



Characteristics

Volume control dampers 100 mm pitch for high temperature.
Flap axis spacing 100 mm.
Counter-clockwise or parallel slats.
The slats are opened and closed manually or via a gear transmission.

Material

Galvanized steel frame.
Galvanized steel blades.
Galvanized steel pins.

Fixing

By bolts on flanges corners.

Models

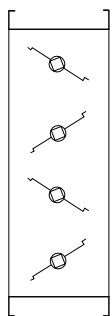
ZR-100 HT/R: opposed blade damper with manual control.
ZR-100 HT/M: opposed blade damper with pin for servo-motor.
ZR-100 HT/PP: parallel blade damper with pin for servo-motor.
ZR-100 HT/PPM: parallel blade damper with manual control.
T10: veneered blades.



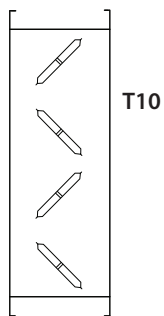
CM 10 - manual control mechanism.

Configuration

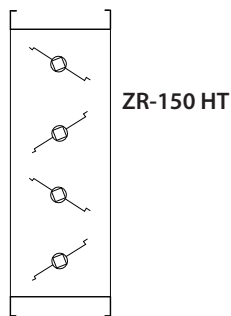
Standard blades



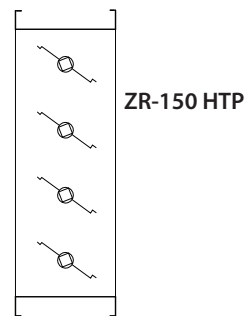
Veneered blades



Opposed blades



Parallel blades



Universal plate (Standard)



Manual control

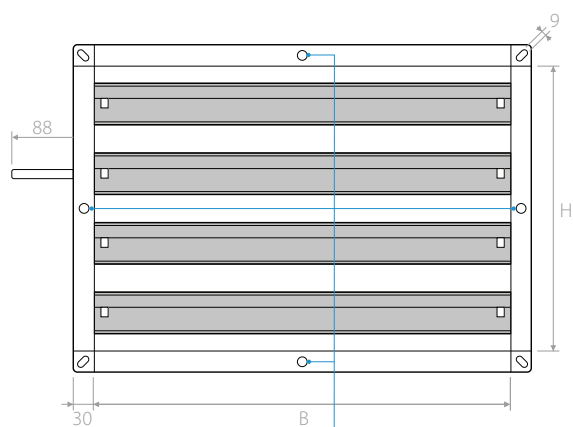


Servomotor



Construction designs

Standard blades



Hole Ø 9 mm, pitch 300 mm



Pitch 100 mm

Identification scheme servomotor size

	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
310	0,06	0,09	0,12	0,16	0,19	0,22	0,25	0,28	0,31	0,34	0,37	0,4	0,43	0,47
460	0,09	0,14	0,18	0,23	0,28	0,32	0,37	0,41	0,46	0,51	0,55	0,6	0,64	0,69
610	0,12	0,18	0,24	0,31	0,37	0,43	0,49	0,55	0,61	0,67	0,73	0,79	0,85	0,92
760	0,15	0,23	0,3	0,38	0,46	0,53	0,61	0,68	0,76	0,84	0,91	0,99	1,06	1,14
910	0,18	0,27	0,36	0,46	0,55	0,64	0,73	0,82	0,91	1	1,09	1,18	1,27	1,37
1060	0,21	0,32	0,42	0,53	0,64	0,74	0,85	0,95	1,06	1,17	1,27	1,38	1,48	1,59
1210	0,24	0,36	0,48	0,61	0,73	0,85	0,97	1,09	1,21	1,33	1,45	1,57	1,69	1,82
1360	0,27	0,41	0,54	0,68	0,82	0,95	1,09	1,22	1,36	1,5	1,63	1,77	1,9	2,04
1510	0,3	0,45	0,6	0,76	0,91	1,06	1,21	1,36	1,51	1,66	1,81	1,96	2,11	2,27
1660	0,33	0,5	0,66	0,83	1	1,16	1,33	1,49	1,66	1,83	1,99	2,16	2,32	2,49
1810	0,36	0,54	0,72	0,91	1,09	1,27	1,45	1,63	1,81	1,99	2,17	2,35	2,53	2,72
1960	0,39	0,59	0,78	0,98	1,18	1,37	1,57	1,76	1,96	2,16	2,35	2,55	2,74	2,94
2110	0,42	0,63	0,84	1,06	1,27	1,48	1,69	1,9	2,11	2,32	2,53	2,74	2,95	3,17
2260	0,45	0,68	0,9	1,13	1,36	1,58	1,81	2,03	2,26	2,49	2,71	2,94	3,16	3,39
2410	0,48	0,72	0,96	1,21	1,45	1,69	1,93	2,17	2,41	2,65	2,89	3,13	3,37	3,62
2560	0,51	0,77	1,02	1,28	1,54	1,79	2,05	2,3	2,56	2,82	3,07	3,33	3,58	3,84
2710	0,54	0,81	1,08	1,36	1,63	1,9	2,17	2,44	2,71	2,98	3,25	3,52	3,79	4,07
2860	0,57	0,86	1,14	1,43	1,72	2	2,29	2,57	2,86	3,15	3,43	3,72	4	4,29
3010	0,6	0,9	1,2	1,51	1,81	2,11	2,41	2,71	3,01	3,31	3,61	3,91	4,21	4,52

	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000
310	0,5	0,53	0,56	0,59	0,62	0,65	0,68	0,71	0,74	0,78	0,81	0,84	0,87	0,9	0,93
460	0,74	0,78	0,83	0,87	0,92	0,97	1,01	1,06	1,1	1,15	1,2	1,24	1,29	1,33	1,38
610	0,98	1,04	1,1	1,16	1,22	1,28	1,34	1,4	1,46	1,53	1,59	1,65	1,71	1,77	1,83
760	1,22	1,29	1,37	1,44	1,52	1,6	1,67	1,75	1,82	1,9	1,98	2,05	2,13	2,2	2,28
910	1,46	1,55	1,64	1,73	1,82	1,91	2	2,09	2,18	2,28	2,37	2,46	2,55	2,64	2,73
1060	1,7	1,8	1,91	2,01	2,12	2,23	2,33	2,44	2,54	2,65	2,76	2,86	2,97	3,07	3,18
1210	1,94	2,06	2,18	2,3	2,42	2,54	2,66	2,78	2,9	3,03	3,15	3,27	3,39	3,51	3,63
1360	2,18	2,31	2,45	2,58	2,72	2,86	2,99	3,13	3,26	3,4	3,54	3,67	3,81	3,94	4,08
1510	2,42	2,57	2,72	2,87	3,02										
1660	2,66	2,82	2,99	3,15	3,32										
1810	2,9	3,08	3,26	3,44	3,62										
1960	3,14	3,33	3,53	3,72	3,92										

Calculated area in square meters [m²]

Damper area < 0,4 m²

Damper area < 1 m²

Damper area < 2 m²

Damper area > 2 < 4 m²

Damper area > 4 < 8 m²

Servo-motors

Without spring return

CODE	VOLTAGE	COMMAND	€
CM24L	24 V	On-Off/3-p	
CM230L	230 V	On-Off/3-p	
CM24SRL	24 V	proportional	



CM
for dampers up to 0,4 m²
2 Nm

CODE	VOLTAGE	COMMAND	€
LM24A	24 V	On-Off / 3-p.	
LM24AS	24 V	On-Off / 3-p.	
LM24ASR	24 V	proportional	
LM230A	230 V	On-Off	
LM230AS	230 V	On-Off	
LM230ASR	230 V	proportional	



LM
for dampers up to 1 m²
5 Nm

CODE	VOLTAGE	COMMAND	€
NM24A	24 V	On-Off / 3-p.	
NM24ASR	24 V	proportional	
NM230A	230 V	On-Off	



NM
for dampers up to 2 m²
10 Nm

CODE	VOLTAGE	COMMAND	€
SM24A	24 V	On-Off / 3-p.	
SM24ASR	24 V	proportional	
SM230A	230 V	On-Off / 3-p.	
SM230ASR	230 V	proportional	



SM
for dampers up to 4 m²
20 Nm

CODE	VOLTAGE	COMMAND	€
GM24A	24 V	On-Off / 3-p.	
GM24ASR	24 V	proportional	
GM230A	230 V	On-Off / 3-p.	



GM
for dampers up to 8 m²
40 Nm

CODE	No. of contacts	SWITCHING POWER	APPLICATION ON	€
S1A	1 x SPDT	1 mA ... 3 (0,5) A 250 V c.a.	LM - NM - SM - GM / 24-230 V	
S2A	2 x SPDT			



S1A



S2A

CODE	VOLTAGE	SIMULTANEOUS REGULATION	APPLICATION ON	€
SGA24	AC/DC 24 V	maks. 10 motorjev	LM - NM - SM - GM / 24-230 V	
SGF24				



SGA24



SGF24

With spring return

CODE	VOLTAGE	COMMAND	€
TF24	24 V	On-Off	
TF24S	24 V	On-Off	
TF230	230 V	On-Off	
TF230S	230 V	On-Off	
TF24SR	24 V	proportional	



TF
for dampers up to 0,4 m²
2 Nm

CODE	VOLTAGE	COMMAND	€
LF24	24 V	On-Off	
LF24S	24 V	On-Off	
LF230	230 V	On-Off	
LF230S	230 V	On-Off	
LF24SR	24 V	proportional	



TF
for dampers up to 0,8 m²
4 Nm

CODE	VOLTAGE	COMMAND	€
NFA	230 VAC	On-Off	
NFAS2	230 VAC	On-Off	
NFA	24 VAC/DC	On-Off	
NFAS2	24 VAC/DC	On-Off	
NF24ASR	24 VAC/DC	proportional	
NF24ASRS2	24 VAC/DC	proportional	



NF
for dampers up to 2 m²
10 Nm

CODE	VOLTAGE	COMMAND	€
SFA	230 VAC	On-Off	
SFAS2	230 VAC	On-Off	
SFA	24 VAC/DC	On-Off	
SFAS2	24 VAC/DC	On-Off	
SF24ASR	24 VAC/DC	proportional	
SF24ASRS2	24 VAC/DC	proportional	



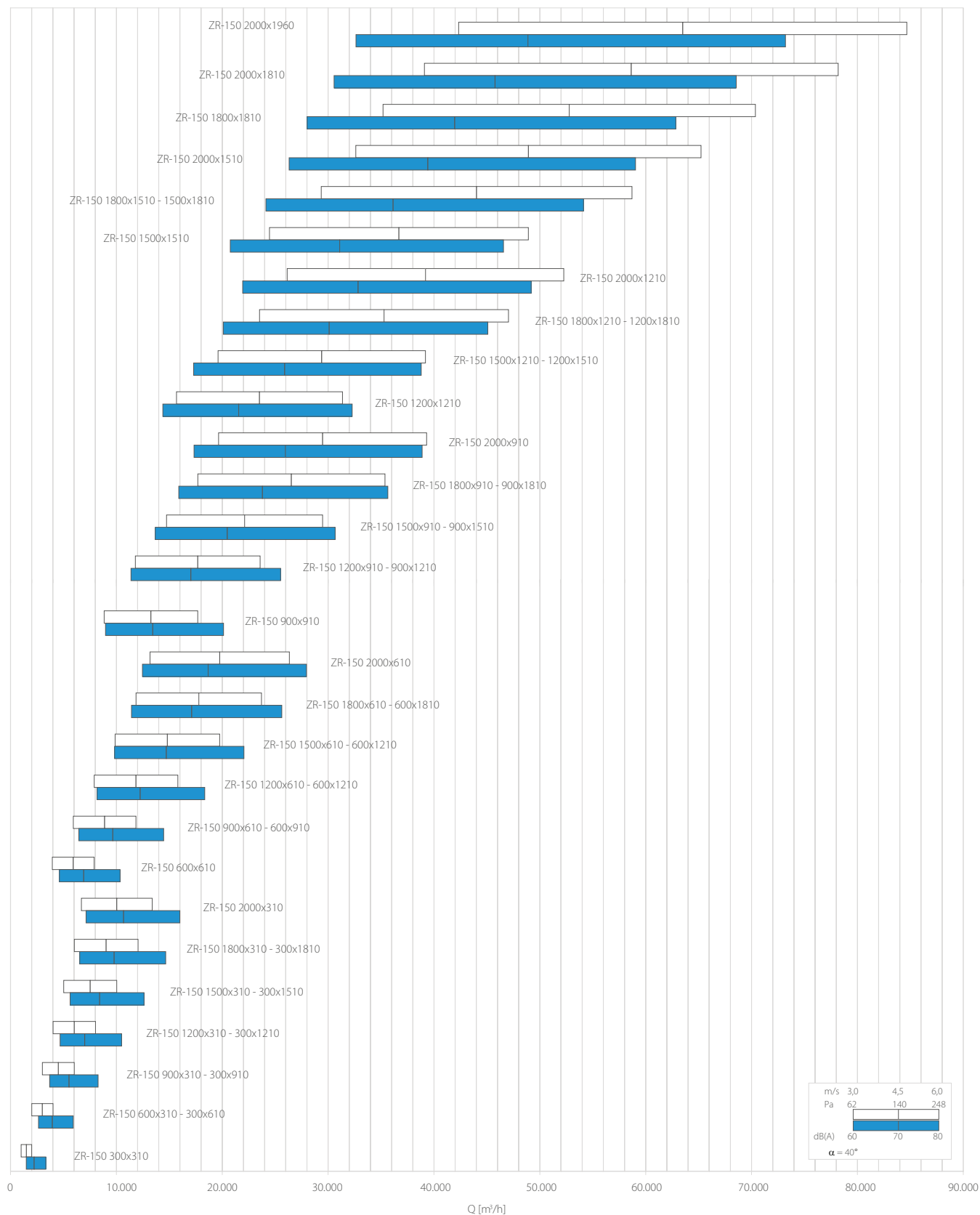
SF
for dampers up to 4 m²
20 Nm

CODE	VOLTAGE	COMMAND	€
EF230A	230 VAC	On-Off	
EF230AS2	230 VAC	On-Off	
EF24A	24 VAC/DC	On-Off	
EF24AS2	24 VAC/DC	On-Off	
EF24ASR	24 VAC/DC	proportional	
EF24ASRS2	24 VAC/DC	proportional	



EF
for dampers up to 6 m²
30 Nm

Quick selection diagram



Selection table

Model	A ₁ [m²]	v [m/s]		Q [m³/h]		Dp (α=40°) [Pa]		L _{WA} (α=40°) [dB(A)]	
		min	max	min	max	min	max	min	max
ZR-150 300x310	0,0930	3	6	1000	2010	62	248	50	67
ZR-150 600x310 - 300x610	0,1860	3	6	2010	4020	62	248	53	70
ZR-150 900x310 - 300x910	0,2790	3	6	3010	6030	62	248	55	72
ZR-150 1200x310 - 300x1210	0,3720	3	6	4020	8040	62	248	56	73
ZR-150 1500x310 - 300x1510	0,4650	3	6	5020	10040	62	248	57	74
ZR-150 1800x310 - 300x1810	0,5580	3	6	6030	12050	62	248	58	75
ZR-150 2000x310	0,6200	3	6	6700	13390	62	248	58	76
ZR-150 600x610	0,3660	3	6	3950	7910	62	248	56	73
ZR-150 900x610 - 600x910	0,5490	3	6	5930	11860	62	248	58	75
ZR-150 1200x610 - 600x1210	0,7320	3	6	7910	15810	62	248	59	76
ZR-150 1500x610 - 600x1210	0,9150	3	6	9880	19760	62	248	60	77
ZR-150 1800x610 - 600x1810	1,0980	3	6	11860	23720	62	248	61	78
ZR-150 2000x610	1,2200	3	6	13180	26350	62	248	61	79
ZR-150 900x910	0,8190	3	6	8850	17690	62	248	60	77
ZR-150 1200x910 - 900x1210	1,0920	3	6	11790	23590	62	248	61	78
ZR-150 1500x910 - 900x1510	1,3650	3	6	14740	29480	62	248	62	79
ZR-150 1800x910 - 900x1810	1,6380	3	6	17690	35380	62	248	63	80
ZR-150 2000x910	1,8200	3	6	19660	39310	62	248	63	80
ZR-150 1200x1210	1,4520	3	6	15680	31360	62	248	62	79
ZR-150 1500x1210 - 1200x1510	1,8150	3	6	19600	39200	62	248	63	80
ZR-150 1800x1210 - 1200x1810	2,1780	3	6	23520	47040	62	248	64	81
ZR-150 2000x1210	2,4200	3	6	26140	52270	62	248	64	82
ZR-150 1500x1510	2,2650	3	6	24460	48920	62	248	64	81
ZR-150 1800x1510 - 1500x1810	2,7180	3	6	29350	58710	62	248	65	82
ZR-150 2000x1510	3,0200	3	6	32620	65230	62	248	65	82
ZR-150 1800x1810	3,2580	3	6	35190	70370	62	248	66	83
ZR-150 2000x1810	3,6200	3	6	39100	78190	62	248	66	83
ZR-150 2000x1960	3,9200	3	6	42340	84670	62	248	66	84