

# Type overview

# 4 pole models

08/2005

Power: continous duty power with efficient water cooling. The peak power is considerably higher.

Rotor: material of squirrel cage: normal aluminium. Special designs are available for higher speeds.



synchr. speed frequency	10 <sup>3</sup> /min Hz	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45
type		power in kW														
D1/L <sub>Fe</sub> [cm]																
mW 6/2-4-45c/..		0.08	0.14	0.23	0.28	0.34	0.4	0.46	0.53	0.6	0.67	0.74	0.8	0.85	0.9	
mW 6/3-4-45c/..		0.15	0.25	0.4	0.5	0.6	0.7	0.8	0.9	1	1.2	1.3	1.4	1.5	1.6	
mW 6/4.5-4-45c/..		0.25	0.4	0.65	0.8	0.95	1.1	1.25	1.4	1.6	1.8	2	2.2	2.35	2.5	
mW 6/6-4-45c/..		0.37	0.6	0.9	1.1	1.4	1.6	1.8	2.1	2.3	2.6	2.9	3.1	3.3	3.6	
mW 6/8-4-45c/..		0.5	0.8	1.2	1.5	1.9	2.2	2.5	2.9	3.2	3.6	4	4.3	4.6	5	
mW 6/3-4-170d/..		0.16	0.3	0.5	0.65	0.8	1	1.2	1.3	1.4	1.6	1.8	1.9	2.1	2.2	
mW 6/4.5-4-170d/..		0.3	0.6	0.9	1.1	1.4	1.6	1.9	2.1	2.3	2.5	2.7	2.9	3.1	3.3	
mW 6/5.5-4-170d/..	0.1	0.37	0.7	1.1	1.45	1.8	2.1	2.4	2.7	3	3.3	3.5	3.8	4	4.3	
mW 6/6-4-170d/..	0.11	0.42	0.8	1.2	1.6	1.9	2.4	2.7	3.1	3.3	3.6	3.9	4.2	4.5	4.8	
mW 6.5/8-4-165a/..		0.4	0.95	1.5	2	2.5	3	3.5	4	4.4	4.8	5.1	5.5	5.5	5.2	5
mW 7/4-4-33a/..		0.2	0.44	0.7	0.9	1.2	1.5	1.8	2.1	2.4	2.6	2.8	3	3	3	2.8
mW 7/5-4-33a/..		0.27	0.6	1	1.3	1.7	2.1	2.5	2.8	3.2	3.5	3.8	4	4	4	3.7
mW 7/6-4-33a/..		0.36	0.75	1.2	1.6	2.1	2.6	3.1	3.5	3.9	4.3	4.6	5	5	5	4.6
mW 7/7-4-33a/..		0.45	0.9	1.4	1.9	2.5	3.1	3.7	4.1	4.5	5	5.4	6	6	6	5.5
mW 7/10-4-33a/..		0.65	1.4	2.2	3	3.7	4.5	5.3	6	6.6	7.2	7.8	8.5	8.5	8.5	7.8
mW 8/4-4-85a/..		0.31	0.9	1.3	1.8	2.2	2.5	2.7	3	3.7	3.7	3.7	3.7	3.7	3.4	
mW 8/6-4-85a/..		0.57	1.4	2.1	2.8	3.5	4.2	4.9	5.4	5.7	6	6	6	6	5.7	
mW 8/9-4-85a/..		0.9	2.3	3.4	4.5	5.5	6.5	7.3	7.9	8.4	9	9	9	9	8.3	
mW 8/11-4-85a/..		1.1	2.8	4.2	5.5	6.7	7.9	8.9	9.7	10.3	11	11	11	10		
mW 8/20-4-85a/..		2	5.1	7.6	10	12.2	14.3	16	17.5	18.8	20	20	20	18.5		
mW 8.3/2-4-34a/..		0.13	0.35	0.6	0.75	0.9	1.0	1.1	1.2	1.35	1.5	1.5	1.5	1.4		
mW 8.3/3-4-34a/..		0.2	0.6	0.9	1.2	1.5	1.7	1.85	2	2.2	2.5	2.5	2.5	2.3		
mW 8.3/4-4-34a/..		0.31	0.9	1.3	1.8	2.2	2.5	2.7	3	3.3	3.7	3.7	3.7	3.4		
mW 8.3/5-4-34a/..		0.45	1.1	1.7	2.3	2.8	3.4	3.7	4	4.5	5	5	5	4.5		
mW 8.3/6-4-34a/..		0.57	1.4	2.1	2.8	3.5	4.2	4.9	5.4	5.7	6	6	6	5.7		
mW 8.3/7-4-34a/..		0.7	1.7	2.6	3.4	4.2	4.9	5.5	6	6.5	7	7	7	6.5		
mW 8.3/9-4-34a/..		0.9	2.3	3.4	4.5	5.5	6.5	7.1	7.7	8.4	9	9	9	8.3		
mW 8.5/6-4-61b/..		0.5	1.2	2	2.8	3.5	4.2	4.9	5.6	6.3	7	7	6.5	6	5.5	
mW 8.5/8-4-61b/..		0.8	1.8	3	4	5	6	7	8	9	10	10	9	8.5	8	
mW 8.5/11-4-61b/..		1.2	2.5	4	5.5	7	8.5	10	11.5	13	14	14	13	12	11	
mW 8.5/12-4-61b/..		1.3	2.7	4.4	6	7.6	9.3	11	12.5	14	15	15	14	13	12	
mW 9/6-4-32a/..		0.74	1.5	2.4	3.3	4.3	5	6	6.5	7.5	7.5	7.5	6.5			
mW 9/8-4-32a/..		1.1	2.3	3.6	5	6.5	8	9	9.7	10	10	10	9			
mW 9/10-4-32a/..		1.4	2.9	4.5	6.3	8	10	11	12	12.5	12.5	12.5	11.4			
mW 10.6/4-4-28a/..		0.6	1.6	2.2	3	3.8	4.6	5.3	6	5.3	4.8	4.3				
mW 10.6/6-4-28a/..		1.1	2.7	3.8	5	6.3	7.6	8.8	10	8.8	7.9	7.2				
mW 10.6/8-4-28a/..		1.6	3.8	5.4	7	8.7	10.6	12	13.5	12	10.8	9.5				
mW 10.6/10-4-28a/..		2.2	4.8	7	9.5	12	14	16	18	16	14	13				
mW 10.6/11-4-28a/..		2.7	5.3	8	10.5	13	15.5	17.5	20	17.5	16	15				
mW 10.6/12-4-28a/..		3	6	9	11.8	14.5	17	19.5	22	19.5	17.5	16.5				
mW 10.6/15-4-28a/..		3.8	7.5	11.2	14.4	17.6	20.8	24	27.5	24	19.5	18.5				
voltage ~ voltage									constant voltage range							

Motorelemente  
Motorlieferungen  
Entwicklungen  
Dienstleistungen

Type overview 4 pole models continuation 08/2005

Motorelemente  
Motorlieferungen  
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Dienstleistungen

synchr. speed 10 <sup>3</sup> /min frequency Hz type D1/L <sub>Fe</sub> [cm]	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45
	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
	power in kW														
mW 11.4/5-4-69a/..	1.2	2.8	4.2	5.6	7	8.3	9.6	11	9.7	8.6					
mW 11.4/7-4-69a/..	1.9	4	6.2	8.2	10	12	13.7	15.5	13.8	12.5					
mW 11.4/9-4-69a/..	2.5	5.2	8	10.5	13	15.5	17.5	20	17.8	16					
mW 11.4/12-4-69a/..	3.5	7.2	11	14.5	18	21	24	26.5	23.5	21					
mW 11.4/15-4-69a/..	4.4	9	14	18	22	26	30	33	29	26					
mW 12/6-4-25a/..	2	4	6	8	9	10	8.5	7.5	6.5	6					
mW 12/9-4-25a/..	3	6.5	9.5	13	14	15.5	13	11.5	10.5	9.5					
mW 12/12-4-25a/..	4.5	9.5	13.5	18	20	22	19	17	15.5	14					
mW 13/5-4-155e/..	1.5	3	4.5	6	8	9.5	11.5	13	15	17					
mW 13/9-4-155e/..	3.5	7	11	15	18.5	22.5	26	29	32	36					
mW 13/10-4-155e/..	4	8.5	12.5	17	21.5	25.5	30	33	37	40					
mW 13/12.5-4-155e/..	5	10.5	16	21	26	32	37	42	46	50					
mW 13/15.5-4-155e/..	6.2	13	19.5	26	33	40	45	50	57	63					
mW 13/17.5-4-155e/..	7	14.5	22	29	37	45	52	58	65	72					
mW 13.5/5-4-119e/..	2	4	6	8	10	13	15	17	20	22					
mW 13.5/9-4-119e/..	4.5	9	14	19	24	29	34	39	44	48					
mW 13.5/10-4-119e/..	5	11	16	22	27	32	38	43	49	54					
mW 13.5/11-4-119e/..	5.5	12	18	24	30	36	42	48	54	60					
mW 13.5/12.5-4-119e/..	6.5	14	20	27	34	40	47	54	61	67					
mW 13.5/15.5-4-119e/..	8	17	25	33	42	50	58	67	75	83					
mW 13.5/17.5-4-119e/..	9	19	28	37	47	56	66	76	85	94					
mW 14/10-4-70b/..	6.3	13.5	19.5	25	30	26	22.5								
mW 14/13-4-70b/..	8.5	18	26	33	40	35	30								
mW 15/5-4-48a/..	3.5	7	10	12	10.5										
mW 15/7-4-48a/..	5.5	10.5	14	18	15										
mW 15/9-4-48a/..	7	14	29	24	21										
mW 15/10-4-48a/..	8	16	22	27	24										
mW 15/12-4-48a/..	10	20	27	34	29										
mW 15/15-4-48a/..	12	24	33	42	36										
mW 15/22-4-48a/..	18	36	49	62	53										
mW 17/5-4-139a/..	4.5	9	14	18	21	18									
mW 17/7-4-139a/..	7	14	21	27	31	27									
mW 17/10-4-139a/..	11	22	33	42	48	42									
mW 17/15-4-139a/..	17	34	50	62	72	62									
mW 17/18-4-139a/..	21	42	62	76	86	76									
mW 17/20-4-139a/..	24	48	68	85	95	85									
mW 17/25-4-139a/..	30	60	85	105	120	105									
mW 17/30-4-139a/..	36	72	100	120	140	120									
mW 20/7-4-157a/..	11	22	33	44	42										
mW 20/11-4-157a/..	18	36	54	72	72										
mW 20/13-4-157a/..	21	42	64	86	86										
mW 20/16-4-157a/..	27	54	81	108	108										
mW 20/18-4-157a/..	30	60	90	120	120										
mW 20/21-4-157a/..	35	70	105	140	140										
mW 20/26-4-157a/..	45	90	135	175	175										
mW 20/30-4-157a/..	52	105	155												
mW 20/36-4-157a/..	60	120	80												
mW 24/12-4-143a/..	28	54	78												
mW 24/15-4-143a/..	36	72	105												
mW 24/25-4-143a/..	64	125	180												
	voltage ~ frequency							constant voltage range							

Type overview 4 pole models continuation 08/2005

main dimensions in mm	Stator				Rotor				
	diameter		winding-length		bore		ring-length		
type	D1	D2	W1 (with PTC)	W2	d3 min. Al / Cu	d3 max. Al / Cu	Al	h Cu	Cu-St
mW 6/...-4-45c/..	60.2	32	18	16	10.5 / -	17.1/ -	7	-	-
mW 6/...-4-170d/..	60.2	35	18	16	18 / 16	22 / 19.5	6.5	4	-
mW 6.5/...-4-165a/..	65	40	18	16	19.5 / -	21 / -	5.5	-	-
mW 7/...-4-33a/..	70	40	19	17	19	20 / 24	8	4	12
mW 8/...-4-85a/..	80	50	24	20	23	- / 34	-	4	12
mW 8.3/...-4-34a/..	83	50	23	19	23	25 / 34	8.5	4	12
mW 8.5/...-4-61b/..	85.4	55	23	21	25	33 / 39	10	4	12
mW 9/...-4-32a/..	90	55	26	22	23	33 / 37	10	4	12
mW 10.6/...-4-28a/..	106.5	65	32	26	32.5	36 / 5	8	4	12
mW 11.4/...-4-69a/..	114	70	31	25	- / 42.5	- / 46	-	6	14
mW 12/...-4-25a/..	120	70	35	32	25.5 / 42.5	35 / 46	15	6	14
mW 13/...-4-155e/..	130	85	38	30	40	56 / 58	18.5	6	14
mW 13.5/...-4-119e/..	135	85	38	30	40	52 / 56	18.5	6	14
mW 14/...-4-70b/..	140	85	34	30	- / 46.5	- / 54	-	6	14
mW 15/...-4-48a/..	150	90	38	34	38 / 39	42 / 56	15	8	16
mW 17/...-4-139a/..	170	110	43	34	59 / 66.5	64 / 75	18	8	16
mW 20/...-4-157a/..	200	130	48	37	63.5 / 79.5	70 / 88	17	10	18
mW 24/...-4-143a/..	240	160	60	50	72 / 99.5	80 / 110	20	12	20

options	dimensions
E+A – rating plate customer - rating plate	
Temperature sensor: - PTC thermistor 130° C - thermoswitch 130° C - NTC thermistor - KTY 84-130 - PT 100	
earth cable: yellow/green	<p>normal: 3 ends 400 mm length</p> <p>U brown V blue W black</p>

on request: - other stator diameter  
- other iron length

complete drawing - see model sheet

Power: continuous duty power with efficient water cooling. The peak power is considerably higher.

Rotor: material of squirrel cage: copper. For high speed a special design (Cu-St) is required.

synchr.speed frequency	10 <sup>3</sup> /min Hz	6	12	18	24	30	36	42	48	54	60	66	72	78
		200	400	600	800	1000	1200	1400	1600	1800	2000	2200	2400	2600
type		power in kw												
D1/L <sub>Fe</sub> [cm]														
mW 7/5-4-142d/..		0.9	2	3.2	4.3	5.3	6.4	6.4	6.4	6.4	6.4	5.7	5.3	5
mW 7/7-4-142d/..		1.3	2.9	4.5	6	7.5	9	9	9	9	9	8	7.5	7
mW 7/10-4-142d/..		2	4	6	8	10	12	12	12	12	12	11	10	9
mW 9/4-4-248d/..		1.2	2.6	4	5.4	6.8	8.1	9.3	9.3	9.3	9.3			
mW 9/6-4-248d/..		2	4.2	6.4	8.6	11	13	15	15	15	15			
mW 9/8-4-248d/..		2.8	5.8	8.5	11.5	15	18	21	21					
mW 9/10-4-248d/..		3.5	7.5	11	15	19	23							
mW 9/14-4-248d/..		4.9	10	15	20	25								
mW 10.6/4-4-239d/..		1.9	4	6.2	8.3	10.4	12.5	12.5						
mW 10.6/6-4-239d/..		3.2	6.5	10	13.3	16.6	20	20						
mW 10.6/8-4-239d/..		4.6	9.5	14.5	19.5	24	29	29						
mW 10.6/10-4-239d/..		6	12.7	19.2	25.5	32	38	38						
mW 10.6/11-4-239d/..		6.8	14	21	28	35	42	42						
mW 10.6/12-4-239d/..		7	15.2	23	30.5	38	46	46						
mW 10.6/15-4-239d/..		8.5	19	28	38	48	57	57						
mW 12/6-4-148d/..		4.2	9	13	17	22	26	26						
mW 12/9-4-148d/..		7.5	15.5	23	30	38	45	45						
mW 12/12-4-148d/..		10	20	30	40	50	60	60						
mW 12/15-4-148d/..		12.5	25	38	50	63	75	75						

synchr.speed frequency	10 <sup>3</sup> /min Hz	3	6	9	12	15	18	21	24	27	30	33	36	39
		100	200	300	400	500	600	700	800	900	1000	1100	1200	1300
type		power in kw												
D1/L <sub>Fe</sub> [cm]														
mW 13/5-4-155e/..		1.8	3.6	5.5	7.5	9	11	13	14.5	16	18	20	22	
mW 13/9-4-155e/..		4	8	12	16.5	20.5	24	28	32	36	40	44	48	
mW 13/10-4-155e/..		4.5	9	13.5	18	22	27	32	36	40	45	50	55	
mW 13/12.5-4-155e/..		5.5	11	17	23	29	34	40	45	51	56	61	66	
mW 13/15.5-4-155e/..		6.5	14	21	28	36	42	50	56	63	70	77	84	
mW 13/17.5-4-155e/..		7.5	16	24	32	40	48	56	64	72	80	88	96	
mW 13/25-4-155e/..		11	22	35	47	57	68	80	90	100	110			
mW 13.5/5-4-119e/..		2.2	4.5	7	9.5	12	14.5	17	19.5	22	24			
mW 13.5/7-4-119e/..		3.5	7.5	11	15	19	23	26.5	30	33.5	37			
mW 13.5/9-4-119e/..		4.9	10	15.5	21	26	32	37	42	47	52			
mW 13.5/10-4-119e/..		5.4	11	17.5	23.5	29	35.5	41	47	52	58			
mW 13.5/11-4-119e/..		6	12.5	19	26	32	39	45	52	58	64			
mW 13.5/12.5-4-119e/..		7	14.5	22	30	37	44	52	60	67	74			
mW 13.5/15.5-4-119e/..		8.5	18	27	36	45	55	65	74	82	90			
mW 13.5/17.5-4-119e/..		10	20.5	31	42	52	63	73	82	91	100			
mW 13.5/20-4-119e/..		11	23	35	46	58	70	82	93	103				
mW 13.5/25-4-119e/..		13.5	28	43	58	72	86	100	112					

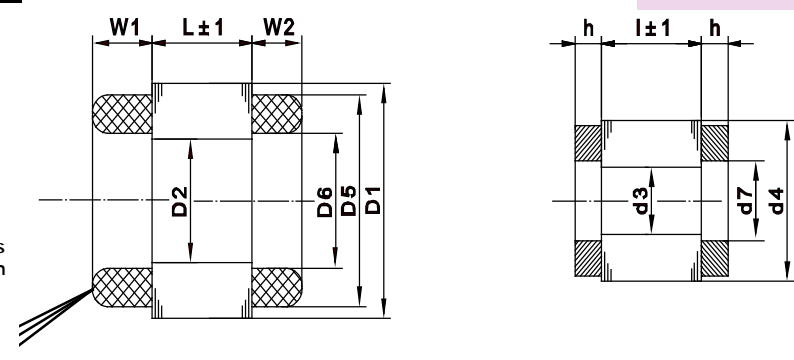
Type overview *ELAN*

4 pole models

continuation 08/2005

synchr. speed 10 <sup>3</sup> /min frequency Hz	3	6	9	12	15	18	21	24	27	30	33	36
	100	200	300	400	500	600	700	800	900	1000	1100	1200
type D1/L <sub>Fe</sub> [cm]	power in kW											
mW 15/10-4-178d/..	7.5	15	22.5	30	38	45	52	58	64	70	70	70
mW 15/12-4-178d/..	9.5	19	28	37	46	55	63	71	79	86	86	86
mW 15/15-4-178d/..	11.5	22.5	34	45	57	68	78	88	98	105	105	105
mW 15/22-4-178d/..	17	34	51	67	84	100	115	130				
mW 17/10-4-139d/..	11	22	33	42	50	58	64	70	77	85		
mW 17/15-4-139d/..	17	34	52	66	80	92	102	110	122	135		
mW 17/18-4-139d/..	21	42	62	80	98	110	125	135	150	165		
mW 17/20-4-139d/..	24	48	70	90	110	125	140	155	168	185		
mW 17/25-4-139d/..	30	60	87	112	135	155	175	190	210	230		
mW 20/7-4-56c/..	11	22	33	44	55	62	54	47				
mW 20/11-4-56c/..	18	36	54	72	90	100	88	76				
mW 20/16-4-56c/..	27	54	81	108	135	150	130	110				
mW 20/18-4-56c/..	30	60	90	120	150	170	145	120				

main dimensions in mm	Stator				Rotor				
	diameter		winding-length		bore		ring-length		
	D1	D2	W1 (with PTC)	W2	d3 min. Cu	d3 max. Cu	h		
Typ	D1	D2	W1 (with PTC)	W2	d3 min. Cu	d3 max. Cu	Cu	Cu-St	
D1/L <sub>Fe</sub> [cm]									
mW 7/...-4-142d/..	70.2	40	19	17	18.5	24	4	12	
mW 9/...-4-248d/..	90	55	26	22	31	37	4	12	
mW 10.6/...-4-239d/..	106.5	65	34	26	43.5	46	4	12	
mW 12/...-4-148d/..	120	75	36	28	42.5	50	6	14	
mW 13/...-4-155e/...	130	85	38	30	40	58	6	14	
mW 13.5/...-4-119e/..	135	85	38	30	40	56	6	14	
mW 15/...-4-178d/..	150	95	40	34	59	65	8	16	
mW 17/...-4-139d/..	170	110	48	34	66.5	77	8	16	
mW 20/...4.56c/..	200	130	48	37	78	85	10	18	

<p><b>options</b></p> <p>E+A – rating plate customer - rating plate</p> <p><b>Temperature sensor:</b></p> <ul style="list-style-type: none"> <li>- PTC thermistor 145° C</li> <li>- thermoswitch 145° C</li> <li>- NTC thermistor</li> <li>- KTY 84-130</li> <li>- PT 100</li> </ul> <p>earth cable: yellow/green</p>	<p><b>dimensions</b></p>  <p>normal: 3 ends 400 mm length</p> <p>U brown V blue W black</p>
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on request: - other stator diameter  
- other iron length

complete drawing - see model sheet