6	37.1	37.6
1100	17.6	18.2	18.8	18.3	18.9	19.5	20.1	23.0	24.1	24.7	25.3	25.8	26.3	26.8	27.3	27.8	28.3	28.8	29.3	29.8	30.3	34.6	35.1	35.6	36.1	36.6	37.1	37.6	38.1
1150	18.1	18.7	19.3	18.3	18.9	21.9	22.5	23.5	24.6	25.2	25.8	26.3	26.8	27.3	27.8	28.3	28.8	33.1	33.6	34.1	34.6	35.1	35.6	36.1	36.6	37.1	37.6	38.1	38.6
1200	18.6	19.2	19.8	20.7	21.3	22.4	23.0	24.0	25.1	25.7	26.3	26.8	27.3	31.6	32.1	32.6	33.1	33.6	34.1	34.6	35.1	35.6	36.1	36.6	37.1	37.6	38.1	38.6	39.1
1250	21.0	21.6	22.2	21.2	21.8	22.9	23.5	24.5	25.6	26.2	26.8	31.1	31.6	32.1	32.6	33.1	33.6	34.1	34.6	35.1	35.6	36.1	36.6	37.1	37.6	38.1	38.6	39.1	39.6
1300	21.5	22.1	22.7	21.7	22.3	23.4	24.0	25.0	26.1	26.7	27.3	31.6	32.1	32.6	33.1	33.6	34.1	34.6	35.1	35.6	36.1	36.6	37.1	37.6	38.1	38.6	39.1	39.6	40.1
1350	22.0	22.6	23.2	22.2	22.8	23.9	24.5	25.5	26.6	27.2	27.8	32.1	32.6	33.1	33.6	34.1	34.6	35.1	35.6	36.1	36.6	37.1	37.6	38.1	38.6	39.1	39.6	40.1	40.6
1400	22.5	23.1	23.7	22.7	23.3	24.4	25.0	26.0	27.1	27.7	28.3	32.6	33.1	33.6	34.1	34.6	35.1	35.6	36.1	36.6	37.1	37.6	38.1	38.6	39.1	39.6	40.1	40.6	41.1
1450	23.0	23.6	24.2	23.2	23.8	24.9	25.5	26.5	27.6	28.2	28.8	33.1	33.6	34.1	34.6	35.1	35.6	36.1	36.6	37.1	37.6	38.1	38.6	39.1	39.6	40.1	40.6	41.1	41.6
1500	23.5	24.1	24.7	23.7	24.3	25.4	26.0	27.0	28.1	28.7	29.3	33.6	34.1	34.6	35.1	35.6	36.1	36.6	37.1	37.6	38.1	38.6	39.1	39.6	40.1	40.6	41.1	41.6	42.1
1550	24.0	24.6	25.2	24.2	24.8	25.9	26.5	27.5	28.6	29.2	29.8	34.1	34.6	35.1	35.6	36.1	36.6	37.1	37.6	38.1	38.6	39.1	39.6	40.1	40.6	41.1	41.6	42.1	42.6
1600	24.5	25.1	25.7	24.7	25.3	26.4	27.0	28.0	29.1	29.7	30.3	34.6	35.1	35.6	36.1	36.6	37.1	37.6	38.1	38.6	39.1	39.6	40.1	40.6	41.1	41.6	42.1	42.6	43.1
1650	25.0	25.6	26.2	25.2	25.8	26.9	27.5	28.5	29.6	30.2	30.8	35.1	35.6	36.1	36.6	37.1	37.6	38.1	38.6	39.1	39.6	40.1	40.6	41.1	41.6	42.1	42.6	43.1	43.6
1700	25.5	26.1	26.7	25.7	26.3	27.4	28.0	29.0	30.1	30.7	31.3	35.6	36.1	36.6	37.1	37.6	38.1	38.6	39.1	39.6	40.1	40.6	41.1	41.6	42.1	42.6	43.1	43.6	44.1
1750	26.0	26.6	27.2	26.2	26.8	27.9	28.5	29.5	30.6	31.2	31.8	36.1	36.6	37.1	37.6	38.1	38.6	39.1	39.6	40.1	40.6	41.1	41.6	42.1	42.6	43.1	43.6	44.1	44.6
1800	26.5	27.1	27.7	26.7	27.3	28.4	29.0	30.0	31.1	31.7	32.3	36.6	37.1	37.6	38.1	38.6	39.1	39.6	40.1	40.6	41.1	41.6	42.1	42.6	43.1	43.6	44.1	44.6	45.1
1850	27.0	27.6	28.2	27.2	27.8	28.9	29.5	30.5	31.6	32.2	32.8	37.1	37.6	38.1	38.6	39.1	39.6	40.1	40.6	41.1	41.6	42.1	42.6	43.1	43.6	44.1	44.6	45.1	45.6
1900	27.5	28.1	28.7	27.7	28.3	29.4	30.0	31.0	32.1	32.7	33.3	37.6	38.1	38.6	39.1	39.6	40.1	40.6	41.1	41.6	42.1	42.6	43.1	43.6	44.1	44.6	45.1	45.6	46.1
1950	28.0	28.6	29.2	28.2	28.8	29.9	30.5	31.5	32.6	33.2	33.8	38.1	38.6	39.1	39.6	40.1	40.6	41.1	41.6	42.1	42.6	43.1	43.6	44.1	44.6	45.1	45.6	46.1	46.6
2000	28.5	29.1	29.7	28.7	29.3	30.4	31.0	32.0	33.1	33.7	34.3	38.6	39.1	39.6	40.1	40.6	41.1	41.6	42.1	42.6	43.1	43.6	44.1	44.6	45.1	45.6	46.1	46.6	47.1

1 electric actuator 15 Nm, single-section version
2 electric actuators 15 Nm each, two-section version
4 electric actuators 15 Nm each, four-section version

Mass of fire-fighting smoke dampers with electric drive and spring return, kg

Width \ Height	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600	1650	1700
300	9.0	9.5	10.1	10.7	11.2	11.8	12.6	13.1	13.7	14.3	14.9	15.4	16.0	18.3	18.8	19.3	19.8	20.3	20.8	21.3	21.8	22.3	22.8	23.3	23.8	24.3	24.8	25.3	25.8
350	9.5	10.1	10.7	11.2	11.8	12.4	13.1	13.7	14.3	14.9	15.4	16.0	16.6	18.8	19.3	19.8	20.3	20.8	21.3	21.8	22.3	22.8	23.3	23.8	24.3	24.8	25.3	25.8	26.3
400	10.1	10.7	11.2	11.8	12.4	12.9	13.7	14.3	14.9	15.4	16.0	16.6	17.1	19.4	19.8	20.3	20.8	21.3	21.8	22.3	22.8	23.3	23.8	24.3	24.8	25.3	25.8	26.3	26.8
450	10.7	11.2	11.8	12.4	12.9	13.5	14.3	14.9	15.4	16.0	16.6	17.1	17.7	20.0	20.3	20.8	21.3	21.8	22.3	22.8	23.3	23.8	24.3	24.8	25.3	25.8	26.3	26.8	27.3
500	11.2	11.7	12.4	12.9	13.5	14.1	14.9	15.4	16.0	16.6	17.1	17.7	18.3	20.5	20.8	21.3	21.8	22.3	22.8	23.3	23.8	24.3	24.8	25.3	25.8	26.3	26.8	27.3	27.8
550	11.8	12.4	12.9	13.5	14.1	14.7	15.4	16.0	16.6	17.1	17.7	18.3	18.8	21.1	21.3	21.8	22.3	22.8	23.3	23.8	24.3	24.8	25.3	25.8	26.3	26.8	27.3	27.8	28.3
600	12.4	12.9	13.5	14.1	14.7	15.2	16.0	16.6	17.1	17.7	18.3	18.8	19.4	21.7	21.8	22.3	22.8	23.3	23.8	24.3	24.8	25.3	25.8	26.3	26.8	27.3	27.8	28.3	28.8
650	12.9	13.5	14.1	14.7	15.2	15.8	16.6	17.1	17.7	18.3	18.8	19.4	20.0	22.2	22.3	22.8	23.3	23.8	24.3	24.8	25.3	25.8	26.3	26.8	27.3	27.8	28.3	28.8	29.3
700	13.5	14.1	14.7	15.2	15.8	16.4	17.1	17.7	18.3	18.8	19.4	20.0	20.6	22.8	22.8	23.3	23.8	24.3	24.8	25.3	25.8	26.3	26.8	27.3	27.8	28.3	28.8	29.3	29.8
750	14.1	14.7	15.2	15.8	16.4	16.9	17.7	18.3	18.8	19.4	20.0	20.6	21.1	23.4	23.3	23.8	24.3	24.8	25.3	25.8	26.3	26.8	27.3	27.8	28.3	28.8	29.3	29.8	30.3
800	14.7	15.2	15.8	16.4	16.9	17.5	18.3	18.9	19.4	20.0	20.6	21.1	21.7	24.0	23.8	24.3	24.8	25.3	25.8	26.3	26.8	27.3	27.8	28.3	28.8	29.3	29.8	30.3	30.8
850	15.2	15.8	16.4	16.9	17.5	18.3	18.9	19.4	20.0	20.6	21.1	21.7	22.3	24.6	24.3	24.8	25.3	25.8	26.3	26.8	27.3	27.8	28.3	28.8	29.3	29.8	30.3	30.8	31.3
900	15.8	16.4	16.9	17.5	18.1	18.9	19.4	20.0	20.6	21.1	21.7	22.3	22.9	25.1	24.8	25.3	25.8	26.3	26.8	27.3	27.8	28.3	28.8	29.3	29.8	30.3	30.8	31.3	31.8
950	16.4	16.9	17.5	18.1	18.6	19.4	19.9	20.5	21.1	21.7	22.3	24.4	25.0	25.6	25.3	25.8	26.3	26.8	27.3	27.8	28.3	28.8	29.3	29.8	30.3	30.8	31.3	31.8	35.4
1000	16.9	17.5	18.1	18.6	19.1	20.0	20.6	21.1	21.7	22.3	22.9	25.1	25.7	26.3	25.8	26.3	26.8	27.3	27.8	28.3	28.8	29.3	29.8	30.3	30.8	31.3	31.8	35.4	35.9
1050	17.4	18.0	18.6	19.1	19.8	20.5	21.1	21.6	22.2	22.8	25.2	25.6	26.2	26.8	26.3	26.8	27.3	27.8	28.3	28.8	29.3	29.8	30.3	30.8	31.3	34.9	35.4	35.9	36.4
1100	17.9	18.5	19.1	19.6	20.3	21.0	21.6	22.1	22.7	25.1	25.7	26.1	26.7	27.3	26.8	27.3	27.8	28.3	28.8	29.3	29.8	30.3	30.8	31.3	34.9	35.4	35.9	36.4	36.9
1150	18.4	19.0	19.6	20.3	20.8	21.5	22.1	22.6	23.2	25.6	26.2	26.6	27.2	27.8	27.3	27.8	28.3	28.8	29.3	29.8	30.3	30.8	34.4	34.9	35.4	35.9	36.4	36.9	37.4
1200	18.9	19.5	20.1	20.8	21.3	22.0	22.6	23.1	25.5	26.1	26.7	27.1	27.7	28.3	27.8	28.3	28.8	29.3	29.8	30.3	30.8	34.4	34.9	35.4	35.9	36.4	36.9	37.4	37.9
1250	19.4	20.0	20.6	21.3	21.8	22.5	23.1	25.4	26.0	26.6	27.2	27.6	28.2	28.8	28.3	28.8	29.3	29.8	30.3	30.8	34.4	34.9	35.4	35.9	36.4	36.9	37.4	37.9	38.4
1300	19.9	20.5	21.3	21.8	22.3	23.0	23.6	25.9	26.5	27.1	27.7	28.1	28.7	29.3	28.8	29.3	29.8	30.3	30.8	34.4	34.9	35.4	35.9	36.4	36.9	37.4	37.9	38.4	38.9
1350	20.4	21.0	21.8	22.3	22.8	23.5	24.1	26.4	27.0	27.6	28.2	28.6	29.2	29.8	29.3	29.8	30.3	30.8	34.4	34.9	35.4	35.9	36.4	36.9	37.4	37.9	38.4	38.9	39.4
1400	20.9	21.5	22.3	22.8	23.3	24.0	26.4	26.9	27.5	28.1	28.7	29.1	29.7	30.3	29.8	30.3	30.8	34.4	34.9	35.4	35.9	36.4	36.9	37.4	37.9	38.4	38.9	39.4	39.9
1450	21.4	22.2	22.8	23.3	23.8	24.5	26.9	27.4	28.0	28.6	29.2	29.6	30.2	30.8	30.3	30.8	31.3	34.9	35.4	35.9	36.4	36.9	37.4	37.9	38.4	38.9	39.4	39.9	40.4
1500	21.9	22.7	23.3	23.8	24.3	26.8	27.4	27.9	28.5	29.1	29.7	30.1	30.7	31.3	30.8	31.3	34.9	35.4	35.9	36.4	36.9	37.4	37.9	38.4	38.9	39.4	39.9	40.4	40.9
1550	22.4	23.2	23.8	24.3	24.8	27.3	27.9	28.4	29.0	29.6	30.2	30.6	31.2	31.8	31.3	34.9	35.4	35.9	36.4	36.9	37.4	37.9	38.4	38.9	39.4	39.9	40.4	40.9	41.4
1600	22.9	23.7	24.3	24.8	25.3	27.8	28.4	28.9	29.5	30.1	30.7	31.1	31.7	32.3	31.8	35.4	35.9	36.4	36.9	37.4	37.9	38.4	38.9	39.4	39.9	40.4	40.9	41.4	41.9
1650	23.4	24.2	24.8	25.3	27.6	28.3	28.9	29.4	30.0	30.6	31.2	31.6	32.2	32.8	35.4	35.9	36.4	36.9	37.4	37.9	38.4	38.9	39.4	39.9	40.4	40.9	41.4	41.9	42.4
1700	24.1	24.7	25.3	25.8	28.1	28.8	29.4	29.9	30.5	31.1	31.7	32.1	32.7	36.4	35.9	36.4	36.9	37.4	37.9	38.4	38.9	39.4	39.9	40.4	40.9	41.4	41.9	42.4	42.9
1750	24.6	25.2	25.8	26.3	28.6	29.3	29.9	30.4	31.0	31.6	32.2	32.6	33.2	36.9	36.4	36.9	37.4	37.9	38.4	38.9	39.4	39.9	40.4	40.9	41.4	41.9	42.4	42.9	43.4
1800	25.1	25.7	26.3	26.8	29.1	29.8	30.4	30.9	31.5	32.1	32.7	33.1	36.8	37.4	36.9	37.4	37.9	38.4	38.9	39.4	39.9	40.4	40.9	41.4	41.9	42.4	42.9	43.4	43.9
1850	25.6	26.2	26.8	29.1	29.6	30.3	30.9	31.4	32.0	32.6	33.2	36.7	37.3	37.9	37.4	37.9	38.4	38.9	39.4	39.9	40.4	40.9	41.4	41.9	42.4	42.9	43.4	43.9	44.4
1900	26.1	26.7	27.3	29.6	30.1	30.8	31.4	31.9	32.5	33.1	33.7	37.2	37.8	38.4	37.9	38.4	38.9	39.4	39.9	40.4	40.9	41.4	41.9	42.4	42.9	43.4	43.9	44.4	51.1
1950	26.6	27.2	27.8	30.1	30.6	31.3	31.9	32.4	33.0	33.6	34.2	37.7	38.3	38.9	38.4	38.9	39.4	39.9	40.4	40.9	41.4	41.9	42.4	42.9	43.4	43.9	44.4	51.1	51.6
2000	27.1	27.7	28.3	30.6	31.1	31.8	32.4	32.9	33.5	34.1	34.7	38.2	38.8	39.4	38.9	39.4	39.9	40.4	40.9	41.4	41.9	42.4	42.9	43.4	43.9	44.4	44.9	51.6	52.1

- 1 electric actuator 4 Nm, single-section version
- 1 electric actuator 7 Nm, single-section version
- 1 electric actuator 18 Nm, single-section version
- 2 electric actuators 7 Nm each, two-section version
- 2 electric actuators 18 Nm each, two-section version
- 4 electric actuators 7 Nm each, four-section version
- 4 electric actuators 18 Nm each, four-section version

Mass of fire-fighting smoke damper valves with electromagnet, kg

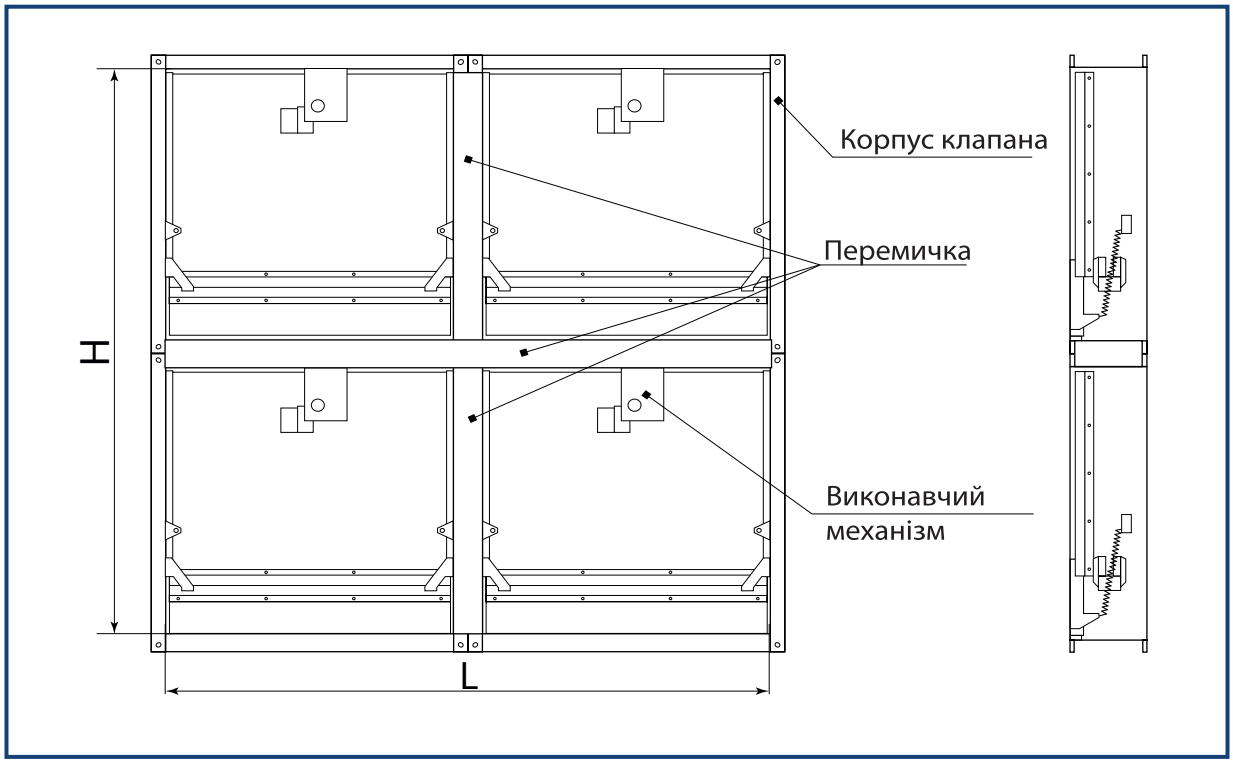
Width \ Height	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600	1650	1700
300	7.8	8.3	8.9	9.5	10.0	10.6	11.2	11.7	12.3	12.9	13.5	15.0	15.5	16.0	16.5	17.0	17.5	18.0	18.5	19.0	19.5	20.0	20.5	21.0	21.5	22.0	22.5	23.0	23.5
350	8.3	8.9	9.5	10.0	10.6	11.2	11.7	12.3	12.9	13.5	14.0	15.5	16.0	16.5	17.0	17.5	18.0	18.5	19.0	19.5	20.0	20.5	21.0	21.5	22.0	22.5	23.0	23.5	24.0
400	8.9	9.5	10.0	10.6	11.2	11.7	12.3	12.9	13.5	14.0	14.6	16.1	16.6	17.1	17.6	18.1	18.6	19.1	19.6	20.1	20.6	21.1	21.6	22.1	22.6	23.1	23.6	24.1	24.6
450	9.5	10.0	10.6	11.2	11.7	12.3	12.9	13.5	14.0	14.6	15.2	16.7	17.2	17.7	18.2	18.7	19.2	19.7	20.2	20.7	21.2	21.7	22.2	22.7	23.2	23.7	24.2	24.7	25.2
500	10.0	10.6	11.2	11.7	12.3	12.9	13.5	14.0	14.6	15.2	15.7	17.2	17.7	18.2	18.7	19.2	19.7	20.2	20.7	21.2	21.7	22.2	22.7	23.2	23.7	24.2	24.7	25.2	25.7
550	10.6	11.2	11.7	12.3	12.9	13.5	14.0	14.6	15.2	15.7	16.3	17.8	18.3	18.8	19.3	19.8	20.3	20.8	21.3	21.8	22.3	22.8	23.3	23.8	24.3	24.8	25.3	25.8	26.3
600	11.2	11.7	12.3	12.9	13.5	14.0	14.6	15.2	15.7	16.3	16.8	18.3	18.8	19.3	19.8	20.3	20.8	21.3	21.8	22.3	22.8	23.3	23.8	24.3	24.8	25.3	25.8	26.3	26.8
650	11.7	12.3	12.9	13.5	14.0	14.6	15.2	15.7	16.3	16.8	17.3	18.8	19.3	19.8	20.3	20.8	21.3	21.8	22.3	22.8	23.3	23.8	24.3	24.8	25.3	25.8	26.3	26.8	27.3
700	12.3	12.9	13.5	14.0	14.6	15.2	15.7	16.3	16.8	17.3	17.8	19.3	19.8	20.3	20.8	21.3	21.8	22.3	22.8	23.3	23.8	24.3	24.8	25.3	25.8	26.3	26.8	27.3	27.8
750	12.9	13.5	14.0	14.6	15.2	15.7	16.3	16.8	17.3	17.8	18.3	19.8	20.3	20.8	21.3	21.8	22.3	22.8	23.3	23.8	24.3	24.8	25.3	25.8	26.3	26.8	27.3	27.8	28.3
800	13.5	14.0	14.6	15.2	15.7	16.3	16.8	17.3	17.8	18.3	18.8	20.3	20.8	21.3	21.8	22.3	22.8	23.3	23.8	24.3	24.8	25.3	25.8	26.3	26.8	27.3	27.8	28.3	28.8
850	14.0	14.6	15.2	15.7	16.3	16.8	17.3	17.8	18.3	18.8	19.3	20.8	21.3	21.8	22.3	22.8	23.3	23.8	24.3	24.8	25.3	25.8	26.3	26.8	27.3	27.8	28.3	28.8	29.3
900	14.6	15.2	15.7	16.3	16.8	17.3	17.8	18.3	18.8	19.3	19.8	21.3	21.8	22.3	22.8	23.3	23.8	24.3	24.8	25.3	25.8	26.3	26.8	27.3	27.8	28.3	28.8	29.3	29.8
950	15.2	15.7	16.3	16.8	17.3	17.8	18.3	18.8	19.3	19.8	20.9	22.4	22.9	23.4	23.9	24.4	24.9	25.4	25.9	26.4	26.9	27.4	27.9	28.4	28.9	29.4	29.9	30.4	30.9
1000	15.7	16.3	16.8	17.3	17.8	18.3	18.8	19.3	19.8	20.9	21.5	23.0	23.5	24.0	24.5	25.0	25.5	26.0	26.5	27.0	27.5	28.0	28.5	29.0	29.5	30.0	30.5	31.0	31.5
1050	16.2	16.8	17.3	17.8	18.3	18.8	19.3	19.8	21.3	22.4	23.0	23.5	24.0	24.5	25.0	25.5	26.0	26.5	27.0	27.5	28.0	28.5	29.0	31.5	32.0	32.5	33.0	33.5	34.0
1100	16.7	17.3	17.8	18.3	18.8	19.3	19.8	21.3	21.8	22.9	23.5	24.0	24.5	25.0	25.5	26.0	26.5	27.0	27.5	28.0	28.5	31.0	31.5	32.0	32.5	33.0	33.5	34.0	34.5
1150	17.2	17.8	18.3	18.8	19.3	20.8	21.3	21.8	22.3	23.4	24.0	24.5	25.0	25.5	26.0	26.5	27.0	29.5	30.0	30.5	31.0	31.5	32.0	32.5	33.0	33.5	34.0	34.5	35.0
1200	17.7	18.3	18.8	20.3	20.8	21.3	21.8	22.3	22.8	23.9	24.5	25.0	25.5	28.0	28.5	29.0	29.5	30.0	30.5	31.0	31.5	32.0	32.5	33.0	33.5	34.0	34.5	35.0	35.5
1250	19.2	19.8	20.3	20.8	21.3	21.8	22.3	22.8	23.3	24.4	25.0	27.5	28.0	28.5	29.0	29.5	30.0	30.5	31.0	31.5	32.0	32.5	33.0	33.5	34.0	34.5	35.0	35.5	36.0
1300	19.7	20.3	20.8	21.3	21.8	22.3	22.8	23.3	23.8	24.9	25.5	28.0	28.5	29.0	29.5	30.0	30.5	31.0	31.5	32.0	32.5	33.0	33.5	34.0	34.5	35.0	35.5	36.0	36.5
1350	20.2	20.8	21.3	21.8	22.3	22.8	23.3	23.8	24.3	25.4	26.0	28.5	29.0	29.5	30.0	30.5	31.0	31.5	32.0	32.5	33.0	33.5	34.0	34.5	35.0	35.5	36.0	36.5	37.0
1400	20.7	21.3	21.8	22.3	22.8	23.3	23.8	24.3	24.8	25.9	26.5	29.0	29.5	30.0	30.5	31.0	31.5	32.0	32.5	33.0	33.5	34.0	34.5	35.0	35.5	36.0	36.5	37.0	37.5
1450	21.2	21.8	22.3	22.8	23.3	23.8	24.3	24.8	25.3	26.4	27.0	29.5	30.0	30.5	31.0	31.5	32.0	32.5	33.0	33.5	34.0	34.5	35.0	35.5	36.0	36.5	37.0	37.5	38.0
1500	21.7	22.3	22.8	23.3	23.8	24.3	24.8	25.3	25.8	26.9	27.5	30.0	30.5	31.0	31.5	32.0	32.5	33.0	33.5	34.0	34.5	35.0	35.5	36.0	36.5	37.0	37.5	38.0	38.5
1550	22.2	22.8	23.3	23.8	24.3	24.8	25.3	25.8	26.3	27.4	28.0	30.5	31.0	31.5	32.0	32.5	33.0	33.5	34.0	34.5	35.0	35.5	36.0	36.5	37.0	37.5	38.0	38.5	39.0
1600	22.7	23.3	23.8	24.3	24.8	25.3	25.8	26.3	26.8	27.9	28.5	31.0	31.5	32.0	32.5	33.0	33.5	34.0	34.5	35.0	35.5	36.0	36.5	37.0	37.5	38.0	38.5	39.0	39.5
1650	23.2	23.8	24.3	24.8	25.3	25.8	26.3	26.8	27.3	28.4	29.0	31.5	32.0	32.5	33.0	33.5	34.0	34.5	35.0	35.5	36.0	36.5	37.0	37.5	38.0	38.5	39.0	39.5	40.0
1700	23.7	24.3	24.8	25.3	25.8	26.3	26.8	27.3	27.8	28.9	29.5	32.0	32.5	33.0	33.5	34.0	34.5	35.0	35.5	36.0	36.5	37.0	37.5	38.0	38.5	39.0	39.5	40.0	40.5
1750	24.2	24.8	25.3	25.8	26.3	26.8	27.3	27.8	28.3	29.4	30.0	32.5	33.0	33.5	34.0	34.5	35.0	35.5	36.0	36.5	37.0	37.5	38.0	38.5	39.0	39.5	40.0	40.5	41.0
1800	24.7	25.3	25.8	26.3	26.8	27.3	27.8	28.3	28.8	29.9	30.5	33.0	33.5	34.0	34.5	35.0	35.5	36.0	36.5	37.0	37.5	38.0	38.5	39.0	39.5	40.0	40.5	41.0	41.5
1850	25.2	25.8	26.3	26.8	27.3	27.8	28.3	28.8	29.3	30.4	31.0	33.5	34.0	34.5	35.0	35.5	36.0	36.5	37.0	37.5	38.0	38.5	39.0	39.5	40.0	40.5	41.0	41.5	42.0
1900	25.7	26.3	26.8	27.3	27.8	28.3	28.8	29.3	29.8	30.9	31.5	34.0	34.5	35.0	35.5	36.0	36.5	37.0	37.5	38.0	38.5	39.0	39.5	40.0	40.5	41.0	41.5	42.0	42.5
1950	26.2	26.8	27.3	27.8	28.3	28.8	29.3	29.8	30.3	31.4	32.0	34.5	35.0	35.5	36.0	36.5	37.0	37.5	38.0	38.5	39.0	39.5	40.0	40.5	41.0	41.5	42.0	42.5	43.0
2000	26.7	27.3	27.8	28.3	28.8	29.3	29.8	30.3	30.8	31.9	32.5	35.0	35.5	36.0	36.5	37.0	37.5	38.0	38.5	39.0	39.5	40.0	40.5	41.0	41.5	42.0	42.5	43.0	43.5

1 solenoid, single-section version
2 solenoids, two-section version
4 solenoids, four-section version

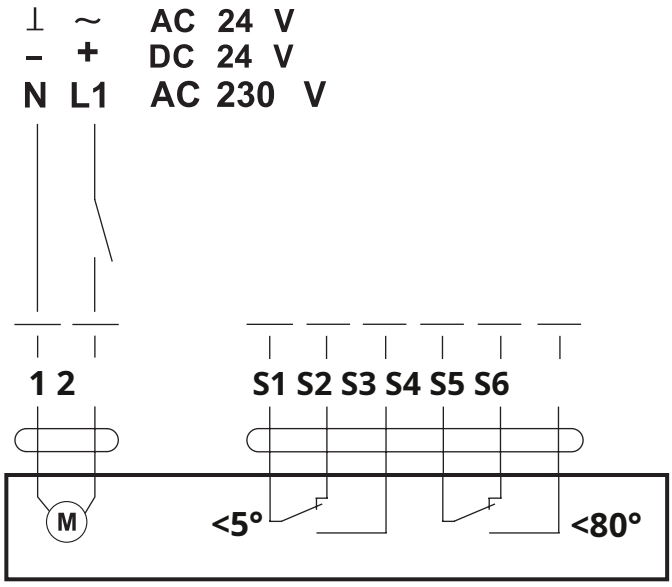
Fire-fighting smoke dampers KD series cassette version

Two-piece smoke valve KD series

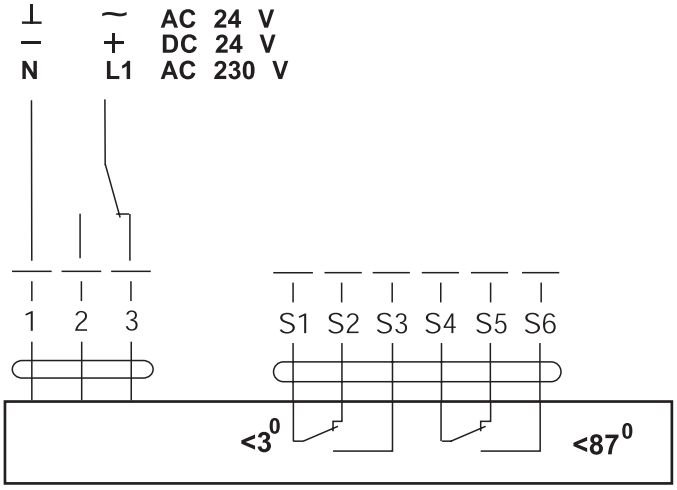
Four-way smoke valve KD series



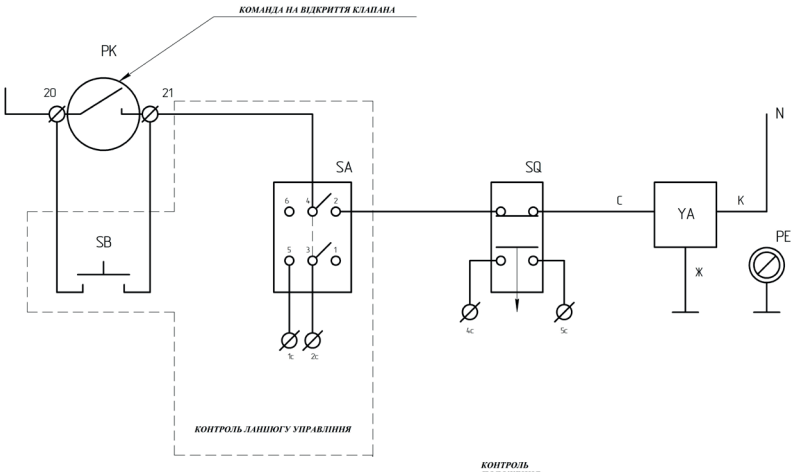
Electrical connection diagrams for valves



Electrical diagram of an electric actuator with spring return.
Parallel connection of several drives is possible, taking into account the capacities



Electrical diagram of a reversible electric drive
Parallel connection of several drives is possible, taking into account the capacities



КОНТРОЛЬ ПОЛОЖЕНИЯ ЗАСЛИКИ

20	21		N	1c	2c	4c	5c
1	2	3	4	5	6	7	8

Electrical diagram of an electromagnetic drive.
Parallel connection of several drives is possible, taking into account the capacities

Fire damper normally open (NO)intended for blocking spread of fire and combustion products through the air ducts of the general ventilation system. During normal operation of the ventilation system, such valves do not prevent the passage of air flows through the sections of the ventilation ducts where they are installed. In the event of a fire, the damper of the NV valve blocks its passage cross-section and prevents the spread of fire through the air ducts, as well as the influx of fresh air to the ignition sources.

Design features

* KP-1 valves are produced in general industrial design.
* Fire resistance limit of fire dampers (HB) - EIS60 and EIS120.
* The fire damper blade consists of a fireproof plate, which made it possible to achieve high results beyond fire resistance with a relatively small blade thickness.
* There is a thermally expanding material around the perimeter of the damper on the body, which expands and seals the valve during a fire.
* Actuator type: electromechanical actuator with return spring and thermal cut-out, fusible link
* Operating temperature of valves from -30 to +40°C in the absence of direct exposure to precipitation and moisture condensation on the damper, placement category 3 according to GOST 15150.
* Maximum relative humidity of ambient air - 98% at 25°C.
* Maximum air flow speed - 15 m/s.

KP-1 valves are manufactured in two types: channel and nipple.
Duct valves have two connecting flanges for installation in the ventilation duct. The actuator is placed externally (only with electric drive) or internally (only in the version with fusible insert).

Nipple valves are manufactured without flanges, designed for installation in ventilation ducts channel. The actuator is located outside. Available only in round cross-section.

Principles of moving the damper from the initial position to the working position
Normal (initial) valve position - is the state of the valve outside the fire effect. For NV or flame retardant valve - the damper is open.
Operating (emergency) position of the valve - is the valve state (the position of the valve blade in which it must be) during direct fire exposure (fire condition). For an NV or flame retardant valve - the damper is closed.

Ways to move the damper from the initial position to the working position:
* automatic according to fire automation signals;
* remote control;
* manually using the manual cocking handle (included in the mandatory delivery set for the electric drive);
* automatic from thermal lock at a temperature inside the valve of 72°C;

Electromechanical actuator with return spring is constantly in the starting position under voltage. In the event of an emergency operation, such an actuator is disconnected from the power supply and automatically moves the damper to the operating position.

Fusible insert operates when the temperature inside the valve rises above72°C.

Technical specifications

Parameter name	Norm	
Fire resistance limit, not less than	*EIS 60| EIS 120*	
Specific resistance to smoke gas penetration at a temperature of 20oC in closed valve position, m^3-kg^{-1}, not less than	*1600*	
Inertia of operation, seconds, no more: ** with electromechanical drive* ** with fusible insert*	 *20* *5*	
Rated supply voltage, V	*24 or 230 (50 Hz)*	
Power consumption, W, no more than: ** with electromechanical drive* ** with fusible insert*	*24* *8* *0*	*230* *9.5* *0*
Degree of protection of the electric drive	*IP54*	

Order example

Fire-retardant fire valve KP-1 500mm wide and 300mm high, fire resistance limit 120 minutes, actuator 230 Volt electric drive, general industrial version and without additional equipment.

KP-1 - 500x300 - 120 - 230 - O - 0

Name:**KP-1**
Working cross-section: **AhB**- A - width, B - height, mm; **D**- diameter, mm;
Fire resistance limit: **60**-EIS60 - 60 minutes; **120**-EIS120 - 120, min.;
Supply voltage,V: **PV**– for fusible link; **24**–24, B; **230**–230, B;
Implementation: **O**- general industrial; **NT**- with overpressure control function; **VZI**- explosion-proof; **K**- corrosion-resistant (specify the brand of stainless steel); **S**- earthquake-resistant;
Additional equipment: **RDA**- decorative aluminum grille; **RDJ**- louvered grille; **SDA**- anti-vandal mesh;

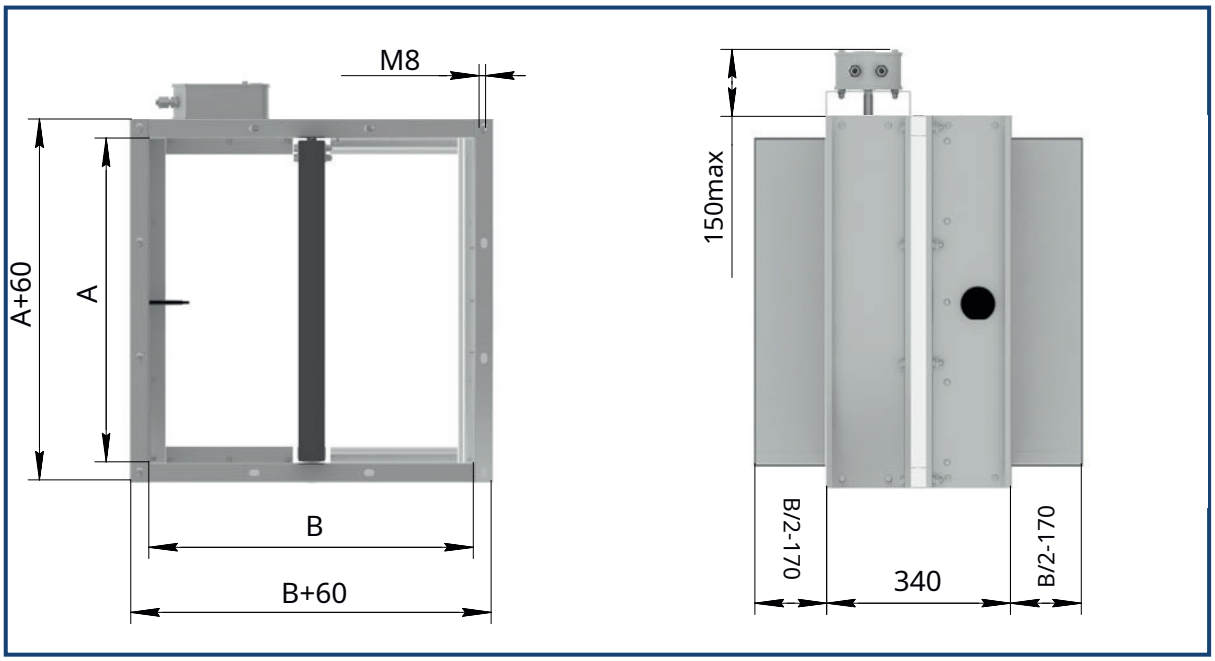
1 - for valves with excess pressure control function **(NT)** only fusible insert is used **(PV)**, single-flange version by default; 2 - pressure adjustment range for valves **NT**- from 50 to 150Pa;

3 - for valves in explosion-proof design, the Edelweiss electric actuator is used;

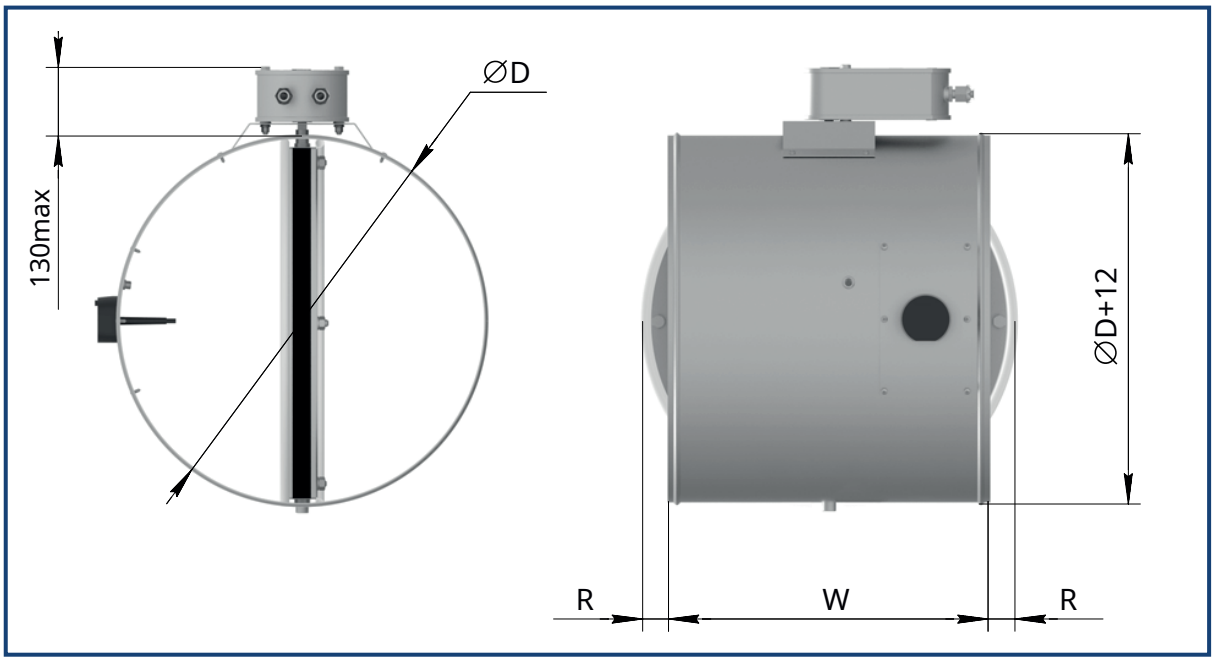
* standard painting color RAL9016 matte, if another color is required, indicate RAL at the end of the name;
** made of galvanized steel, if painting is necessary, indicate RAL at the end of the name;

Rectangular fire-retardant valve KP-1 with electric drive, duct type

implementation

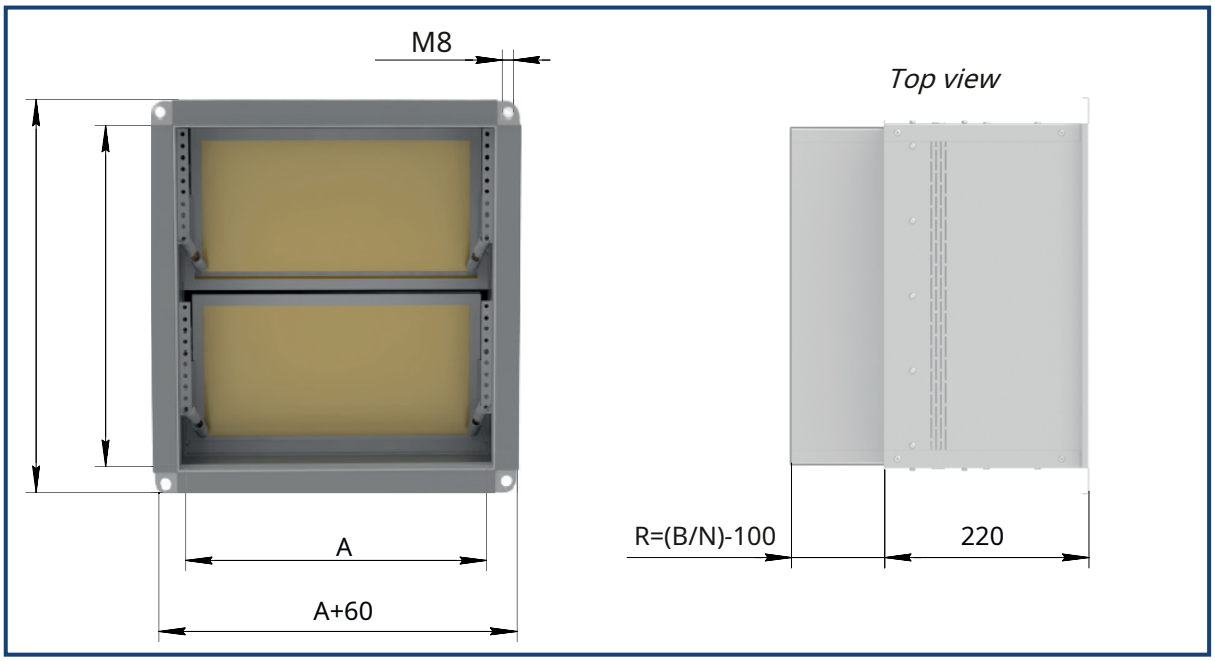


Round flame arrester valve KP-1 with electric drive, nipple version



D, mm	100	125	140	150	160	180	200	225	250	280	315	355	400	450	500	560	630	710	800	900	1000
W, mm	*300*										*350*		*450*				*500*	*550*	*600*	*650*	*700*
R, mm	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*25*	*55*	*65*	*80*	*100*	*125*	*150*

Rectangular flame arrester valve KP-1 with excess discharge function pressure



Valve height, mm (B)	Number of dampers, pcs (N)
300≤B≤400	*1*
400<B≤800	*2*
800<B≤1200	*3*

* it is possible to make the KP-1 flame retardant valve with the function of releasing excess pressure without the dampers being removed from the body;

Fire dampers-1

Living cross-section area m_2 and mass of fire-retardant KP-1 fire valves of circular cross-section

D, mm	100	125	140	150	160	180	200	225	250	280	315	355	400	450	500	560	630	710	800	900	1000
S, mm_2	0.006	0.009	0.013	0.015	0.017	0.022	0.027	0.035	0.044	0.053	0.071	0.091	0.120	0.150	0.190	0.230	0.300	0.380	0.482	0.610	0.754
M, kg	3.1	3.4	3.5	3.6	3.7	4.0	4.3	4.6	5.0	5.4	6.0	6.7	7.6	8.6	9.8	11.4	12.8	14.8	16.2	18.8	21.8

electric drive 4 Nm
electric drive 7 Nm
electric drive 18 Nm

Living cross-section area m_2 fire-retardant KP-1 fire valves of rectangular cross-section

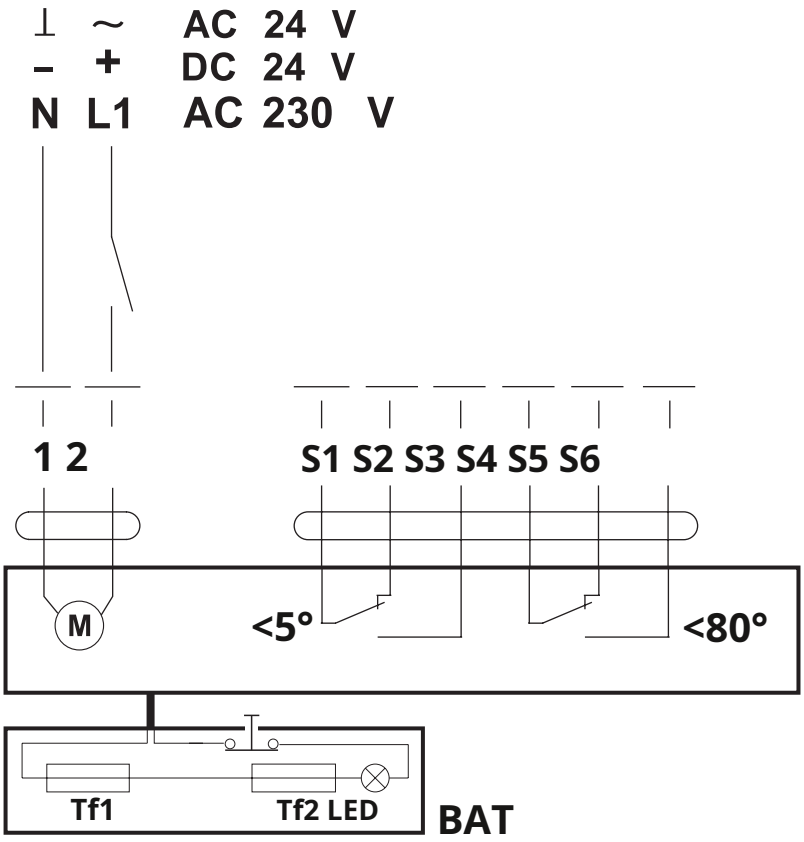
Width \ Height	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600	1650	1700
100	0.0069	0.0108	0.0147	0.0187	0.0226	0.0255	0.0295	0.0334	0.0373	0.0413	0.0452	0.0491	0.0530	0.0570	0.0609	0.0638	0.0678	0.0717	0.0756	0.0796	0.0835	0.0874	0.0913	0.0953	0.0992	0.1021	0.1061	0.1100	0.1139	0.1179	0.1218	0.1257	0.1297
150	0.0108	0.0177	0.0236	0.0304	0.0363	0.0422	0.0491	0.0550	0.0619	0.0678	0.0737	0.0805	0.0864	0.0933	0.0992	0.1051	0.1120	0.1179	0.1247	0.1306	0.1365	0.1434	0.1493	0.1562	0.1621	0.1680	0.1748	0.1807	0.1876	0.1935	0.1994	0.2053	0.2112
200	0.0157	0.0246	0.0334	0.0422	0.0501	0.0589	0.0678	0.0766	0.0855	0.0943	0.1031	0.1120	0.1208	0.1297	0.1375	0.1463	0.1552	0.1640	0.1729	0.1817	0.1905	0.1994	0.2082	0.2171	0.2249	0.2338	0.2426	0.2514	0.2603	0.2691	0.2780	0.2868	0.2956
250	0.0196	0.0314	0.0422	0.0530	0.0648	0.0756	0.0874	0.0982	0.1090	0.1208	0.1316	0.1434	0.1542	0.1650	0.1768	0.1876	0.1994	0.2102	0.2210	0.2328	0.2436	0.2554	0.2662	0.2770	0.2888	0.2996	0.3114	0.3222	0.3330	0.3448	0.3556	0.3664	0.3772
300	0.0246	0.0383	0.0521	0.0648	0.0786	0.0923	0.1061	0.1198	0.1336	0.1473	0.1611	0.1748	0.1886	0.2014	0.2151	0.2289	0.2426	0.2564	0.2701	0.2839	0.2976	0.3114	0.3251	0.3379	0.3516	0.3654	0.3791	0.3929	0.4066	0.4204	0.4341	0.4479	0.4616
350	0.0285	0.0452	0.0609	0.0766	0.0933	0.1090	0.1257	0.1414	0.1572	0.1738	0.1896	0.2063	0.2220	0.2377	0.2544	0.2701	0.2868	0.3025	0.3182	0.3349	0.3506	0.3673	0.3831	0.3988	0.4155	0.4312	0.4479	0.4636	0.4793	0.4960	0.5117	0.5274	0.5432
400	0.0334	0.0521	0.0697	0.0884	0.1071	0.1257	0.1444	0.1630	0.1817	0.2004	0.2190	0.2377	0.2554	0.2740	0.2927	0.3114	0.3300	0.3487	0.3673	0.3860	0.4047	0.4233	0.4410	0.4597	0.4783	0.4970	0.5157	0.5343	0.5530	0.5716	0.5903	0.6090	0.6276
450	0.0373	0.0579	0.0796	0.1002	0.1218	0.1424	0.1630	0.1847	0.2053	0.2269	0.2475	0.2681	0.2897	0.3104	0.3320	0.3526	0.3732	0.3948	0.4155	0.4371	0.4577	0.4783	0.4999	0.5206	0.5422	0.5628	0.5834	0.6050	0.6257	0.6473	0.6679	0.6885	0.7091
500	0.0422	0.0648	0.0884	0.1120	0.1355	0.1591	0.1827	0.2063	0.2298	0.2534	0.2770	0.2996	0.3231	0.3467	0.3703	0.3939	0.4174	0.4410	0.4646	0.4882	0.5117	0.5343	0.5579	0.5815	0.6050	0.6286	0.6522	0.6758	0.6993	0.7229	0.7465	0.7700	0.7936
550	0.0462	0.0717	0.0982	0.1238	0.1503	0.1758	0.2014	0.2279	0.2534	0.2799	0.3055	0.3310	0.3575	0.3831	0.4096	0.4351	0.4607	0.4872	0.5127	0.5392	0.5648	0.5903	0.6168	0.6424	0.6689	0.6944	0.7200	1.7287	1.7542	0.7985	0.8241	0.8496	0.8751
600	0.0501	0.0786	0.1071	0.1355	0.1640	0.1925	0.2210	0.2495	0.2780	0.3064	0.3339	0.3624	0.3909	0.4194	0.4479	0.4764	0.5049	0.5333	0.5618	0.5903	0.6178	0.6463	0.6748	0.7033	0.7317	0.7602	0.7887	0.8172	0.8457	0.8742	0.9017	0.9292	0.9567
650	0.0550	0.0855	0.1169	0.1473	0.1778	0.2092	0.2397	0.2711	0.3015	0.3320	0.3634	0.3939	0.4253	0.4557	0.4862	0.5176	0.5481	0.5795	0.6099	0.6404	0.6718	0.7023	0.7337	0.7642	0.7946	0.8260	0.8565	0.8879	0.9184	0.9488	0.9802	1.0117	1.0431
700	0.0589	0.0923	0.1257	0.1591	0.1925	0.2259	0.2593	0.2927	0.3261	0.3585	0.3919	0.4253	0.4587	0.4921	0.5255	0.5589	0.5923	0.6257	0.6591	0.6915	0.7249	0.7583	0.7917	0.8250	0.8584	0.8918	0.9252	0.9586	0.9920	1.0244	1.0578	1.0912	1.1246
750	0.0638	0.0992	0.1355	0.1709	0.2063	0.2426	0.2780	0.3143	0.3497	0.3850	0.4214	0.4567	0.4931	0.5284	0.5638	0.6001	0.6355	0.6718	0.7072	0.7425	0.7789	0.8142	0.8506	0.8859	0.9213	0.9576	0.9930	1.0293	1.0647	1.1001	1.1364	1.1727	1.2091
800	0.0678	0.1061	0.1444	0.1827	0.2210	0.2593	0.2976	0.3359	0.3732	0.4115	0.4498	0.4882	0.5265	0.5648	0.6031	0.6414	0.6797	0.7180	0.7553	0.7936	0.8319	0.8702	0.9085	0.9468	0.9851	1.0235	1.0618	1.1001	1.1374	1.1757	1.2140	1.2523	1.2906
850	0.0717	0.1120	0.1513	0.1915	0.2318	0.2721	0.3123	0.3526	0.3929	0.4322	0.4724	0.5127	0.5530	0.5932	0.6335	0.6728	0.7131	0.7533	0.7936	0.8339	0.8742	0.9144	0.9537	0.9940	1.0343	1.0745	1.1148	1.1551	1,1953	1.2346	1.2749	1.3152	1.3554
900	0.0756	0.1188	0.1611	0.2033	0.2465	0.2888	0.3310	0.3742	0.4165	0.4587	0.5019	0.5441	0.5864	0.6296	0.6718	0.7141	0.7573	0.7995	0.8417	0.8850	0.9272	0.9704	1.0126	1.0549	1.0981	1.1403	1.1826	1.2258	1.2680	1.3103	1.3535	1.3967	1.4399
950	0.0805	0.1247	0.1699	0.2151	0.2603	0.3055	0.3506	0.3958	0.4400	0.4852	0.5304	0.5756	0.6208	0.6659	0.7111	0.7553	0.8005	0.8457	0.8909	0.9360	0.9812	1.0254	1.0706	1.1158	1.1610	1.2061	1.2513	1.2965	1.3407	1.3859	1.4311	1.4762	1.5214
1000	0.0845	0.1316	0.1797	0.2269	0.2740	0.3222	0.3693	0.4174	0.4646	0.5117	0.5599	0.6070	0.6541	0.7023	0.7494	0.7966	0.8447	0.8918	0.9390	0.9871	1.0343	1.0814	1.1295	1.1767	1.2238	1.2719	1.3191	1.3672	1.4144	1.4615	1.5096	1.5578	1.6059
1050	0.0894	0.1385	0.1886	0.2387	0.2888	0.3389	0.3890	0.4381	0.4882	0.5382	0.5883	0.6384	0.6885	0.7386	0.7877	0.8378	0.8879	0.9380	0.9881	1.0382	1.0883	1.1374	1.1875	1.2376	1.2877	1.3378	1.3878	1.4370	1.4871	1.5371	1.5872	1.6373	1.6874
1100	0.0933	0.1454	0.1984	0.2505	0.3025	0.3556	0.4076	0.4597	0.5127	0.5648	0.6168	0.6699	0.7219	0.7750	0.8270	0.8791	0.9321	0.9842	1.0362	1.0893	1.1413	1.1934	1.2464	1.2985	1.3505	1.4036	1.4556	1.5077	1.5607	1.6128	1.6648	1.7169	1.7689
1150	0.0972	0.1522	0.2072	0.2622	0.3173	0.3723	0.4273	0.4813	0.5363	0.5913	0.6463	0.7013	0.7563	0.8103	0.8653	0.9203	0.9753	1.0303	1.0853	1.1403	1,1944	1.2494	1.3044	1.3594	1.4144	1.4694	1.5244	1.5784	1.6334	1.6884	1.7434	1.7984	1.8534
1200	0.1021	0.1591	0.2171	0.2740	0.3310	0.3890	0.4459	0.5029	0.5608	0.6178	0.6748	0.7327	0.7897	0.8467	0.9046	0.9616	1.0185	1.0765	1.1335	1.1914	1.2484	1.3053	1.3633	1.4203	1.4772	1.5352	1.5921	1.6491	1.7071	1.7640	1.8210	1.8780	1.9349
1250	0.1061	0.1660	0.2259	0.2858	0.3457	0.4056	0.4646	0.5245	0.5844	0.6443	0.7042	0.7642	0.8241	0.8830	0.9429	1.0028	1.0627	1.1227	1.1826	1.2415	1.3014	1.3613	1.4212	1.4812	1.5411	1.6010	1.6599	1.7198	1.7797	1.8397	1.8996	1.9595	2.0194
1300	0.1110	0.1729	0.2347	0.2976	0.3595	0.4223	0.4842	0.5461	0.6090	0.6708	0.7327	0.7956	0.8575	0.9193	0.9822	1.0441	1.1060	1.1688	1.2307	1.2926	1.3554	1.4173	1.4792	1.5421	1.6039	1.6668	1.7287	1.7906	1.8534	1.9153	1.9772	2.0390	2.1009
1350	0.1149	0.1797	0.2446	0.3094	0.3742	0.4381	0.5029	0.5677	0.6325	0.6974	0.7622	0.8270	0.8909	0.9557	1.0205	1.0853	1.1502	1.2150	1.2798	1.3436	1.4085	1.4733	1.5381	1.6030	1.6678	1.7316	1.7964	1.8613	1.9261	1.9909	2.0557	2.1206	2.1854
1400	0.1198	0.1866	0.2534	0.3212	0.3880	0.4548	0.5225	0.5893	0.6561	0.7239	0.7907	0.8584	0.9252	0.9920	1.0598	1.1266	1.1934	1.2611	1.3279	1.3947	1.4625	1.5293	1.5961	1.6638	1.7306	1.7974	1.8652	1.9320	1.9988	2.0665	2.1333	2,2001	2.2669
1450	0.1228	0.1935	0.2632	0.3330	0.4027	0.4715	0.5412	0.6109	0.6807	0.7504	0.8201	0.8889	0.9586	1.0284	1.0981	1.1678	1.2376	1.3073	1.3761	1.4458	1.5155	1.5853	1.6550	1.7247	1.7945	1.8632	1.9330	2.0027	2.0724	2.1422	2.2119	2.2817	2.3514
1500	0.1287	0.2004	0.2721	0.3448	0.4165	0.4882	0.5608	0.6325	0.7042	0.7769	0.8486	0.9203	0.9930	1.0647	1.1364	1.2091	1.2808	1.3535	1.4252	1.4969	1.5696	1.6413	1.7130	1.7856	1.8573	1.9290	2.0017	2.0734	2.1451	2.2178	2.2895	2.3612	2.4329
1550	0.1326	0.2072	0.2819	0.3565	0.4302	0.5049	0.5795	0.6541	0.7288	0.8034	0.8781	0.9518	1.0264	1.1010	1.1757	1.2503	1.3250	1.3987	1.4733	1.5479	1.6226	1.6972	1.7719	1.8465	1.9202	1.9948	2.0695	2.1441	2.2188	2.2934	2.3681	2.4427	2.5174
1600	0.1365	0.2141	0.2907	0.3683	0.4449	0.5215	0.5991	0.6758	0.7524	0.8300	0.9066	0.9832	1.0608	1.1374	1.2140	1.2916	1.3682	1.4448	1.5224	1.5990	1.6756	1.7532	1.8298	1.9074	1.9840	2.0607	2.1382	2.2149	2.2915	2.3691	2.4457	2.5223	2.5989
1650	0.1395	0.2180	0.2956	0.3742	0.4528	0.5314	0.6090	0.6875	0.7661	0.8447	0.9223	1.0009	1.0794	1.1580	1.2356	1.3142	1.3928	1.4713	1.5489	1.6275	1.7061	1.7847	1.8623	1.9408	2.0194	2.0980	2.1756	2.2541	2.3327	2.4113	2.4889	2.5665	2.6441
1700	0.1434	0.2249	0.3055	0.3860	0.4665	0.5481	0.6286	0.7091	0.7897	0.8712	0.9518	1.0323	1.1128	1,1944	1.2749	1.3554	1.4360	1.5175	1.5980	1.6786	1.7591	1.8406	1.9212	2.0017	2.0823	2.1638	2.2443	2.3249	2.4054	2.4869	2.5675	2.6480	2.7286
1750	0.1483	0.2318	0.3143	0.3978	0.4813	0.5648	0.6473	0.7308	0.8142	0.8977	0.9802	1.0637	1.1472	1.2307	1.3132	1.3967	1.4802	1.5637	1.6462	1.7297	1.8131	1.8966	1.9791	2.0626	2.1461	2.2296	2.3121	2.3956	2.4791	2.5626	2.6451	2.7276	2.8101
1800	0.1522	0.2387	0.3241	0.4096	0.4950	0.5815	0.6669	0.7524	0.8378	0.9243	1.0097	1.0952	1.1806	1.2670	1.3525	1.4379	1.5234	1.6098	1.6953	1.7807	1.8662	1.9526	2.0381	2.1235	2.2090	2.2954	2.3809	2.4663	2.5518	2.6382	2.7236	2.8091	2.8945
1850	0.1572	0.2456	0.3330	0.4214	0.5098	0.5982	0.6856	0.7740	0.8624	0.9508	1.0382	1.1266	1.2150	1.3034	1.3908	1.4792	1.5676	1.6560	1.7434	1.8318	1.9202	2.0086	2.0960	2.1844	2.2728	2.3612	2.4486	2.5370	2.6254	2.7138	2.8012	2.8887	2.9761
1900	0.1611	0.2514	0.3428	0.4332	0.5235	0.6139	0.7052	0.7956	0.8859	0.9763	1.0677	1.1580	1.2484	1.3387	1.4301	1.5204	1.6108	1.7012	1.7925	1.8829	1.9732	2.0636	2.1549	2.2453	2.3357	2.4260	2.5174	2.6077	2.6981	2.7885	2.8798	2.9712	3.0625
1950	0.1660	0.2583	0.3516	0.4449	0.5382	0.6306	0.7239	0.8172	0.9105	1.0028	1.0961	1.1894	1.2828	1.3751	1.4684	1.5617	1.6550	1.7473	1.8406	1.9340	2.0273	2.1196	2.2129	2.3062	2.3995	2.4918	2.5852	2.6785	2.7718	2.8641	2.9574	3.0507	3.1440
2000	0.1699	0.2652	0.3614	0.4567	0.5520	0.6473	0.7435	0.8388	0.9341	1.0293	1.1256	1.2209	1.3161	1.4114	1.5077	1.6030	1.6982	1.7935	1.8898	1.9850	2.0803	2.1756	2.2718	2.3671	2.4624	2.5576	2.6539	2.7492	2.8445	2.9397	3.0360	3.1322	3.2285

1 electric actuator 4 Nm, single-section version 1
electric actuator 7 Nm, single-section version 1
electric actuator 18 Nm, single-section version
2 electric drives of 4 Nm each, two-section design
2 electric actuators of 7 Nm each, two-section version 2
electric actuators of 18 Nm each, two-section version 4
electric actuators of 7 Nm each, four-section version 4
electric actuators of 18 Nm each, four-section version

Living cross-section area m_2 KP-1 flame retardant valves with excess pressure relief function

Width \ Height	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600	1650	1700
250	0.039	0.05	0.06	0.071	0.076	0.087	0.097	0.108	0.118	0.129	0.139	0.15	0.155	0.166	0.176	0.187	0.197	0.208	0.218	0.229	0.240	0.251	0.262	0.273	0.284	0.295	0.306	0.317	0.328	0.339
300	0.049	0.062	0.075	0.088	0.095	0.108	0.121	0.134	0.147	0.16	0.173	0.186	0.193	0.206	0.219	0.232	0.245	0.258	0.271	0.284	0.297	0.310	0.323	0.336	0.349	0.362	0.375	0.388	0.401	0.414
350	0.058	0.074	0.089	0.105	0.113	0.129	0.144	0.16	0.175	0.191	0.206	0.222	0.23	0.246	0.261	0.277	0.292	0.308	0.323	0.339	0.355	0.371	0.387	0.403	0.419	0.435	0.451	0.467	0.483	0.499
400	0.068	0.086	0.104	0.122	0.132	0.15	0.168	0.186	0.204	0.222	0.24	0.258	0.268	0.286	0.304	0.322	0.34	0.358	0.376	0.394	0.412	0.430	0.448	0.466	0.484	0.502	0.520	0.538	0.556	0.574
450	0.077	0.098	0.118	0.139	0.15	0.171	0.191	0.212	0.232	0.253	0.273	0.294	0.305	0.326	0.346	0.367	0.387	0.408	0.428	0.449	0.470	0.491	0.512	0.533	0.554	0.575	0.596	0.617	0.638	0.659
500	0.087	0.11	0.133	0.156	0.169	0.192	0.215	0.238	0.261	0.284	0.307	0.33	0.343	0.366	0.389	0.412	0.435	0.458	0.481	0.504	0.527	0.550	0.573	0.596	0.619	0.642	0.665	0.688	0.711	0.734
550	0.096	0.122	0.147	0.173	0.187	0.213	0.238	0.264	0.289	0.315	0.34	0.366	0.38	0.406	0.431	0.457	0.482	0.508	0.533	0.559	0.585	0.611	0.637	0.663	0.689	0.715	0.741	0.767	0.793	0.819
600	0.106	0.134	0.162	0.19	0.206	0.234	0.262	0.29	0.318	0.346	0.374	0.402	0.418	0.446	0.474	0.502	0.53	0.558	0.586	0.614	0.642	0.670	0.698	0.726	0.754	0.782	0.810	0.838	0.866	0.894
650	0.115	0.146	0.176	0.207	0.224	0.255	0.285	0.316	0.346	0.377	0.407	0.438	0.455	0.486	0.516	0.547	0.577	0.608	0.638	0.669	0.700	0.731	0.762	0.793	0.824	0.855	0.886	0.917	0.948	0.979
700	0.125	0.158	0.191	0.224	0.243	0.276	0.309	0.342	0.375	0.408	0.441	0.474	0.493	0.526	0.559	0.592	0.625	0.658	0.691	0.724	0.757	0.790	0.823	0.856	0.889	0.922	0.955	0.988	0.1021	0.1054
750	0.134	0.17	0.205	0.241	0.261	0.297	0.332	0.368	0.403	0.439	0.474	0.51	0.53	0.566	0.601	0.637	0.672	0.708	0.743	0.779	0.815	0.851	0.887	0.923	0.959	0.995	0.1031	0.1067	0.1103	0.1139
800	0.144	0.182	0.22	0.258	0.28	0.318	0.356	0.394	0.432	0.47	0.508	0.546	0.568	0.606	0.644	0.682	0.72	0.758	0.796	0.834	0.872	0.910	0.948	0.986	0.1024	0.1062	0.1100	0.1138	0.1176	0.1214
850	0.153	0.194	0.234	0.275	0.298	0.339	0.379	0.42	0.46	0.501	0.541	0.582	0.605	0.646	0.686	0.727	0.767	0.808	0.848	0.889	0.930	0.971	0.1012	0.1053	0.1094	0.1135	0.1176	0.1217	0.1258	0.1299
900	0.163	0.206	0.249	0.292	0.317	0.360	0.403	0.446	0.489	0.532	0.575	0.618	0.643	0.686	0.729	0.772	0.815	0.858	0.901	0.944	0.987	0.1030	0.1073	0.1116	0.1159	0.1202	0.1245	0.1288	0.1331	0.1374
950	0.172	0.218	0.263	0.309	0.335	0.381	0.426	0.472	0.517	0.563	0.608	0.654	0.680	0.726	0.771	0.817	0.862	0.908	0.953	0.999	0.1045	0.1091	0.1137	0.1183	0.1229	0.1275	0.1321	0.1367	0.1413	0.1459
1000	0.182	0.23	0.278	0.326	0.354	0.402	0.45	0.498	0.546	0.594	0.642	0.69	0.718	0.766	0.814	0.862	0.91	0.958	1,006	1,054	1,102	1,150	1,198	1,246	1,294	1,342	1,390	1,438	1,486	1,534
1050	0.191	0.242	0.292	0.343	0.372	0.423	0.473	0.524	0.574	0.625	0.675	0.726	0.755	0.806	0.856	0.907	0.957	1,008	1,058	1,109	1,160	1,211	1,262	1,313	1,364	1,415	1,466	1,517	1,568	1,619
1100	0.201	0.254	0.307	0.36	0.391	0.444	0.497	0.55	0.603	0.656	0.709	0.762	0.793	0.846	0.899	0.952	1,005	1,058	1,111	1,164	1,217	1,270	1,323	1,376	1,429	1,482	1,535	1,588	1,641	1,694
1150	0.21	0.266	0.321	0.377	0.409	0.465	0.52	0.576	0.631	0.687	0.742	0.798	0.83	0.886	0.941	0.997	1,052	1,108	1,163	1,219	1,275	1,331	1,387	1,443	1,499	1,555	1,611	1,667	1,723	1,779
1200	0.22	0.278	0.336	0.394	0.428	0.486	0.544	0.602	0.66	0.718	0.776	0.834	0.868	0.926	0.984	1,142	1.1	1,158	1,216	1,274	1,332	1,390	1,448	1,506	1,564	1,622	1,680	1,738	1,796	1,854
1250	0.23	0.290	0.351	0.411	0.447	0.507	0.1036	0.628	0.499	0.749	0.810	0.870	0.1653	0.966	0.1027	0.997	1,050	1,208	1,269	1,329	1,389	1,449	1,509	1,569	1,629	1,689	1,749	1,809	1,869	1,929
1300	0.24	0.302	0.366	0.428	0.466	0.528	0.1528	0.654	0.1064	0.780	0.844	0.906	0.2438	0.1006	0.1070	1,142	1,101	1,258	1,322	1,384	1,446	1,508	1,570	1,632	1,694	1,756	1,818	1,880	1,942	1.1004
1350	0.25	0.314	0.381	0.445	0.485	0.549	0.2020	0.680	0.1629	0.811	0.878	0.942	0.3223	0.1046	0.1113	0.997	1,152	1,308	1,375	1,439	1,503	1,567	1,631	1,695	1,759	1,823	1,887	1,951	1.1015	1.1079
1400	0.26	0.326	0.396	0.462	0.504	0.570	0.2512	0.706	0.2194	0.842	0.912	0.978	0.4008	0.1086	0.1156	1,142	1,203	1,358	1,428	1,494	1,560	1,626	1,692	1,758	1,824	1,890	1,956	1.1022	1.1088	1.1154
1450	0.27	0.338	0.411	0.479	0.523	0.591	0.3004	0.732	0.2759	0.873	0.946	0.1014	0.4793	0.1126	0.1199	0.997	1,254	1,408	1,481	1,549	1,617	1,685	1,753	1,821	1,889	1,957	1.1025	1.1093	1.1161	1.1229
1500	0.28	0.350	0.426	0.496	0.542	0.612	0.3496	0.758	0.3324	0.904	0.980	0.1050	0.5578	0.1166	0.1242	1,142	1,305	1,458	1,534	1,604	1,674	1,744	1,814	1,884	1,954	1.1024	1.1094	1.1164	1.1234	1.1304
1550	0.29	0.362	0.441	0.513	0.561	0.633	0.3988	0.784	0.3889	0.935	0.1014	0.1086	0.6363	0.1206	0.1285	0.997	1,356	1,508	1,587	1,659	1,731	1,803	1,875	1,947	1.1019	1.1091	1.1163	1.1235	1.1307	1.1379
1600	0.30	0.374	0.456	0.530	0.580	0.654	0.4480	0.810	0.4454	0.966	0.1048	0.1122	0.7148	0.1246	0.1328	1,142	1,407	1,558	1,640	1,714	1,788	1,862	1,936	1.1010	1.1084	1.1158	1.1232	1.1306	1.1380	1.1454
1650	0.31	0.386	0.471	0.547	0.599	0.675	0.4972	0.836	0.5019	0.997	0.1082	0.1158	0.7933	0.1286	0.1371	0.997	1,458	1,608	1,693	1,769	1,845	1,921	1,997	1.1073	1.1149	1.1225	1.1301	1.1377	1.1453	1.1529
1700	0.32	0.398	0.486	0.564	0.618	0.696	0.5464	0.862	0.5584	0.1028	0.1116	0.1194	0.8718	0.1326	0.1414	1,142	1,509	1,658	1,746	1,824	1,902	1,980	1.1058	1.1136	1.1214	1.1292	1.1370	1.1448	1.1526	1.1604
1750	0.33	0.410	0.501	0.581	0.637	0.717	0.5956	0.888	0.6149	0.1059	0.1150	0.1230	0.9503	0.1366	0.1457	0.997	1,560	1,708	1,799	1,879	1,959	1.1039	1.1119	1.1199	1.1279	1.1359	1.1439	1.1519	1.1599	1.1679
1800	0.34	0.422	0.516	0.598	0.656	0.738	0.6448	0.914	0.6714	0.1090	0.1184	0.1266	0.1029	0.1406	0.1500	1,142	1,611	1,758	1,852	1,934	1.1016	1.1098	1.1180	1.1262	1.1344	1.1426	1.1508	1.1590	1.1672	1.1754
1850	0.35	0.434	0.531	0.615	0.675	0.759	0.6940	0.940	0.7279	0.1121	0.1218	0.1302	0.1107	0.1446	0.1543	0.997	1,662	1,808	1,905	1,989	1.1073	1.1157	1.1241	1.1325	1.1409	1.1493	1.1577	1.1661	1.1745	1.1829
1900	0.36	0.446	0.546	0.632	0.694	0.780	0.7432	0.966	0.7844	0.1152	0.1252	0.1338	0.1186	0.1486	0.1586	0.997	1,713	1,858	1,958	1.1044	1.1130	1.1216	1.1302	1.1388	1.1474	1.1560	1.1646	1.1732	1.1818	1.1904
1950	0.37	0.458	0.561	0.649	0.713	0.801	0.7924	0.992	0.8409	0.1183	0.1286	0.1374	0.1264	0.1526	0.1629	1,142	1,764	1,908	1.1011	1.1099	1.1187	1.1275	1.1363	1.1451	1.1539	1.1627	1.1715	1.1803	1.1891	1,1979
2000	0.38	0.470	0.576	0.666	0.732	0.822	0.8416	0.1018	0.8974	0.1214	0.1320	0.1410	0.1343	0.1566	0.1672	0.997	1,815	1,958	1.1064	1.1154	1.1244	1.1334	1.1424	1.1514	1.1604	1.1694	1.1784	1.1874	1,1964	1.2054

Electrical diagram of the valve connection



Electrical diagram of a spring-return electric actuator with a thermal cut-out.
Parallel connection of several drives is possible, taking into account the capacities