

Pressure regulating valve

Type DEK



The pressure control damper regulates the overpressure in the stairwell via a spring mechanism purely mechanically - within seconds. This complies with the control time requirements of DIN EN 12101-6.

The closing torque of the damper system is adapted to opening air force torques. The damper remains closed until the set control pressure is reached. If the pressure continues to rise, the control damper opens just enough to maintain the set overpressure in the stairwell.

When the doors open and the resulting pressure drop occurs, the control damper closes simultaneously and the entire control volume flow is available for flow through the open door.

Closing the door causes the pressure control damper to open immediately. Due to the function of the regulating flap, the maximum permissible overpressure is not exceeded at any time.

Technical data

Standard time	< 3 seconds (according to EN 12101-6)
Control pressure	30 ... 70 Pa (control pressure is preset at the factory, usually 50Pa)
Functional safety DEK	Re 10,000 (10,000 load cycles)
Frame material	Aluminium
Flap material	Aluminium

Proof of suitability

Reliability in operation and compliance with the control time requirements (3 seconds) in accordance with DIN EN 12101-6 have been proven and certified by the Institute for Industrial Aerodynamics (I.F.I.) in Aachen through functional testing, stability and resonance testing after 10,000 load cycles.

Selection table 50Pa

DEK without accessories											
Maximum controllable volume flow* at 50Pa control pressure											
Nominal dimension of the pressure control damper in mm (H x W), volume flow in m³/h											
b h	500	600	700	800	900	1000	1100	1200	1300	1400	1500
500	5.000	5.900	6.900	7.900	8.900	9.900	10.900	11.900	12.900	13.900	14.900
600	5.900	7.100	8.300	9.500	10.700	11.900	13.100	14.300	15.400	16.600	17.800
700	6.900	8.300	9.700	11.100	12.500	13.900	15.200	16.600	18.000	19.400	20.800
800	7.900	9.500	11.100	12.700	14.300	15.800	17.400	19.000	20.600	22.200	23.800
900	8.900	10.700	12.500	14.300	16.000	17.800	19.600	21.400	23.200	24.900	26.700
1000	9.900	11.900	13.900	15.800	17.800	19.800	21.800	23.800	25.700	27.700	29.700
1100	10.900	13.100	15.200	17.400	19.600	21.800	24.000	26.100	28.300	30.500	32.700
1200	11.900	14.300	16.600	19.000	21.400	23.800	26.100	28.500	30.900	33.300	35.600
1300	12.900	15.400	18.000	20.600	23.200	25.700	28.300	30.900	33.500	36.000	38.600
1400	13.900	16.600	19.400	22.200	24.900	27.700	30.500	33.300	36.000	38.800	41.600
1500	14.900	17.800	20.800	23.800	26.700	29.700	32.700	35.600	38.600	41.600	44.600

The volume flow rates listed in the table only take into account the pressure loss of the pressure control damper and not the resistances located behind it, such as multileaf dampers, louvre windows, bends, weather louvres, etc. These can significantly reduce the maximum volume flow rate. These can significantly reduce the maximum volume flow rate and must be taken into account in the dimensioning. When using weather louvres, the opening should be larger than the nominal dimension of the DEK.

DEK with accessories (JK or LF)											
Maximum controllable volume flow** at 50Pa control pressure											
Nominal dimension of the pressure control damper in mm (H x W), volume flow in m³/h											
b h	500	600	700	800	900	1000	1100	1200	1300	1400	1500
500	4.500	5.400	6.300	7.200	8.100	9.000	9.900	10.800	11.700	12.600	13.500
600	5.400	6.500	7.600	8.600	9.700	10.800	11.900	13.000	14.000	15.100	16.200
700	6.300	7.600	8.800	10.100	11.300	12.600	13.900	15.100	16.400	17.600	18.900
800	7.200	8.600	10.100	11.500	13.000	14.400	15.800	17.300	18.700	20.200	21.600
900	8.100	9.700	11.300	13.000	14.600	16.200	17.800	19.400	21.100	22.700	24.300
1000	9.000	10.800	12.600	14.400	16.200	18.000	19.800	21.600	23.400	25.200	27.000

DEK with accessories (JK or LF)

Maximum controllable volume flow** at 50Pa control pressure

Nominal dimension of the pressure control damper in mm (H x W), volume flow in m³/h

b h	500	600	700	800	900	1000	1100	1200	1300	1400	1500
1100	9.900	11.900	13.900	15.800	17.800	19.800	21.800	23.800	25.700	27.700	29.700
1200	10.800	13.000	15.100	17.300	19.400	21.600	23.800	25.900	28.100	30.200	32.400
1300	11.700	14.000	16.400	18.700	21.100	23.400	25.700	28.100	30.400	32.800	35.100
1400	12.600	15.100	17.600	20.200	22.700	25.200	27.700	30.200	32.800	35.300	37.800
1500	13.500	16.200	18.900	21.600	24.300	27.000	29.700	32.400	35.100	37.800	40.500

The volume flow rates listed in the table take into account the pressure loss of the pressure control damper and the louvre damper or louvre window behind it. Downstream elements such as bends, weather louvres, etc. can significantly reduce the maximum volume flow rate and must be taken into account in the dimensioning. When using weather louvres, the opening should be larger than the nominal dimension of the DEK.

Selection table 40Pa

DEK without accessories											
Maximum controllable volume flow* at 40Pa control pressure											
Nominal dimension of the pressure control damper in mm (H x W), volume flow in m³/h											
b h	500	600	700	800	900	1000	1100	1200	1300	1400	1500
500	4.200	5.100	5.900	6.800	7.600	8.500	9.300	10.200	11.000	11.800	12.700
600	5.100	6.100	7.100	8.100	9.100	10.200	11.200	12.200	13.200	14.200	15.200
700	5.900	7.100	8.300	9.500	10.700	11.800	13.000	14.200	15.400	16.600	17.800
800	6.800	8.100	9.500	10.800	12.200	13.500	14.900	16.200	17.600	19.000	20.300
900	7.600	9.100	10.700	12.200	13.700	15.200	16.800	18.300	19.800	21.300	22.800
1000	8.500	10.200	11.800	13.500	15.200	16.900	18.600	20.300	22.000	23.700	25.400
1100	9.300	11.200	13.000	14.900	16.800	18.600	20.500	22.300	24.200	26.100	27.900
1200	10.200	12.200	14.200	16.200	18.300	20.300	22.300	24.400	26.400	28.400	30.500
1300	11.000	13.200	15.400	17.600	19.800	22.000	24.200	26.400	28.600	30.800	33.000
1400	11.800	14.200	16.600	19.000	21.300	23.700	26.100	28.400	30.800	33.200	35.500
1500	12.700	15.200	17.800	20.300	22.800	25.400	27.900	30.500	33.000	35.500	38.100

The volume flow rates listed in the table only take into account the pressure loss of the pressure control damper and not the resistances located behind it, such as multileaf dampers, louvre windows, bends, weather louvres, etc. These can significantly reduce the maximum volume flow rate. These can significantly reduce the maximum volume flow rate and must be taken into account in the dimensioning. When using weather louvres, the opening should be larger than the nominal dimension of the DEK.

DEK with accessories (JK or LF)											
Maximum controllable volume flow** at 40Pa control pressure											
Nominal dimension of the pressure control damper in mm (H x W), volume flow in m³/h											
b h	500	600	700	800	900	1000	1100	1200	1300	1400	1500
500	3.800	4.500	5.300	6.000	6.800	7.600	8.300	9.100	9.800	10.600	11.300
600	4.500	5.400	6.400	7.300	8.200	9.100	10.000	10.900	11.800	12.700	13.600
700	5.300	6.400	7.400	8.500	9.500	10.600	11.600	12.700	13.800	14.800	15.900
800	6.000	7.300	8.500	9.700	10.900	12.100	13.300	14.500	15.700	16.900	18.100
900	6.800	8.200	9.500	10.900	12.200	13.600	15.000	16.300	17.700	19.100	20.400
1000	7.600	9.100	10.600	12.100	13.600	15.100	16.600	18.100	19.700	21.200	22.700

DEK with accessories (JK or LF)

Maximum controllable volume flow** at **40Pa** control pressure

Nominal dimension of the pressure control damper in mm (H x W), volume flow in m³/h

b h	500	600	700	800	900	1000	1100	1200	1300	1400	1500
1100	8.300	10.000	11.600	13.300	15.000	16.600	18.300	20.000	21.600	23.300	24.900
1200	9.100	10.900	12.700	14.500	16.300	18.100	20.000	21.800	23.600	25.400	27.200
1300	9.800	11.800	13.800	15.700	17.700	19.700	21.600	23.600	25.600	27.500	29.500
1400	10.600	12.700	14.800	16.900	19.100	21.200	23.300	25.400	27.500	29.600	31.800
1500	11.300	13.600	15.900	18.100	20.400	22.700	24.900	27.200	29.500	31.800	34.000

The volume flow rates listed in the table take into account the pressure loss of the pressure control damper and the louvre damper or louvre window behind it. Downstream elements such as bends, weather louvres, etc. can significantly reduce the maximum volume flow rate and must be taken into account in the dimensioning. When using weather louvres, the opening should be larger than the nominal dimension of the DEK.

Selection table 30Pa

DEK without accessories											
Maximum controllable volume flow* at 30Pa control pressure											
Nominal dimension of the pressure control damper in mm (H x W), volume flow in m³/h											
b h	500	600	700	800	900	1000	1100	1200	1300	1400	1500
500	3.400	4.100	4.800	5.500	6.200	6.800	7.500	8.200	8.900	9.600	10.300
600	4.100	4.900	5.700	6.600	7.400	8.200	9.000	9.800	10.700	11.500	12.300
700	4.800	5.700	6.700	7.700	8.600	9.600	10.500	11.500	12.400	13.400	14.400
800	5.500	6.600	7.700	8.800	9.800	10.900	12.000	13.100	14.200	15.300	16.400
900	6.200	7.400	8.600	9.800	11.100	12.300	13.500	14.800	16.000	17.200	18.500
1000	6.800	8.200	9.600	10.900	12.300	13.700	15.000	16.400	17.800	19.200	20.500
1100	7.500	9.000	10.500	12.000	13.500	15.000	16.600	18.100	19.600	21.100	22.600
1200	8.200	9.800	11.500	13.100	14.800	16.400	18.100	19.700	21.300	23.000	24.600
1300	8.900	10.700	12.400	14.200	16.000	17.800	19.600	21.300	23.100	24.900	26.700
1400	9.600	11.500	13.400	15.300	17.200	19.200	21.100	23.000	24.900	26.800	28.700
1500	10.300	12.300	14.400	16.400	18.500	20.500	22.600	24.600	26.700	28.700	30.800

The volume flow rates listed in the table only take into account the pressure loss of the pressure control damper and not the resistances located behind it, such as multileaf dampers, louvre windows, bends, weather louvres, etc. These can significantly reduce the maximum volume flow rate. These can significantly reduce the maximum volume flow rate and must be taken into account in the dimensioning. When using weather louvres, the opening should be larger than the nominal dimension of the DEK.

DEK with accessories (JK or LF)											
Maximum controllable volume flow** at 30Pa control pressure											
Nominal dimension of the pressure control damper in mm (H x W), volume flow in m³/h											
b h	500	600	700	800	900	1000	1100	1200	1300	1400	1500
500	2.900	3.500	4.000	4.600	5.200	5.800	6.300	6.900	7.500	8.100	8.600
600	3.500	4.100	4.800	5.500	6.200	6.900	7.600	8.300	9.000	9.700	10.400
700	4.000	4.800	5.600	6.500	7.300	8.100	8.900	9.700	10.500	11.300	12.100
800	4.600	5.500	6.500	7.400	8.300	9.200	10.100	11.100	12.000	12.900	13.800
900	5.200	6.200	7.300	8.300	9.300	10.400	11.400	12.400	13.500	14.500	15.600
1000	5.800	6.900	8.100	9.200	10.400	11.500	12.700	13.800	15.000	16.100	17.300

DEK with accessories (JK or LF)

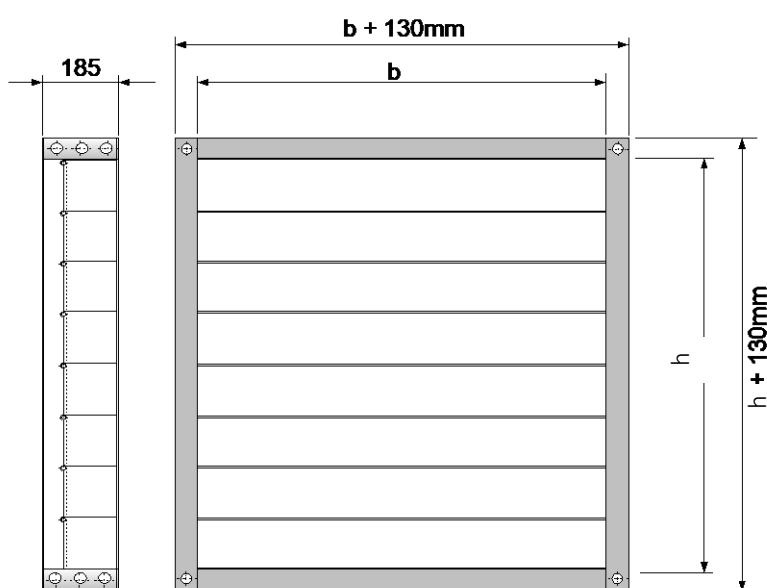
Maximum controllable volume flow** at 30Pa control pressure

Nominal dimension of the pressure control damper in mm (H x W), volume flow in m³/h

b \ h	500	600	700	800	900	1000	1100	1200	1300	1400	1500
1100	6.300	7.600	8.900	10.100	11.400	12.700	13.900	15.200	16.500	17.700	19.000
1200	6.900	8.300	9.700	11.100	12.400	13.800	15.200	16.600	18.000	19.400	20.700
1300	7.500	9.000	10.500	12.000	13.500	15.000	16.500	18.000	19.500	21.000	22.500
1400	8.100	9.700	11.300	12.900	14.500	16.100	17.700	19.400	21.000	22.600	24.200
1500	8.600	10.400	12.100	13.800	15.600	17.300	19.000	20.700	22.500	24.200	25.900

The volume flow rates listed in the table take into account the pressure loss of the pressure control damper and the louvre damper or louvre window behind it. Downstream elements such as bends, weather louvres, etc. can significantly reduce the maximum volume flow rate and must be taken into account in the dimensioning. When using weather louvres, the opening should be larger than the nominal dimension of the DEK.

Main dimensions

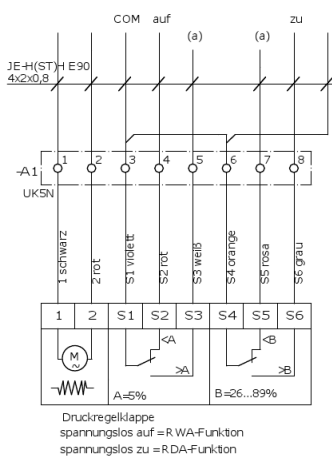


Wide	b = 500 ... 1500 mm
Height	h = 500 ... 1500 mm
Pitch width	100 mm
Height division	100 mm
Depth	185 mm

Wiring dia-

Elektrischer Anschluss Druckregelklappe				
	Antrieb	Meldung	Leitungsüberw.	
	24V AC	24V AC		24V AC
Klappe zu	24V	GND	↗	↘
Klappe auf		GND	↘	↗
Leitungsüberwach. ok				24V

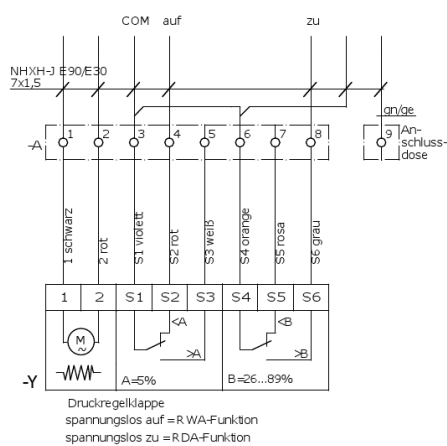
optional



Option DEKA 24 V

Elektrischer Anschluss Druckregelklappe				
	Antrieb	Meldung	Leitungsüberw.	
	230V AC	230V AC		230V AC
Klappe zu	230V	N	↗	↘
Klappe auf		N	↘	↗
Leitungsüberwach. ok				230V

optional



Option DEKA 230 V

Accessories

Option DEKA

Spring return motor for pressure control unit; The unit can be opened for ventilation purposes and smoke evacuation. Light can shine through the unit. Standard 24 V. Alternatively also 230 V.



Option JK

Airtight multi-leaf damper to prevent cold air from entering and condensation from forming.

Actuator with spring return motor 24V, currentless opening, limit switch.



Option LF

Glass louvre window (LF) for façade installation with several horizontally mounted glass louvre segments.

Actuator 24 V, DC

Position switch for signalling the open position



Option WBS

Internal wall mounting kit (frame, housing, protective grille) for mounting a pressure control damper type DEK or DEKA, as well as a downstream multileaf damper if required.



Option WG

Wind and rain protection housing for pressure control units on exterior walls. Minimises wind influences on the control behaviour of the smoke protection pressure unit.



Option WH

Flow-optimised wind protection bonnet for external wall mounting. Minimises wind influences on the control behaviour of the smoke protection pressure system.

Appearance similar to WG,
pressure control unit only
Mounted separately from the enclosure (inner wall)