

SEDS-L

Single compartment smoke control damper

Technical Documentation

Installation, Commissioning, Operation, Maintenance and Service Manual



UK
CA
2822

CE
1391

MANDÍK®

www.mandik.co.uk

Manufacturer

MANDÍK, a. s. • Dobříšská 550 • 267 24 Hostomice • Czech Republic • Tel.: +420 311 706 742 • E-Mail: mandik@mandik.cz

Authorized representative

MANDIK UK Ltd • 130 Aztec West • Bristol BS32 4UB • United Kingdom • Tel.: +44 117 4526376 • E-Mail: help@mandik.co.uk

These technical specifications state a row of manufactured sizes and models of smoke Single compartment smoke control damper SEDS-L. It is valid for production, designing, ordering, delivery, maintenance and operation.

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I. GENERAL

Description

Dampers - SEDS-L are shutters in smoke ventilation system. Dampers are designed to remove heat and combustion products (e.g. smoke) from single fire compartment. In the event of fire the Smoke and Fire ventilation system opens the damper in the affected section which removes combustion products and heat from this section.

The damper blade is controlled by electrical actuating mechanism.

The dampers can be installed in various duct sizes with respect to the field of direct applications according with BS EN 1366-9.

The field of direct applications based on tests results is acceptable according to BS EN 1363-1, part A.1 and A.2, BS EN 1366-2, part 13 and BS EN 1366-10, part 9.



Damper SEDS-L

Damper characteristics

- CE certified acc. to BS EN 12101-8
- Tested in accordance with BS EN 1366-10
- Classified **E₆₀₀ 120 (v_{ed}-h_{od}-i↔o) S1500C_{mod}MA_{single}** acc. to BS EN 13501-4
- External Casing leakage class ATC 4 (old marking "B"), Internal leakage min. class 3 acc. to BS EN 1751
- Cycling test in class C_{mod} acc. to BS EN 12101-8
- Certificate of constancy of performance UKCA No. [2822-UKCA-CPR-XXXX](#)
- Certificate of constancy of performance CE No. [1391-CPR-XXXX/XXXX](#)
- Declaration of Performance UKCA No. [PM/SEDS-L/02/XX/X](#)
- Declaration of Performance CE No. [PM/SEDS-L/01/XX/X](#)
- Hygienic assessment - Report No. [1.6/pos/19/19b](#)

Working conditions

- Exact damper function is provided under the following conditions
 - maximum air velocity 12 m/s
 - underpressure max. -1500 Pa or overpressure max. 500 Pa
- Dampers are installed with the horizontal or vertical axis of the blades.
- Dampers are intended for installation on air ducts and in/onto the walls where in the case of wall installation, this wall with damper does not have fire resistance and therefore does not separate two fire compartments.
- Dampers are suitable for systems without abrasive, chemical and adhesive particles.
- Dampers are designed for macroclimatic areas with mild climate according to BS EN IEC 60 721-3-3 ed.2., class 3K22.
- Temperature in the place of installation is permitted to range from -20°C to +50°C.
- The Damper can be fitted with a grille.

II. DESIGN

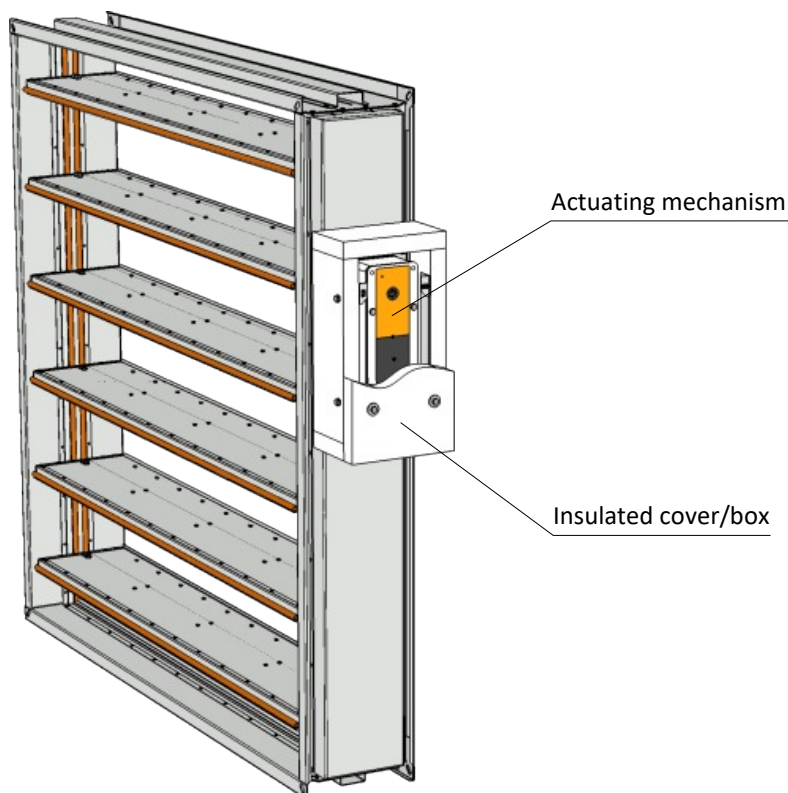
Design with actuating mechanism

Design .44 and .54

- Belimo actuators are used for dampers, series BEN, BEE, BE for 230V AC resp. 24 V AC/DC actuators (universal 24V or 230V supply) are used for large size of dampers.
- After connection to the power supply voltage, the actuator moves the damper blade to the "OPEN" position or "CLOSED" (according to the corresponding connection, see wiring diagram). If the power supply is interrupted, the actuator stops at the current position. The signalling of the "OPEN" and "CLOSED" damper blade positions is ensured by two built-in fixed "potential-free" end- limit switches.
- The actuator for operating the damper blade is mounted in an insulated cover/box. It is accessible after removing the cover lid. The electrical connection of the actuator is made with a non-flammable cable (or a cable located in the adjoining cable duct), which passes through an opening made in the wall of the insulated cover/box when installing the damper or when connecting the actuator power cable. The power and control cable must be CAT 3 as BS EN8519.

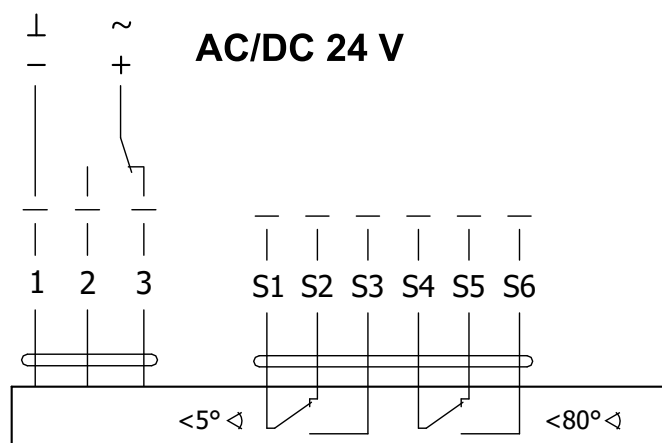
Design .65

- Belimo modulating actuators, BEN (BEE)-SR series for 24V AC/DC are specially designed for remote control of smoke control dampers. The position of the damper blade is adjustable by means of control voltage 0 (2)...10V DC.
 - The signalling of the "OPEN" and "CLOSED" damper blade positions is ensured by two built-in fixed "potential-free" limit switches.
 - The actuator for operating the damper blade is mounted in an insulated cover/box. It is accessible after removing
- the cover lid. The electrical connection of the actuator is made with non-flammable cables (or cables located in the adjoining cable duct), which pass through an opening made in the wall of the insulated cover when installing the damper or when connecting the power cables of the actuator. The power and control cable must be CAT 3 as BS EN8519.

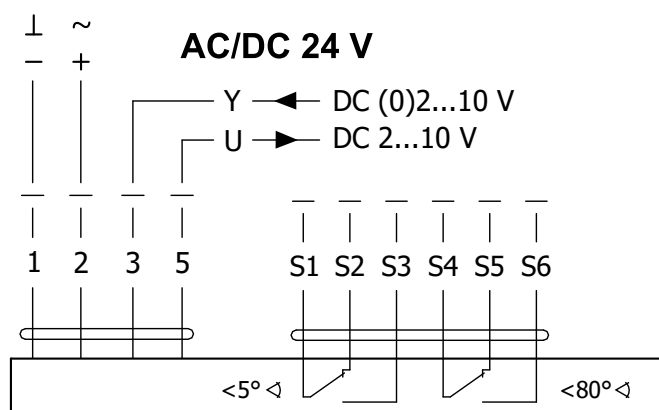


Design .44, .54 and .65

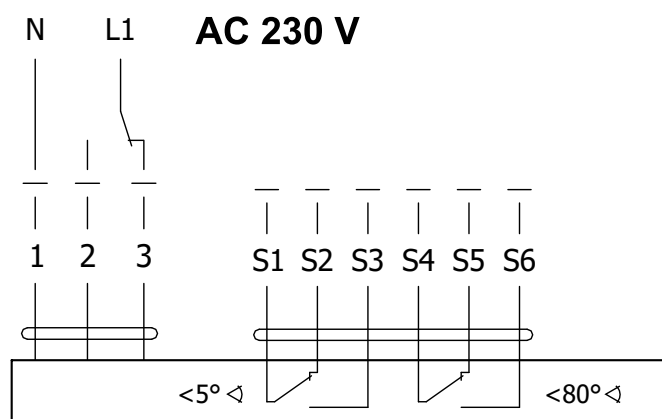
Actuator BELIMO BEN 24(-ST)



Actuator BELIMO BEN 24-SR



Actuator BELIMO BEN 230



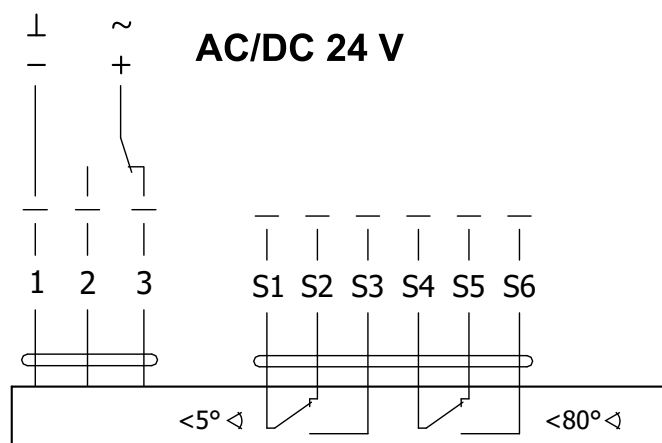
Extended leads are not possible with smoke control dampers as the belimo cabls are not fire rated to a high Field wiring must be brought into and terminated within the damper housing. For more detail → see pages 20 to 22, paragraph Assembly.

Actuator BELIMO BEN 24(-ST), BEN 24-SR, BEN 230

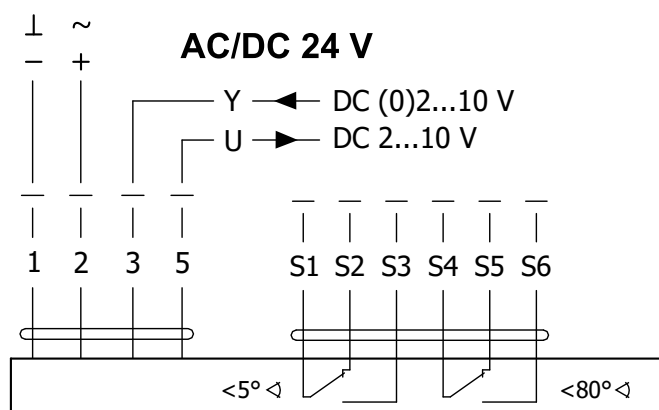
Actuator BELIMO - 15 Nm	BEN 24(-ST)	BEN 24-SR*	BEN 230
Power voltage	AC/DC 24 V 50/60Hz	AC/DC 24 V 50/60Hz	AC 230 V 50/60Hz
Power consumption - in operation - in the end position	3 W 0,1 W	3 W 0,3 W	4 W 0,4 W
Dimensioning	6 VA (Imax 8,2 A @ 5 ms)	6,5 VA (Imax 8.2 A @ 5 ms)	7 VA (Imax 4 A @ 5 ms)
Protection class	III	III	II
Degree of protection		IP 54	
Adjustment time for 95°		< 30 s	
Ambient temperature		-30°C ... +55°C	
Storage temperature		-40°C ... +80°C	
Connection - drive - auxiliary switch	Cable 1 m, 3 x 0,75 mm ² Cable 1 m, 6 x 0,75 mm ² (BEN 24-ST) with plug connectors	Cable 1 m, 4 x 0,75 mm ² Cable 1 m, 6 x 0,75 mm ²	Cable 1 m, 3 x 0,75 mm ² Cable 1 m, 6 x 0,75 mm ²

* Only available for 24V and selected damper sizes

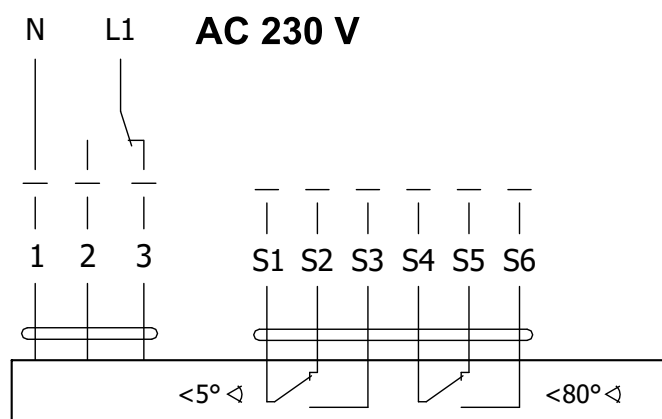
Actuator BELIMO BEE 24(-ST)



Actuator BELIMO BEE 24-SR



Actuator BELIMO BEE 230

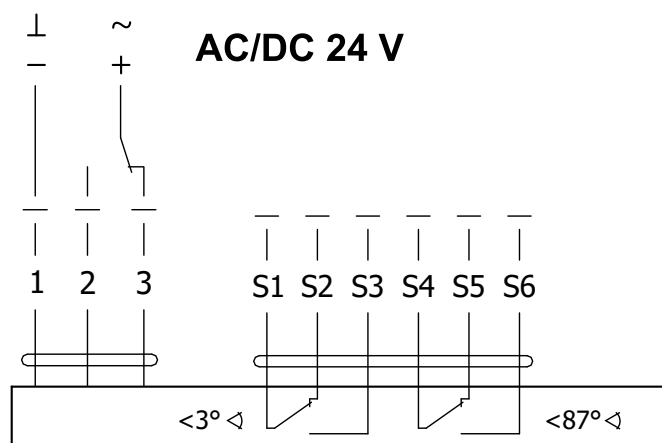
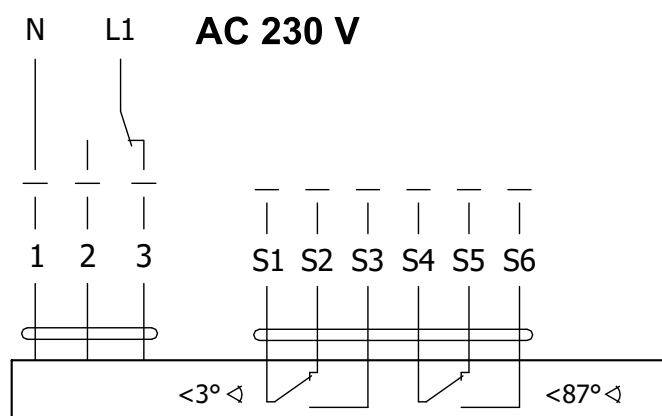


Extended leads are not possible with smoke control dampers as the belimo cabls are not fire rated to a high Field wiring must be brought into and terminated within the damper housing. For more detail → see pages 20 to 22, paragraph Assembly.

Actuator BELIMO BEE 24(-ST), BEE 24-SR, BEE 230

Actuator BELIMO - 25 Nm	BEE 24(-ST)	BEE 24-SR*	BEE 230
Power voltage	AC/DC 24 V 50/60Hz	AC/DC 24 V 50/60Hz	AC 230 V 50/60Hz
Power consumption - in operation - in the end position	2,5 W 0,1 W	3 W 0,3 W	3,5 W 0,4 W
Dimensioning	5 VA (Imax 8,2 A @ 5 ms)	5,5 VA (Imax 8.2 A @ 5 ms)	6 VA (Imax 4 A @ 5 ms)
Protection class	III	III	II
Degree of protection		IP 54	
Adjustment time for 95°		< 60 s	
Ambient temperature		-30°C ... +55°C	
Storage temperature		-40°C ... +80°C	
Connection - drive - auxiliary switch	Cable 1 m, 3 x 0,75 mm ² Cable 1 m, 6 x 0,75 mm ² (BEE 24-ST) with plug connectors	Cable 1 m, 4 x 0,75 mm ² Cable 1 m, 6 x 0,75 mm ²	Cable 1 m, 3 x 0,75 mm ² Cable 1 m, 6 x 0,75 mm ²

* Only available for 24V and selected damper sizes

Actuator BELIMO BE 24-12(-ST)**Actuator BELIMO BE 230-12**

Extended leads are not possible with smoke control dampers as the belimo cabls are not fire rated to a high Field wiring must be brought into and terminated within the damper housing. For more detail → see [pages 20 to 22](#), paragraph Assembly.

Actuator BELIMO BE 24-12(-ST), BE 230-12

Actuator BELIMO - 40 Nm	BE 24-12(-ST)	BE 230-12
Power voltage	AC/DC 24 V 50/60Hz	AC 230 V 50/60Hz
Power consumption - in operation - in the end position	12 W 0,5 W	8 W 0,5 W
Dimensioning	18 VA (Imax 8,2 A @ 5 ms)	15 VA (Imax 7.9 A @ 5 ms)
Protection class	III	II
Degree of protection	IP 54	
Adjustment time for 95°	< 60 s	
Ambient temperature	-30°C ... +55°C	
Storage temperature	-40°C ... +80°C	
Connection - drive - auxiliary switch	Cable 1 m, 3 x 0,75 mm ² Cable 1 m, 6 x 0,75 mm ² (BE 24-ST) with plug connectors	

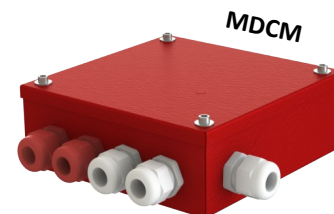
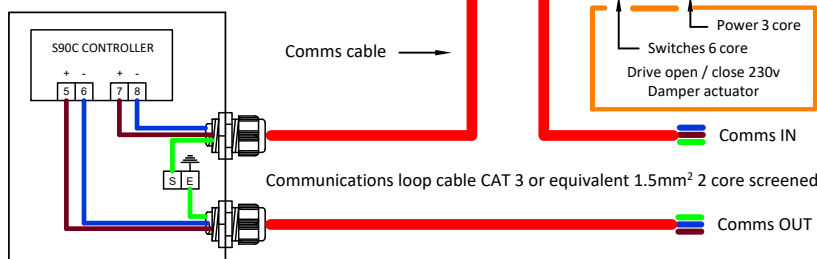
Communication and control module MDCM

- The MDCM damper control module is connected on a bi directional communication loop back to a control panel, typically located at the FCC.
- Each MDCM has a 230v local spur to power the damper actuator.
- Max terminal size in MDCM and MDPM 2.5mm²
- Up to 96x MDCM's can be connected on one loop and multiple loops can be incorporated.
- With an MA or AA system the MDCM's are mounted in a fire rated and tested Ca-Si housing to BS EN1366-10.



Details of connection of the control module interfaces inside protection box → see page 21

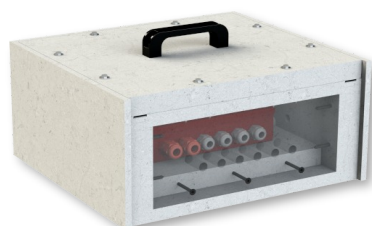
S90 mounted in an addressable smoke control damper control panel to BS ISO 21927-9



160mm x 160mm x 62mm deep steel enclosure powder coated red - IP54

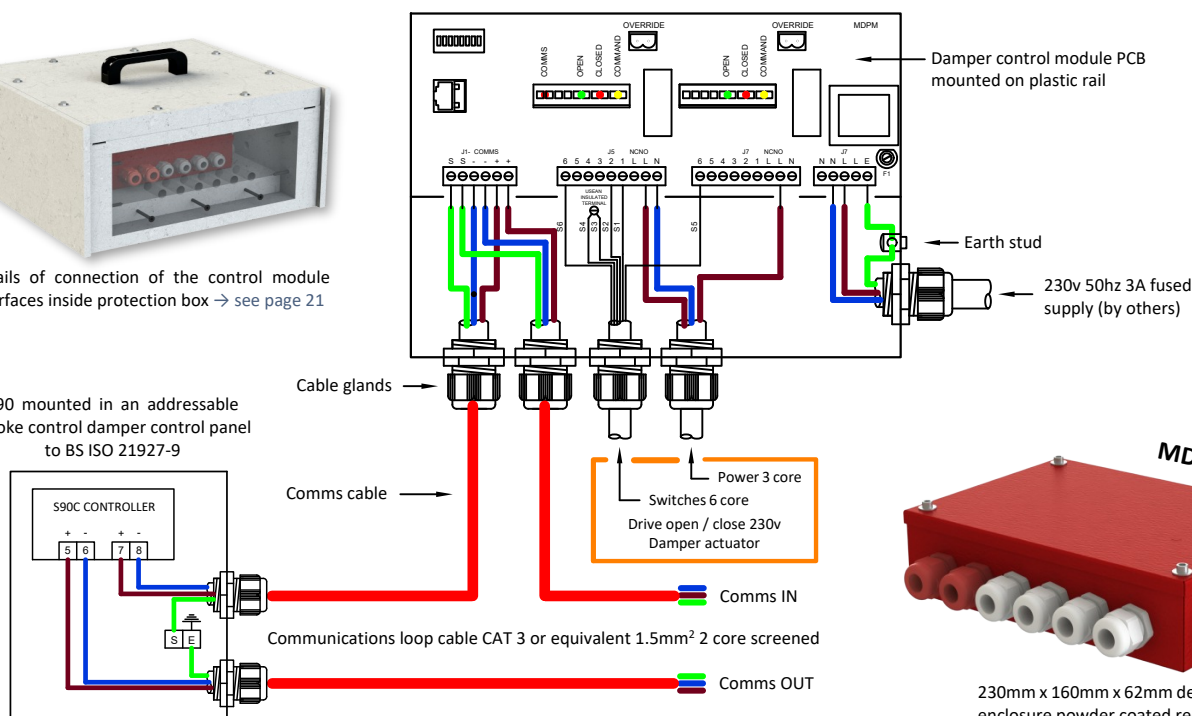
Communication and control module MDPM

- The MDPM damper control module is a combined control module and damper positioning module to provide a balanced/3R position.
- It is connected on a bi directional communication loop back to a control panel.
- Max terminal size in MDCM and MDPM 2.5mm²
- Each MDPM has a 230v local spur for powering the damper actuator, located at the FCC.
- Up to 96x MDPM's can be connected on one loop and multiple loops can be incorporated.
- With an MA or AA system the MDPM's are mounted in a fire rated and tested Ca-Si housing to BS EN1366-10.



Details of connection of the control module interfaces inside protection box → see page 21

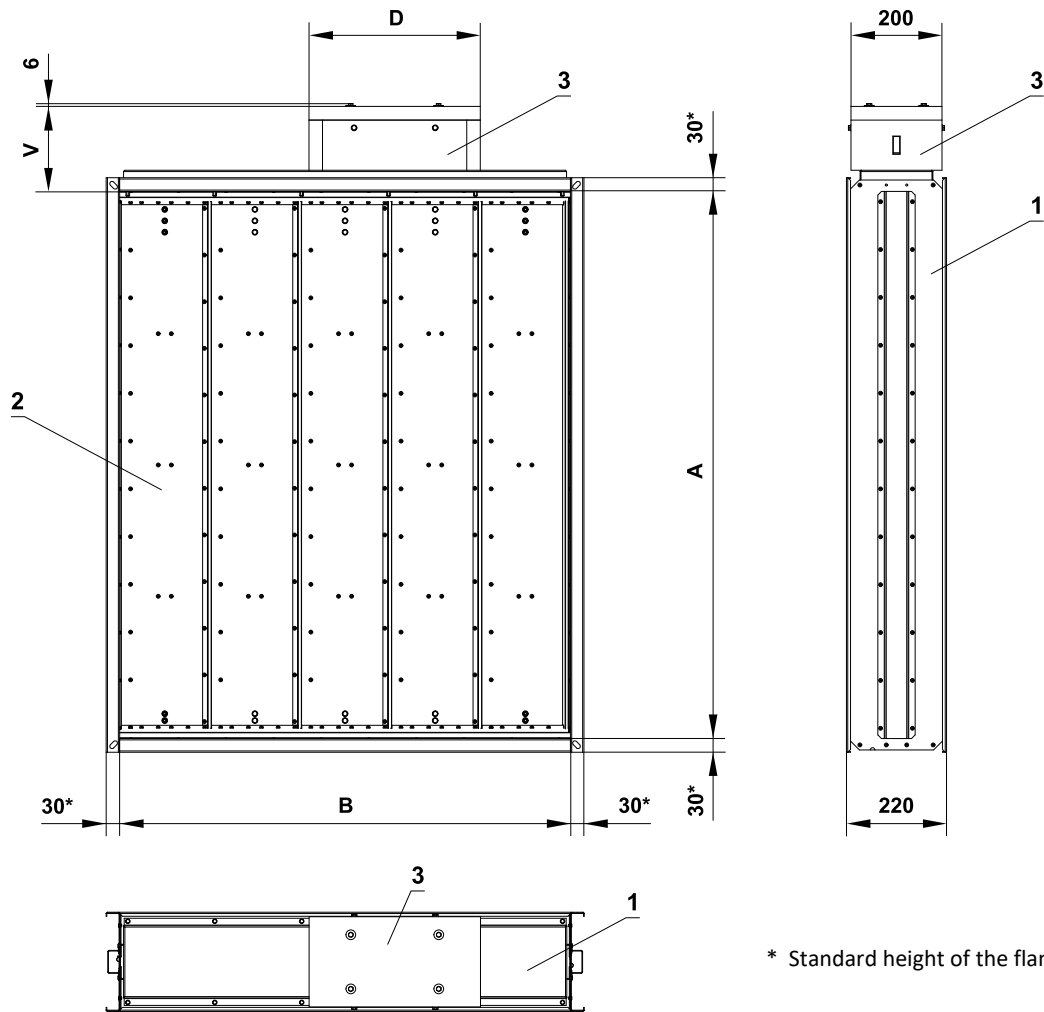
S90 mounted in an addressable smoke control damper control panel to BS ISO 21927-9



230mm x 160mm x 62mm deep steel enclosure powder coated red - IP54

III. DIMENSIONS

Damper SEDS-L

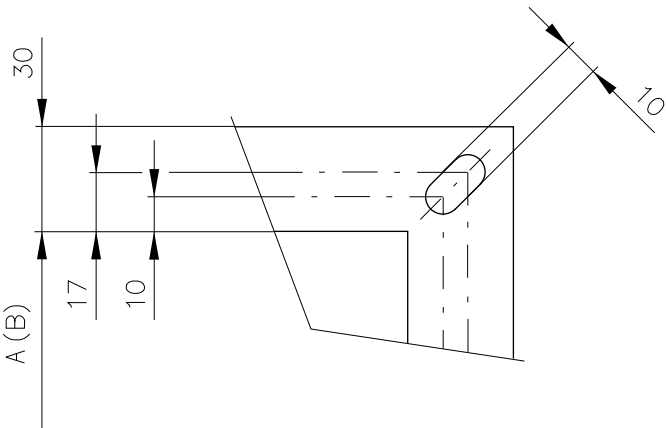


- 1 Damper body
- 2 Damper blade
- 3 Actuating mechanism cover

* Standard height of the flange

Actuating mechanism	V [mm]	D [mm]
BEN / BEE	176,5	315
BE	186,5	380

Flange with corner hole



Flanges of dampers are 30 mm wide with oval hole.

Technical parameters

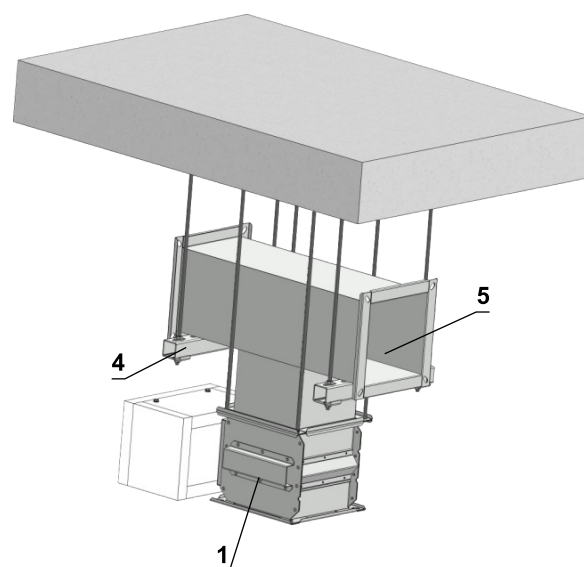
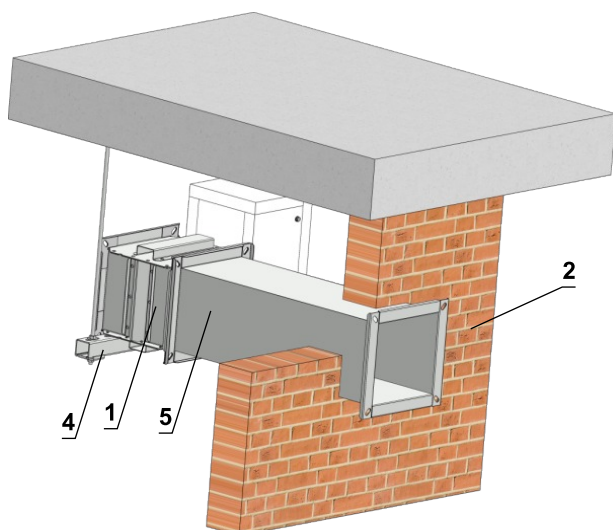
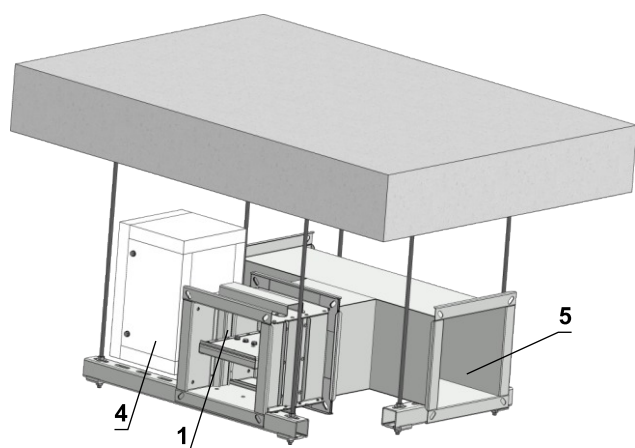
A x B [mm]	Number of blades	Weight [kg]	Effective area Sef [m²]	Actuating mechanism type	A x B [mm]	Number of blades	Weight [kg]	Effective area Sef [m²]	Actuating mechanism type
200 x	200	1	14,3	0,0227	400 x	200	1	17,6	0,0511
	250	2	16,4	0,0270		250	2	20,3	0,0608
	300	2	17,3	0,0350		300	2	21,5	0,0788
	350	2	18,3	0,0430		350	2	22,6	0,0968
	400	2	19,2	0,0510		400	2	23,8	0,1148
	450	3	21,2	0,0554		450	3	26,4	0,1246
	500	3	22,2	0,0634		500	3	27,6	0,1426
	600	3	24,1	0,0794		600	3	30,0	0,1786
	700	4	27,0	0,0917		700	4	33,7	0,2063
	800	4	28,9	0,1077		800	4	36,1	0,2423
	900	5	34,5	0,1200		900	5	42,5	0,2700
	1000	5	36,4	0,1360		1000	5	44,8	0,3060
	1100	6	39,3	0,1483		1100	6	48,6	0,3337
	1200	6	41,2	0,1643		1200	6	51,0	0,3697
250 x	200	1	15,1	0,0298	450 x	200	1	18,4	0,0582
	250	2	17,4	0,0355		250	2	21,3	0,0693
	300	2	18,4	0,0460		300	2	22,5	0,0898
	350	2	19,4	0,0565		350	2	23,7	0,1103
	400	2	20,4	0,0670		400	2	25,0	0,1308
	450	3	22,5	0,0727		450	3	27,7	0,1419
	500	3	23,5	0,0832		500	3	28,9	0,1624
	600	3	25,5	0,1042		600	3	31,4	0,2034
	700	4	28,7	0,1203		700	4	38,0	0,2349
	800	4	30,7	0,1413		800	4	40,5	0,2759
	900	5	36,5	0,1575		900	5	44,5	0,3075
	1000	5	38,5	0,1785		1000	5	47,0	0,3485
	1100	6	41,6	0,1947		1100	6	50,9	0,3801
	1200	6	43,6	0,2157		1200	6	53,4	0,4211
300 x	200	1	15,9	0,0369	500 x	200	1	19,2	0,0653
	250	2	18,3	0,0439		250	2	22,2	0,0777
	300	2	19,4	0,0569		300	2	23,5	0,1007
	350	2	20,5	0,0699		350	2	24,8	0,1237
	400	2	21,5	0,0829		400	2	26,1	0,1467
	450	3	23,8	0,0900		450	3	29,0	0,1592
	500	3	24,9	0,1030		500	3	30,3	0,1822
	600	3	27,0	0,1290		600	3	32,9	0,2282
	700	4	30,3	0,1490		700	4	39,7	0,2636
	800	4	32,5	0,1750		800	4	42,3	0,3096
	900	5	38,5	0,1950		900	5	46,5	0,3450
	1000	5	40,6	0,2210		1000	5	49,1	0,3910
	1100	6	43,9	0,2410		1100	6	53,2	0,4264
	1200	6	46,1	0,2670		1200	6	55,8	0,4724
350 x	200	1	16,8	0,0440	600 x	200	1	20,9	0,0795
	250	2	19,3	0,0524		250	2	24,2	0,0946
	300	2	20,4	0,0679		300	2	25,6	0,1226
	350	2	21,6	0,0834		350	2	27,0	0,1506
	400	2	22,7	0,0989		400	2	28,4	0,1786
	450	3	25,1	0,1073		450	3	31,6	0,1938
	500	3	26,2	0,1228		500	3	33,0	0,2218
	600	3	28,5	0,1538		600	3	35,8	0,2778
	700	4	32,0	0,1776		700	4	43,1	0,3209
	800	4	34,3	0,2086		800	4	45,9	0,3769
	900	5	40,5	0,2325		900	5	50,5	0,4200
	1000	5	42,7	0,2635		1000	5	53,3	0,4760
	1100	6	46,3	0,2874		1100	6	57,9	0,5191
	1200	6	48,5	0,3184		1200	6	60,7	0,5751

A x B [mm]	Number of blades	Weight [kg]	Effective area Sef [m²]	Actuating mechanism type	A x B [mm]	Number of blades	Weight [kg]	Effective area Sef [m²]	Actuating mechanism type
700 x	200	1	22,5	0,0937	1000 x	200	1	27,5	0,1363
	250	2	26,1	0,1115		250	2	32,0	0,1622
	300	2	27,7	0,1445		300	2	33,9	0,2102
	350	2	29,2	0,1775		350	2	35,7	0,2582
	400	2	30,7	0,2105		400	2	37,6	0,3062
	450	3	34,2	0,2284		450	3	42,0	0,3322
	500	3	35,7	0,2614		500	3	43,9	0,3802
	600	3	38,8	0,3274		600	3	50,3	0,4762
	700	4	46,4	0,3782		700	4	56,5	0,5501
	800	4	49,5	0,4442		800	4	60,3	0,6461
	900	5	54,5	0,4950		900	5	66,5	0,7200
	1000	5	57,5	0,5610		1000	5	70,2	0,8160
800 x	1100	6	62,5	0,6118	1100 x	1100	6	76,5	0,8899
	1200	6	65,6	0,6778		1200	6	80,2	0,9859
	200	1	24,2	0,1079		200	1	29,1	0,1505
	250	2	28,1	0,1284		250	2	34,0	0,1791
	300	2	29,7	0,1664		300	2	35,9	0,2321
	350	2	31,4	0,2044		350	2	37,9	0,2851
	400	2	33,0	0,2424		400	2	39,9	0,3381
	450	3	36,8	0,2630		450	3	47,2	0,3668
	500	3	38,4	0,3010		500	3	49,2	0,4198
	600	3	41,7	0,3770		600	3	53,2	0,5258
	700	4	49,8	0,4355		700	4	59,9	0,6074
	800	4	53,1	0,5115		800	4	63,8	0,7134
900 x	900	5	58,5	0,5700	1200 x	900	5	70,5	0,7950
	1000	5	61,8	0,6460		1000	5	74,5	0,9010
	1100	6	67,2	0,7045		1100	6	81,1	0,9826
	1200	6	70,5	0,7805		1200	6	85,1	1,0886
	200	1	25,8	0,1221		200	1	30,8	0,1647
	250	2	30,0	0,1453		250	2	35,9	0,1960
	300	2	31,8	0,1883		300	2	38,0	0,2540
	350	2	33,5	0,2313		350	2	40,1	0,3120
	400	2	35,3	0,2743		400	2	42,2	0,3700
	450	3	39,4	0,2976		450	3	49,8	0,4014
	500	3	41,1	0,3406		500	3	51,9	0,4594
	600	3	47,3	0,4266		600	3	56,1	0,5754
	700	4	53,1	0,4928		700	4	63,2	0,6647
	800	4	56,7	0,5788		800	4	67,4	0,7807
	900	5	62,5	0,6450		900	5	74,5	0,8700
	1000	5	66,0	0,7310		1000	5	78,7	0,9860
	1100	6	71,8	0,7972		1100	6	85,8	1,0753
	1200	6	75,4	0,8832		1200	6	90,0	1,1913

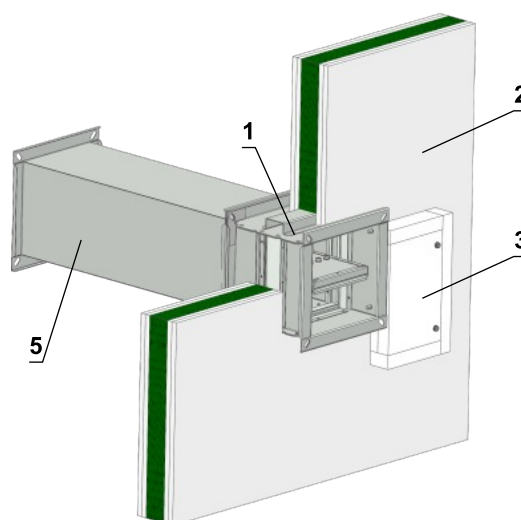
IV. INSTALLATION

Placement and installation

- Dampers single are designed to remove heat and combustion products (e.g. smoke) from single fire compartment according BS EN 12101-8.
- Dampers are designed for installation with horizontal or vertical axis of the blades.
- Connecting smoke exhaust duct has to be hung or supported so as all load transfer from the connecting smoke exhaust duct to the damper is absolutely excluded.
- To provide needed access space to the control device, all other objects must be situated at least 350 mm from the control parts of the damper.
- During installation the damper blades must be in position "CLOSED". The damper body should not be deformed in the course of installation.
- Once the damper is built in, its blade should move freely and not rub against the body of the damper during operation.



- The dampers and duct must be suspended separately.
- Duct from BS EN 12101-7 in Steel
- Details of connection to duct → see page 15



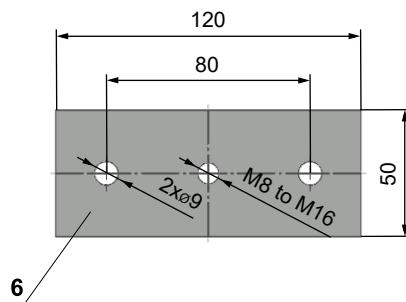
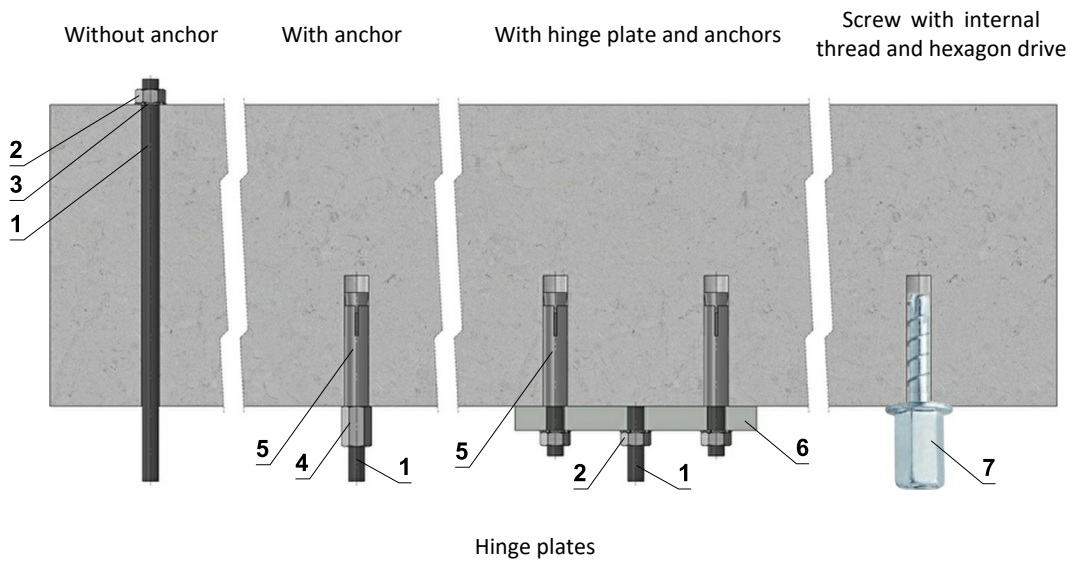
- 1 SEDs-L
- 2 Wall construction without fire resistance
- 3 Atypical protection box with access to actuator from side, not as standard from the top
- 4 Fixing profile with threaded rod → see pages 13 to 14
- 5 Duct

V. SUSPENSION SYSTEMS

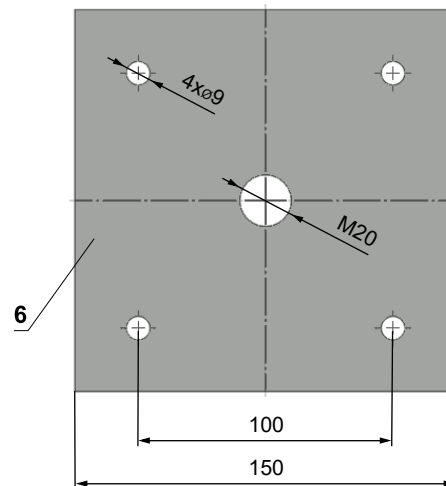
Mounting to the ceiling wall

- The dampers must be suspended using threaded rods and mounting profiles. Their dimensioning depends on the damper's weight.
- The dampers and duct must be suspended separately.
- The connected duct must be suspended in such a way that the transfer of all loads from the adjoining ventilation duct to the damper body is completely excluded. Adjacent duct must be suspended or supported, as required by the duct suppliers.
- Threaded rods longer than 1,5 m must be protected by fire insulation.

Possible examples of anchoring to the ceiling construction
Follow the instructions of fixing specialist or installation company



- If in doubt then always consult a specialist anchor engineer such as Halfen or Hilti.

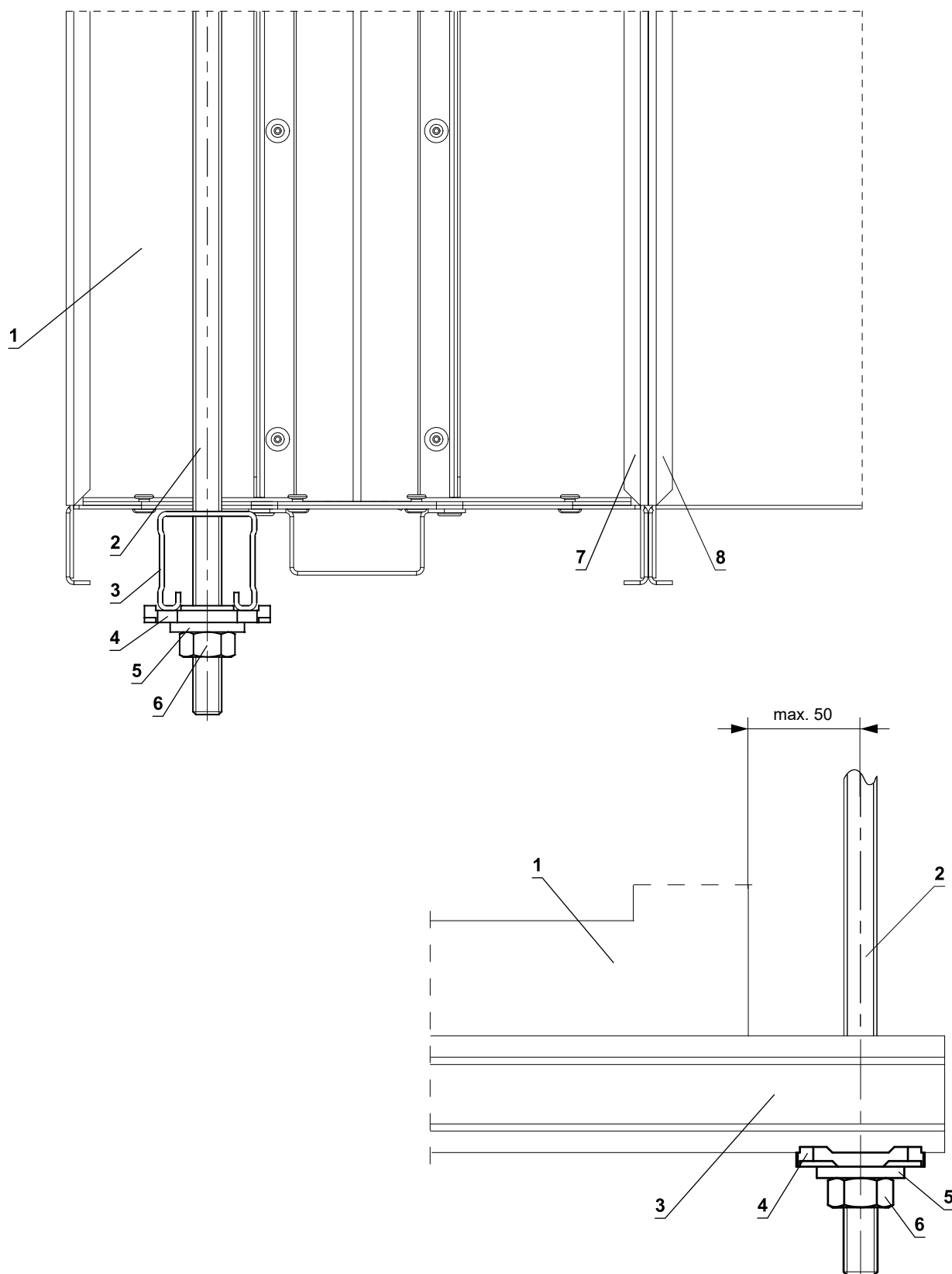


Load capacities of threaded rods at the required fire resistance 60 min. < $t \leq 120$ min.

Size	As [mm ²]	Weight [kg]	
		for 1 rod	for 2 rods
M8	36,6	22	44
M10	58	35	70
M12	84,3	52	104
M16	157	96	192
M18	192	117	234
M20	245	150	300

- 1 Threaded rod M8 - M20
- 2 Nut M8 - M20
- 3 Washer for M8 - M20
- 4 Coupling Nut M8 - M20
- 5 Anchor
- 6 Hinge plate - min. thickness 10 mm
- 7 Concrete screw tested for fire resistance R30-R90, max. Tension up to 0.75 kN (length 35 mm)

Example of placing of mounting profiles HILTI

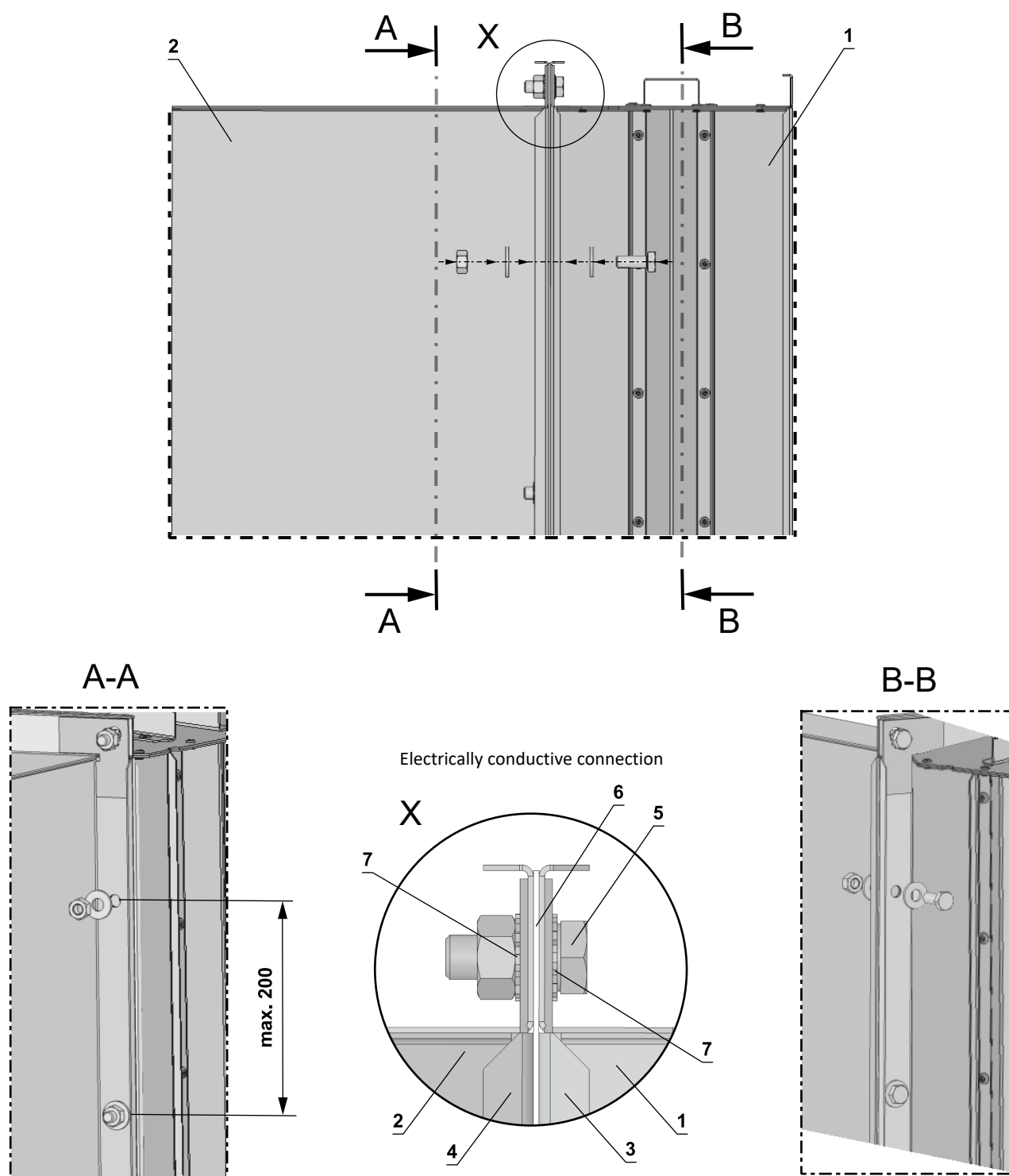


- 1 SEDS-L
- 2 Threaded rod M8 - M12
- 3 Support HILTI MQ-41 or MQ-41/3
- 4 Bored plate HILTI MQZ-L
- 5 Washer for M8 - M12
- 6 Nut M8 - M12
- 7 Flange of SEDS-L
- 8 Flange of duct

Example of duct connection

Flange connection

Connection to smoke extract duct



- 1 SEDS-L
- 2 Connecting air duct
- 3 Flange of SEDS-L
- 4 Flange of duct
- 5 M8 bolt assembly (bolt M8x20 mm, 2 pcs large washer M8, nut M8) *
- 6 Ceramic self-adhesive tape (FJ 120 Pyrosil B 170-250 kg/m³ - Tremco-illbruck) or equivalent
- 7 Lock washers

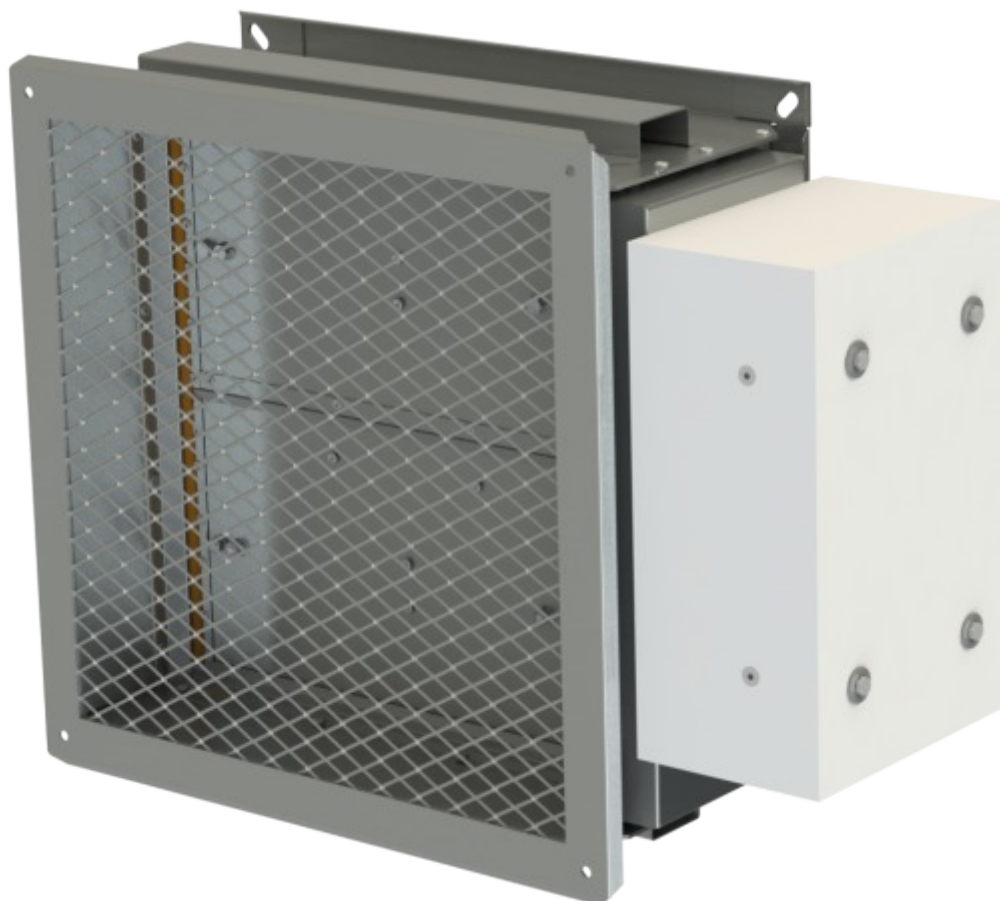
* min. one connection must be electrically conductive

VI. ACCESSORIES

Cover grille KMM

- The grilles type KMM (TPM 002/96) can be used to close smoke control dampers.
- These grilles are available in all sizes of the smoke control dampers.
- Free area value for KMM is 78%.

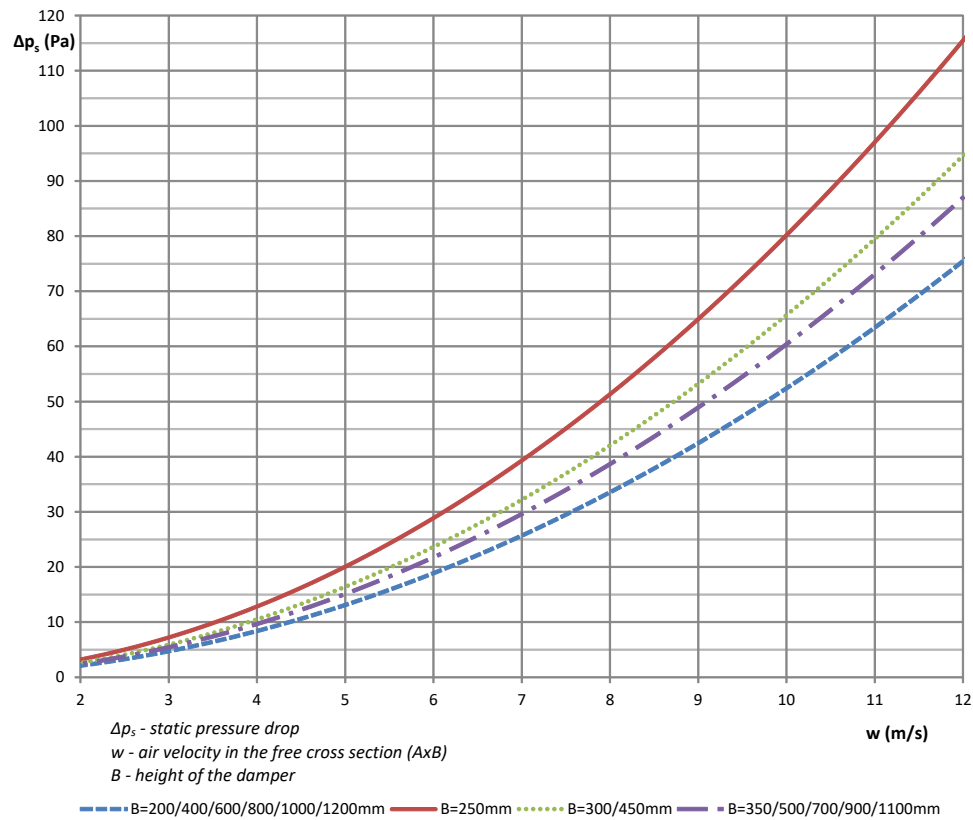
SEDS-L with cover grille



VII. TECHNICAL DATA

Pressure loss

Determination of pressure loss by using diagram $\rho = 1,2 \text{ kg/m}^3$



Noise data - level of acoustic output corrected with filter A

Sound power level L_w in dB(A) for B=250/300/450mm, damper fully open

	f (Hz)	63	125	250	500	1000	2000	4000	8000	Total
w (m/s)	2	16	24	29	29	28	26	23	9	35
	3	25	33	38	38	37	35	32	18	44
	4	32	40	45	45	44	42	39	25	51
	5	38	46	51	51	50	48	45	31	57
	6	42	50	55	55	54	52	49	35	61
	7	46	54	59	59	58	56	53	39	65
	8	49	57	62	62	61	59	56	42	68
	9	50	58	63	63	62	60	57	43	69
	10	53	61	66	66	65	63	60	46	72
	11	55	63	68	68	67	65	62	48	74
	12	57	65	70	70	69	67	64	50	76

w - air velocity in the free cross section (AxB) - i.e. before blades

f - frequency of octave band

Sound power level L_w in dB(A) for B=350/500/700/900/1100mm, damper fully open

	f (Hz)	63	125	250	500	1000	2000	4000	8000	Total
w (m/s)	2	15	23	28	28	27	25	22	8	34
	3	24	32	37	37	36	34	31	17	43
	4	31	39	44	44	43	41	38	24	50
	5	36	44	49	49	48	46	43	29	55
	6	41	49	54	54	53	51	48	34	60
	7	45	53	58	58	57	55	52	38	64
	8	48	56	61	61	60	58	55	41	67
	9	49	57	62	62	61	59	56	42	68
	10	51	59	64	64	63	61	58	44	70
	11	53	61	66	66	65	63	60	46	72
	12	55	63	68	68	67	65	62	48	74

w - air velocity in the free cross section (AxB) - i.e. before blades

f - frequency of octave band

Sound power level L_w in dB(A) for B=200/400/600/800/1000/1200mm, damper fully open

	f (Hz)	63	125	250	500	1000	2000	4000	8000	Total
w (m/s)	2	13	21	26	26	25	23	20	6	32
	3	21	29	34	34	33	31	28	14	40
	4	28	36	41	41	40	38	35	21	47
	5	34	42	47	47	46	44	41	27	53
	6	38	46	51	51	50	48	45	31	57
	7	42	50	55	55	54	52	49	35	61
	8	45	53	58	58	57	55	52	38	64
	9	47	55	60	60	59	57	54	40	66
	10	48	56	61	61	60	58	55	41	67
	11	50	58	63	63	62	60	57	43	69
	12	52	60	65	65	64	62	59	45	71

w - air velocity in the free cross section (AxB) - i.e. before blades

f - frequency of octave band

VIII. MATERIAL, FINISHING

- Damper casing and damper blade are made of galvanized sheet metal without any other surface finish.
- Fasteners are galvanized.
- According to the customer's requirements, damper can be made of stainless material.

Specifications for stainless-steel models – classification of stainless steel:

- Class A2 – Food-grade stainless steel (AISI 304 – BS EN 17240)
- Class A4 – Chemistry-grade stainless steel (AISI 316, 316L – BS EN 17346, 17349)

The respective stainless steel is the material for all components present or accessing the damper interior; components outside the damper body are typically from galvanised sheet metal (fasteners for mounting the actuator).

The following components, including the fasteners, are made from stainless steel at all times:

- Damper body and all components permanently attached
- Blade's holders, including pins, metal parts of blade

Plastic, rubber and silicon components, sealants, foaming bands, glass-ceramic seals, housings, brass bearings of the blade, actuators, and end switches are identical for all material variants of the dampers.

Some fasteners and components are available in one class of stainless steel; the type will be used in all stainless-steel variants.

Any other requirements for the design shall be considered atypical and shall be addressed on an individual basis.

- The actuator cover is made of fire-resistant material (fire protection board).

IX. TRANSPORTATION AND STORAGE

Logistic terms

- Dampers are delivered on a pallets. As standard, the dampers are wrapped in plastic foil for protection during transport and must not be used for long-term storage of the equipment. Changes in temperature during transport may cause condensation of water vapour inside the packaging and thereby conditions may arise inside the packaging that are suitable for corrosion of materials used in the equipment (e.g. white corrosion on zinc-coated items or mould on calcium silicate). Therefore, it is necessary to remove the transport packaging immediately after unloading to allow air to circulate around the product.
- The equipment must be stored in clean, dry, well ventilated and dust-free environment out of direct sunlight. ensuring protection against moisture and extremes of temperatures (minimum temperature +5°C) the equipment must be protected against mechanical and accidental damage prior to installation.
- Another required packaging system should be approved and agreed by manufacturer. Packaging material is not returnable in case that another packaging system (material) is required and used and it is not included into final price of damper.
- For unloading and further manipulation with the damper is necessary to use appropriate tooling (forklifts) due to damper weight. Dampers are fragile.
- Dampers are transported by box freight vehicles without direct weather impact, there must not occur any shocks and ambient temperature must not exceed +50°C. Dampers must be protected against impact when transported and manipulated. During transportation, the damper blade must be in the "CLOSED" position.
- Dampers are stored indoor in environment without any aggressive vapours, gases or dust. Indoor temperature must be in the range from -30°C to +50°C and maximum relative humidity 95% (avoid condensation on the damper body). Dampers must be protected against impact when transported and manipulated.

X. ASSEMBLY, ATTENDANCE AND MAINTENANCE

- Assembly, maintenance and damper function check can be done only by qualified and trained person, i.e. "AUTHORIZED PERSON" according to the manufacturer documentation. All works done on the smoke control dampers must be done according international and local norms and laws.
- All effective safety standards and directives must be observed during damper assembly.
- To ensure reliable smoke control damper function it is necessary to avoid blocking the closing mechanism and contact surfaces with collected dust, fibre and sticky materials and solvents.
- Manual operation
 - Without power supply, the damper can be operated manually and fixed in any required position.

DANGER OF DAMAGE

Always:

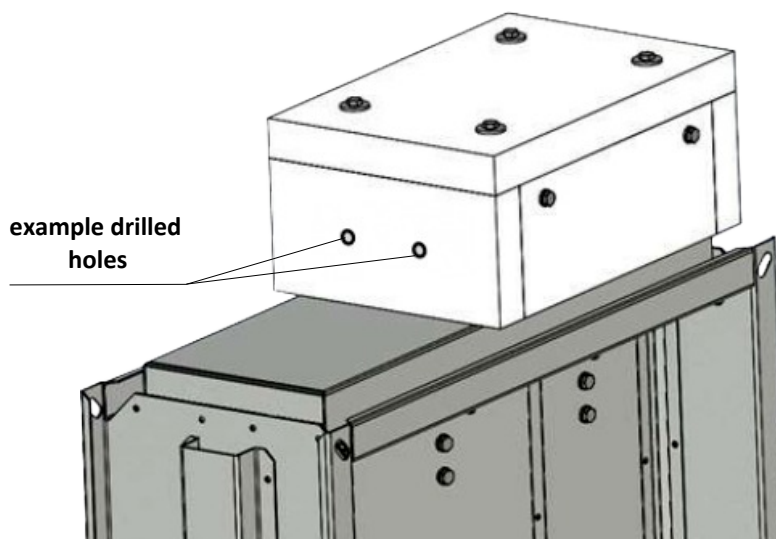
**REMOVE POWER BEFORE USING ALLEN KEY!
NEVER USE A POWER TOOL!**

Both incorrect operations will damage the clutch Mechanism
NO WARRANTY CLAIM!

Electrical connection of the actuator in protection box

Protection box without slot or predrilled holes

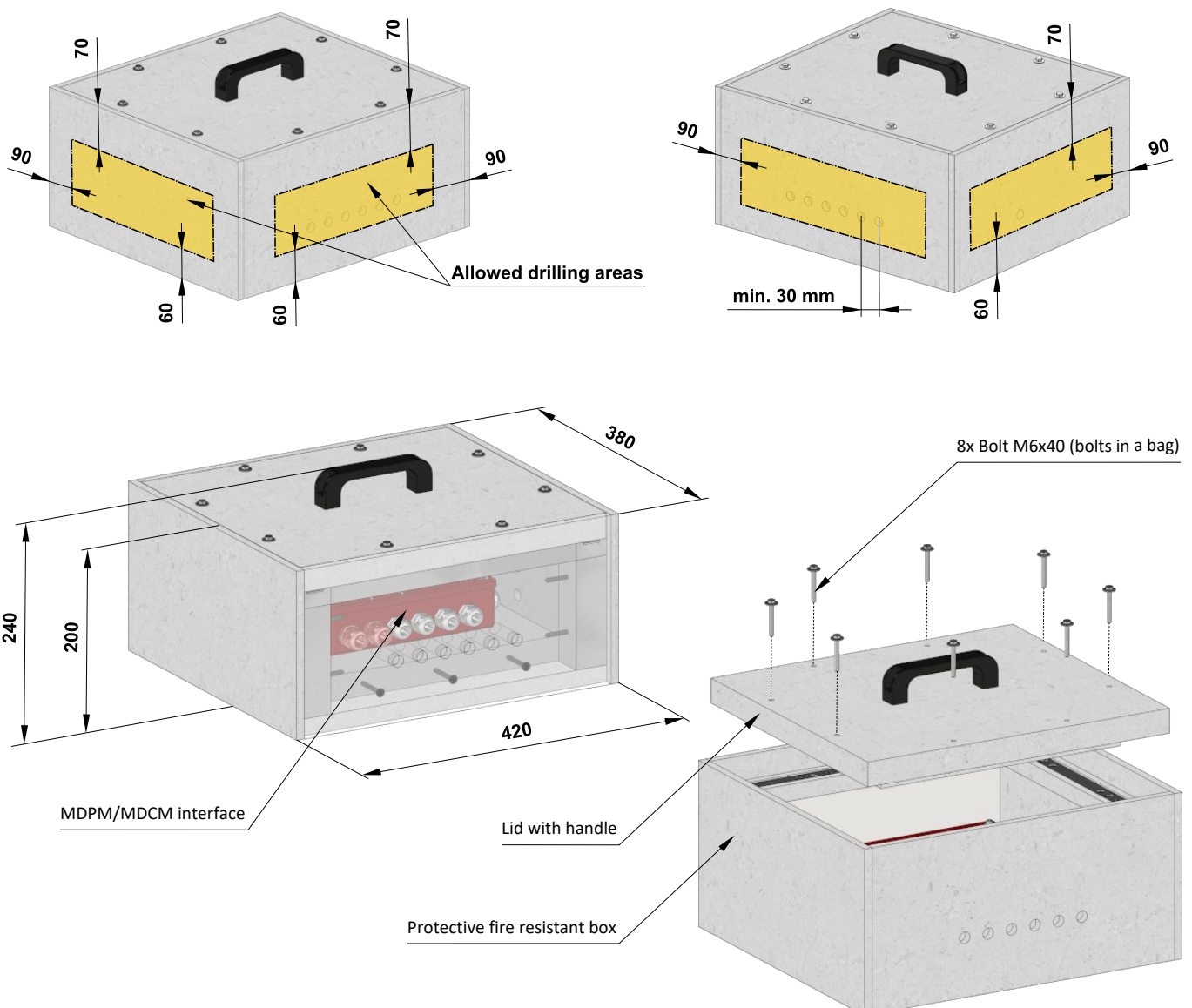
- Drill two holes into the protection box (from outside to inside) and pull through field wiring cables (CAT 3 fire resistant cables as BS 8519) to connect to the actuator trailing lead inside the housing, using a standard screwed cable connector block, the protection box is made of calcium silicate plates.
- Procedure
 - Use drill (drill size acc. To suit connecting cable $\varnothing + 2$ mm for seal up by mastic) and make two holes. It is possible to drill holes in any side of the housing.
 - Pull the heat resistant cable through the calcium silicate plate (wall) and connect with cables from actuator acc. to above mentioned electrical diagram.
 - Seal up the space around cable with fire resistant mastic (HILTI CFS-S ACR, PROMASTOP) or equivalent.
 - Let the mastic harden.



Example of position of holes in the wall of the box, without pre-manufactured slot

Connection of the control module MDPM & MDCM interfaces inside protection box

- Drill holes into the protection box (from outside to inside) and pull through field wiring cable (fire resistant cables) to connect control module. Protection box is made of calcium silicate insulating plates.
- Procedure:
 - Screw red box of MDPM/MDCM interface inside of the FIRE RATED housing to the back side, use pre drilled holes in red box and self-taping screws 4,8x25 mm. Minimum distance from walls 20 mm.
 - Use drill (drill size acc. to suit connecting cable $\varnothing + 2$ mm for seal up by mastic) and make holes (min. pitch of the holes must be 30 mm), number of holes depends on the type of control module. **It is possible to drill holes in any side of the protection box.**
 - Pull the heat resistant cable through the calcium silicate insulating plate (wall) and connect with cables from control module.
 - Seal up the space around cable with fire resistant mastic (HILTI CFS-S ACR, PROMASTOP) or equivalent.
 - Let the mastic harden.
- Placement:
 - The FIRE RATED housing can be installed onto a wall.
 - For installation, drill 4 holes in the rear of the housing (from inside to outside) with a maximum hole diameter of 8,5mm, use fixing appropriate for the application. Seal all holes and gap between FIRE RATED housing and wall with firestop (HILTI CFS-S ACR, PROMASTOP).

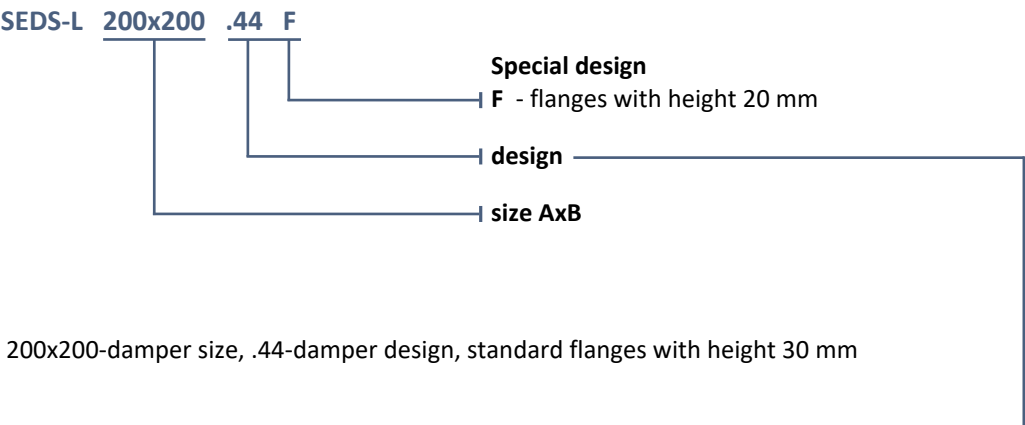


Entry into service and revisions

- Before entering the dampers into operation after assembly and after sequential revisions, checks and functionality tests of all designs including operation of the electrical components must be successfully provided and finished. After entering into operation, these revisions must be done according to requirement set by national regulations.
- In case that dampers are found unable to serve for their function for any cause, it must be clearly marked. The operator is obliged to ensure that the damper is put into condition in which it is ready for function and meanwhile he is obliged to provide the fire protection by another appropriate way.
- Results of regular checks, imperfections found and all-important facts connected with the damper function must be recorded in the "FIRE BOOK" and immediately reported to the operator.
- Before entering the dampers into operation after their assembly and by sequential checks, the following checks must be carried out for all designs.
- Visual inspection of proper damper integration, inside damper area, damper blade, contact surfaces and silicon sealing.
- Check of damper blade displacement can be realized after actuating mechanism supply connection or signal connection from higher level control systems. Blade displacement from position "OPEN" to position "CLOSED" and return displacement is checked.

XI. ORDERING INFORMATION

Ordering key



EXAMPLE:
SEDs-L 200x200 .44 - 200x200-damper size, .44-damper design, standard flanges with height 30 mm

Dampers design	Additional digit
with actuating mechanism BEN, BEE, BE for 230V	.44
with actuating mechanism BEN, BEE, BE for 24V	.54
with actuating mechanism BEN (BEE)-SR for 24V	.65*

* Design .65 is not available by using actuating mechanism BE

Data label

- Data label is placed on the damper casing (example)

MANDÍK®

MANDÍK, a.s.

Dobříšská 550, 267 24 Hostomice, Czech Republic

SINGLE COMPARTMENT SMOKE CONTROL DAMPER - XXXX

DIMENSION:

DESIGN:

SERIAL.NO.:

WEIGHT (kg):

CLASSIFICATION:

TPM XXX/XX

Cert. No.: 2822-UKCA-CPR-XXXX, DoP: PM/XXXX/XX/XX/X

XX

EN 12101:2011

MANUAL

UK
CA
2822

MANDÍK®

MANDÍK, a.s.

Dobříšská 550, 267 24 Hostomice, Czech Republic

SINGLE COMPARTMENT SMOKE CONTROL DAMPER - XXXX

DIMENSION:

DESIGN:

SERIAL.NO.:

WEIGHT (kg):

CLASSIFICATION:

TPM XXX/XX

Cert. No.: 1391-CPR-XXXX/XXXX, DoP: PM/XXXX/XX/XX/X

XX

EN 12101:2011

MANUAL

CE
1391

Version 2025-10-31

Single compartment smoke control damper - SEDs-L

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The producer reserves the right for innovations of the product.
For actual product information see www.mandik.co.uk

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www.mandik.co.uk

Manufacturer

MANDÍK, a. s. • Dobříšská 550 • 267 24 Hostomice • Czech Republic • Tel.: +420 311 706 742 • E-Mail: mandik@mandik.cz

Authorized representative

MANDIK UK Ltd • 130 Aztec West • Bristol BS32 4UB • United Kingdom • Tel.: +44 117 4526376 • E-Mail: help@mandik.co.uk

