

AC Motors



Single-phase asynchronous motor

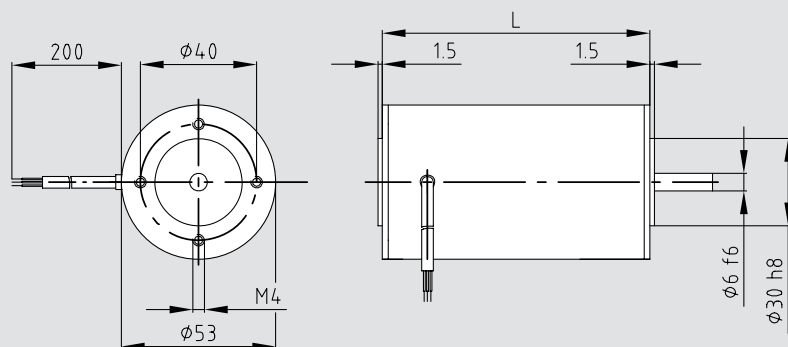
Properties:	Connection:	230 V / 50 Hz AC system , optional designs for 110 V / 60 Hz or other voltages / frequencies Running capacitor required Cable connection, optional plug-in connector
	Service life:	20,000 hours, S1 duty
	Insulation mat. class:	B, optional F
	System of protection:	IP 40, optional up to IP 65
	Special model:	Design for short-time duty with high performance
	Options:	Thermal protection, special gears, special flanges, custom designed



Type	Name	U	AC voltage	K 542	K 562
	Nominal voltages			230	230
Specification	Nominal power	P_2	W	10	12
	Nominal speed	n_{nom}	rpm	2700	2600
	Nominal torque	T_{nom}	cNm	3.5	5.0
	Starting torque	T_S	cNm	2.5	2.5
	Nominal current	I_{nom}	mA	136	110
	No-load current	I_0	mA	146	165
Characteristics	Locked rotor speed	n_{break}	rpm	2150	2200
	Locked rotor torque	T_{braek}	cNm	6	7
	Nominal efficiency	η	%	35.5	47.0
Connection	Terminal resistance	R	Ohm	395	530
	Input power	P_1	W	28	25
	Running capacitor	C	μ F	1.5	1.5
Dynamics	Weight	m	kg	0,7	1,0
	Moment of inertia	J	gcm ²	128	200
Thermal	Adm. ambient temperature	T_a	°C	-20 to +40	-20 to +40
	Max. adm. stator temperature	T_{max}	°C	+120	+120
Coupling	Shaft diameter	d	mm	6	6
	Max. axial force	F_a	N	8	8
	Max. radial force	F_r	N	100	100

Dimensions

Type	L / mm
K 542	92
K 562	112



System technology (table next page)

Recommended combinations	System technology			
	Worm gearing	S 446	S 567	GS 1
Spur gear	Z 5	Z 67		
Planetary gear	P 30			
Rotary encoder	RE 5	RI 5	RV	
Brake	B 35			
Electronics				

Gear unit combinations

• All torques are calculated with an duty factor of 1!



Additional recommended combinations with gear units: GS 1 (Page Sc-05)
 S 567 (Page Sc-02)
 Z 67 (Page St-04)
 P50 (Page P-02)

Type	Name Nominal voltage / AC voltage	K 542 230		K 562 230			
		n rpm	M Nm	n rpm	M Nm		
S 446 Worm gear 1-stage Diagram upon request		i=2.25	1200 0.1	1156 0.1			
		i=5	540 0.1	520 0.2			
		i=7	386 0.2	371 0.2			
		i=10	270 0.2	260 0.3			
		i=15	180 0.3	173 0.4			
		i=25	108 0.4	104 0.5			
		i=30	90 0.4	87 0.6			
		i=40	68 0.4	65 0.5			
		i=50	54 0.6	52 0.8			
	i=60	45 0.5	43 0.8				

Additional reductions upon request.

Z 5 Spur gear 1-3 stage		n	M	n	M		
		rpm	Nm	rpm	Nm		
		i=4.55	593 0.1	571 0.2			
		i=8.9	303 0.3	292 0.4			
		i=13	208 0.4	200 0.6			
		i=17.4	155 0.5	149 0.8			
		i=25	108 0.7	104 1.1			
		i=35.5	76 1.1	73 1.5			
		i=46.2	58 1.3	56 1.9			
		i=82	33 2.3	32 3.3			
		i=110	25 3.1	24 3.3*			
		i=145	19 3.3*	18 3.3*			

Additional reductions upon request.

* Max. load at the gear output.

(Motor power must be limited if necessary)

P 30 Planetary gear 1-3 stage		n	M	n	M		
		rpm	Nm	rpm	Nm		
		i=3.7	730 0.1	703 0.1			
		i=5.2	519 0.1	500 0.2			
		i=6.8	397 0.2	382 0.3			
		i=13.7	197 0.4	190 0.5			
		i=18.4	147 0.5	141 0.7			
		i=28.9	93 0.8	90 1.1			
		i=45.6	59 1.2	57 1.7			
		i=78.7	34 1.9	33 2.8			
		i=115	23 2.8	23 4.0			
		i=169	16 4.1	15 4.5*			

Additional reductions upon request.

* Max. load at the gear output.

(Motor power must be limited if necessary)

Single-phase asynchronous motor

Properties:

Connection: 230 V / 50 Hz AC system , optional designs for 110 V / 60 Hz or other voltages / frequencies
Running capacitor required
Cable connection, optional plug-in connector

Service life: 20,000 hours, S1 duty

Insulation mat.class: B, optional F

System of protection: IP 40, optional up to IP 65

Special model: Design for short-time duty with high performance

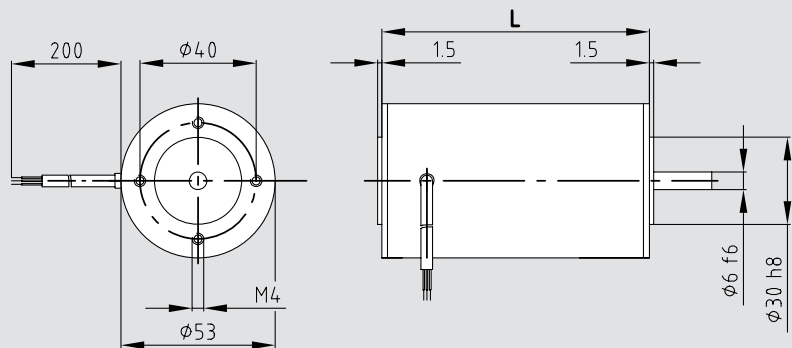
Options: Thermal protection, special shafts, special flanges, custom designed



Type	Name	U	AC voltage	K 544	K 564		
	Nominal voltages			230	230		
Specification	Nominal power	P_2	W	3	5		
	Nominal speed	N_{nom}	rpm	1200	1200		
	Nominal torque	T_{nom}	cNm	2,4	3.8		
	Starting torque	T_A	cNm	2,6	3.4		
	Nominal current	I_{nom}	mA	67	100		
	No-load current	I_0	mA	64	90		
Characteristics	Locked rotor speed	n_{break}	rpm	1000	1050		
	Locked rotor torque	T_{break}	cNm	3.4	5.1		
	Nominal efficiency	η	%	20.0	21.5		
Connection	Terminal resistance	R	Ohm	1615	1110		
	Input power	P_1	W	15	22		
	Running capacitor	C	μ F	1.0	1.5		
Dynamics	Weight	m	kg	0.7	1.0		
	Moment of inertia	J	gcm ²	128	200		
Thermal	Adm. ambient temperature	T_a	°C	-20 to +40	-20 to +40		
	Max. adm. stator temperature	T_{max}	°C	+120	+120		
Coupling	Shaft diameter	d	mm	6	6		
	Max. axial force	F_a	N	8	8		
	Max. radial force	F_r	N	100	100		

Dimensions

Type	L / mm
K 544	92
K 564	112



System technology (tables next page)

Recommended combinations	System technology (tables next page)			
	Worm gear	S 446	S 567	GS 1
Spur gear	Z 5	Z 67		
Planetary gear	P 30			
Rotary encoder	RE 5	RI 5	RV	
Brake	B 35			
Electronics				

Gear unit combinations

• All torques are calculated with an duty factor of 1!



Additional recommended combinations with gear units: GS 1 (Page Sc-05)
 S 567 (Page Sc-02)
 Z 67 (Page St-04)
 P50 (Page P-02)

Type	Name Nominal voltage / AC voltage	K 544 230		K 564 230			
S 446 Worm gear 1-stage Diagram upon request		n rpm	M Nm	n rpm	M Nm		
	i=2.25	533	0.1	533	0.1		
	i=5	240	0.1	240	0.1		
	i=7	171	0.1	171	0.2		
	i=10	120	0.2	120	0.2		
	i=15	80	0.2	80	0.3		
	i=25	48	0.3	48	0.4		
	i=30	40	0.3	40	0.4		
	i=40	30	0.2	30	0.4		
	i=50	24	0.4	24	0.6		
	i=60	20	0.4	20	0.6		

Additional reductions upon request.

Z 5 Spur gear 1-3 stage		n rpm	M Nm	n rpm	M Nm		
		i=4.55	264	0.1	264	0.2	
i=8.9	135	0.2	135	0.3			
i=13	92	0.3	92	0.4			
i=17.4	69	0.4	69	0.6			
i=25	48	0.5	48	0.8			
i=35.5	34	0.7	34	1.1			
i=46.2	26	0.9	26	1.4			
i=82	15	1.6	15	2.5			
i=110	11	2.1	11	3.3*			
i=145	8	2.8	8	3.3*			

Additional reductions upon request.

* Max. load at the gear output.

(Motor power must be limited if necessary)

P 30 Planetary gear 1-3 stage		n rpm	M Nm	n rpm	M Nm		
		i=3.7	324	0.1	324	0.1	
i=5.2	231	0.1	231	0.2			
i=6.8	176	0.1	176	0.2			
i=13.7	88	0.2	88	0.4			
i=18.4	65	0.3	65	0.5			
i=28.9	42	0.5	42	0.8			
i=45.6	26	0.8	26	1.3			
i=78.7	15	1.3	15	2.1			
i=115	10	1.9	10	3.1			
i=169	7	2.8	7	4.5			

Additional reductions upon request.

Single-phase asynchronous motor

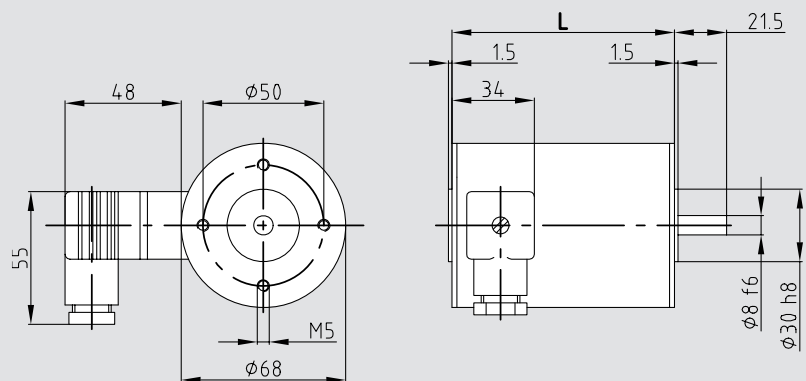
Properties: Connection: 230 V / 50 Hz AC system , optional designs for 110 V / 60 Hz or other voltages / frequencies
 Running capacitor required
 Connections using K2 type plug-in connectors
 Service life: 20,000 hours, S1 duty
 Insulation mat. class: B, optional F
 System of protection: IP 44, optional up to IP 65
 Special model: Design for short-time duty with high performance
 Options: Thermal protection, special shafts, special flanges, custom designed



Type	Name	U	AC voltage	K 642	K 662
	Nominal voltages			230	230
Specification	Nominal power	P_2	W	19	26
	Nominal speed	N_{nom}	rpm	2500	2650
	Nominal torque	T_{nom}	cNm	7.0	9.5
	Starting torque	T_S	cNm	5	6
	Nominal current	I_{nom}	mA	174	252
	No-load current	I_0	mA	94	207
Characteristics	Locked rotor speed	n_{break}	rpm	2000	2250
	Locked rotor torque	T_{break}	cNm	8.5	14.0
	Nominal efficiency	η	%	46.5	52.0
Connection	Terminal resistance	R	Ohm	251	142
	Input power	P_1	W	39.5	50.0
	Running capacitor	C	μ F	2.0	2.5
Dynamics	Weight	m	kg	1.2	1.7
	Moment of inertia	J	gcm ²	390	595
Thermal	Adm. ambient temperature	T_a	°C	-20 to +40	-20 to +40
	Max. adm. stator temperature	T_{max}	°C	+120	+120
Coupling	Shaft diameter	d	mm	8	8
	Max. axial force	F_a	N	20	20
	Max. radial force	F_r	N	220	220

Dimensions

Type	L / mm
K 642	92
K 662	112



System technology (tables next page)

Recommended combinations	Worm gear			
	Spur gear	S 567	GS 3	
Planetary gear	Z 6	Z 8	Z 89	
	P 50	P 60		
Rotary encoder	RE 6	RI 6	RV	
Brake	B 3			
Electronics				

Gear unit combinations

• All torques are calculated with an duty factor of 1!



Additional recommended combinations with gear units: GS 3 (Page Sc-06)
 Z 89 (Page St-05)
 P60 (Page P-03)

Type	Name Nominal voltage / AC voltage	K 642 230		K 662 230			
S 567 Worm gear 1-stage 		n rpm	M Nm	n rpm	M Nm		
	i=3.6	694	0.2	736	0.2		
	i=5	500	0.2	530	0.3		
	i=10	250	0.4	265	0.5		
	i=20	125	0.8	133	1.0		
	i=24	104	0.8	110	1.1		
	i=30	83	0.9	88	1.2		
	i=40	63	1.1	66	1.5		
	i=50	50	1.3	53	1.7		
i=60	42	1.7	44	2.3			

Additional reductions upon request.

Z 6 Spur gear 1-3 stage 	n rpm	M Nm	n rpm	M Nm		
	i=4.82	519	0.3	550	0.4	
i=10.4	240	0.7	255	0.9		
i=15.4	162	1.0	172	1.3		
i=20.5	122	1.3	129	1.8		
i=31.6	79	1.9	84	2.6		
i=48.9	51	2.9	54	3.9		
i=64.8	39	3.7	41	5.0		
i=86.1	29	4.9	31	6.6		
i=117	21	6.6	23	7*		
i=155	16	7*	17	7*		

Additional reductions upon request.

* Max. load at the gear output.

(Motor power must be limited if necessary)

P 50 Planetary gear 1-3 stage 	n rpm	M Nm	n rpm	M Nm		
	i=3.7	676	0.2	716	0.3	
i=5.2	481	0.3	510	0.4		
i=6.8	368	0.4	390	0.5		
i=13.7	182	0.7	193	1.0		
i=18.4	136	1.0	144	1.3		
i=28.9	87	1.5	92	2.1		
i=45.6	55	2.4	58	3.2		
i=78.7	32	3.9	34	5.2		
i=115	22	5.6	23	7.6		
i=169	15	8.3	16	11.2		

Additional reductions upon request.

Single-phase asynchronous motor

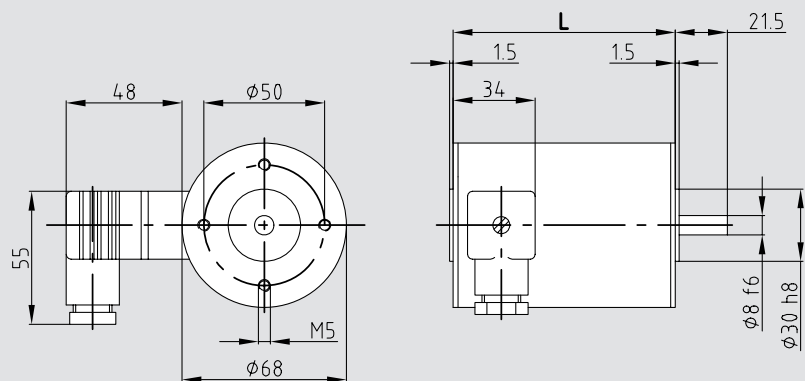
Properties:	Connection:	230 V / 50 Hz AC system , optional designs for 110 V / 60 Hz or other voltages / frequencies Running capacitor required Connections using K2 type plug-in connectors
	Service life:	20,000 hours, S1 duty
	Insulation mat. class:	B, optional F
	System of protection:	IP 44, optional up to IP 65
	Special model:	Design for short-time duty with high performance
	Options:	Thermal protection, special shafts, special flanges, custom designed



Type	Name			K 644	K 664		
	Nominal voltages	U	AC voltage	230	230		
Specification	Nominal power	P ₂	W	7	11		
	Nominal speed	N _{nom}	rpm	1250	1000		
	Nominal torque	T _{nom}	cNm	5.5	10.5		
	Starting torque	T _S	cNm	7.0	9.5		
	Nominal current	I _{nom}	mA	102	144		
	No-load current	I ₀	mA	96	95		
Characteristics	Locked rotor speed	n _{break}	rpm	900	800		
	Locked rotor torque	T _{break}	cNm	9	12		
	Nominal efficiency	η	%	32.0	35.5		
Connection	Terminal resistance	R	Ohm	441	382		
	Input power	P ₁	W	22,5	31.0		
	Running capacitor	C	μF	1.5	2.0		
Dynamics	Weight	m	kg	1.2	1.7		
	Moment of inertia	J	gcm ²	390	595		
Thermal	Adm. ambient temperature	T _a	°C	-20 to +40	-20 to +40		
	Max. adm. stator temperature	T _{max}	°C	+120	+120		
Coupling	Shaft diameter	d	mm	8	8		
	Max. axial force	F _a	N	20	20		
	Max. radial force	F _r	N	220	220		

Dimensions

Type	L / mm
K 644	92
K 664	112



System technology (tables next page)

Recommended combinations	Gear types			
	Worm gear	S 567	GS 3	
Spur gear	Z 6	Z 8	Z 89	
Planetary gear	P 50	P 60		
Rotary encoder	RE 6	RI 6	RV	
Brake	B 3			
Electronics				

Gear unit combinations



• All torques are calculated with an duty factor of 1!

Additional recommended combinations with gear units: GS 3 (Page Sc-06)
 Z 89 (Page St+05)
 P60 (Page P-03)

Type	Name Nominal voltage / AC voltage	K 644 230		K 664 230			
		n rpm	M Nm	n rpm	M Nm		
S 567 Worm gear 1-stage 	i=3.6	347	0.1	278	0.3		
	i=5	250	0.2	200	0.3		
	i=10	125	0.3	100	0.6		
	i=20	63	0.6	50	1.1		
	i=24	52	0.6	42	1.2		
	i=30	42	0.7	33	1.4		
	i=40	31	0.9	25	1.7		
	i=50	25	1.0	20	1.9		
	i=60	21	1.3	17	2.5		

Additional reductions upon request.

		n rpm	M Nm	n rpm	M Nm		
Z 6 Spur gear 1-3 stage 	i=4.82	259	0.2	207	0.5		
	i=10.4	120	0.5	96	1.0		
	i=15.4	81	0.8	65	1.5		
	i=20.5	61	1.0	49	1.9		
	i=31.6	40	1.5	32	2.8		
	i=48.9	26	2.3	20	4.4		
	i=64.8	19	2.9	15	5.5		
	i=86.1	15	3.8	12	7*		
	i=117	11	5.2	9	7*		
	i=155	8	6.9	6	7*		

Additional reductions upon request.

* Max. load at the gear output.

(Motor power must be limited if necessary)

		n rpm	M Nm	n rpm	M Nm										
P 50 Planetary gear 1-3 stage <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td></td> <td>1-stage</td> <td>2-stage</td> <td>3-stage</td> </tr> <tr> <td>X</td> <td>56</td> <td>70</td> <td>84</td> </tr> </table>		1-stage	2-stage	3-stage	X	56	70	84	i=3.7	338	0.2	270	0.3		
		1-stage	2-stage	3-stage											
	X	56	70	84											
	i=5.2	240	0.2	192	0.4										
	i=6.8	184	0.3	147	0.6										
	i=13.7	91	0.6	73	1.1										
	i=18.4	68	0.8	54	1.4										
	i=28.9	43	1.2	35	2.3										
	i=45.6	27	1.9	22	3.6										
	i=78.7	16	3.0	13	5.8										
i=115	11	4.4	9	8.4											
i=169	7	6.5	6	12.4											

Additional reductions upon request.

Single-phase asynchronous motor

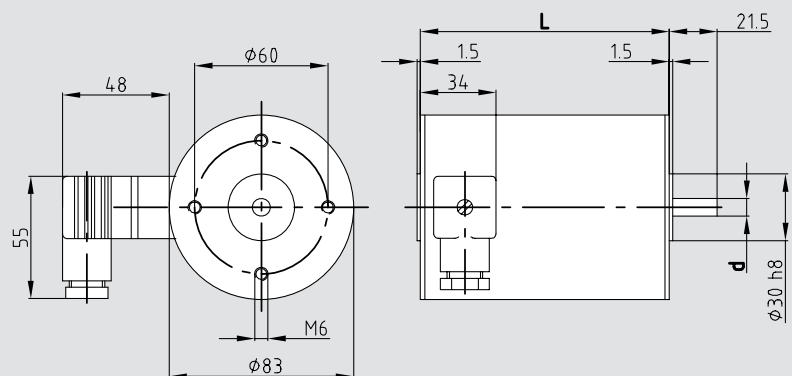
Properties: Connection: 230 V / 50 Hz AC system , optional designs for 110 V / 60 Hz or other voltages / frequencies
 Running capacitor required
 Connections using K2 type plug-in connectors
 Service life: 20,000 hours, S1 duty
 Insulation mat. class: B, optional F
 System of protection: IP 44, optional up to IP 65
 Special model: Design for short-time duty with high performance
 Options: Thermal protection, special shafts, special flanges, custom designed



Type	Name	U	AC voltage	K 842	K 862	K 882
	Nominal voltages			230	230	230
Specification	Nominal power	P_2	W	31.0	43.5	78.5
	Nominal speed	N_{nom}	rpm	2400	2700	2800
	Nominal torque	T_{nom}	cNm	12.5	15.5	27.0
	Starting torque	T_S	cNm	9.5	12.0	15.5
	Nominal current	I_{nom}	mA	276	397	526
	No-load current	I_0	mA	105	281	207
Characteristics	Locked rotor speed	n_{break}	rpm	2100	2150	2250
	Locked rotor torque	T_{break}	cNm	16.5	27.0	52.5
	Nominal efficiency	η	%	50.5	55.5	66.5
Connection	Terminal resistance	R	Ohm	103	63	41
	Input power	P_1	W	61.5	78.0	118.0
	Running capacitor	C	μ F	3.0	4.5	8.0
Dynamics	Weight	m	kg	1.9	2.5	3.3
	Moment of inertia	J	gcm ²	750	1050	1400
Thermal	Adm. ambient temperature	T_a	°C	-20 to +40	-20 to +40	-20 to +40
	Max. adm. stator temperature	T_{max}	°C	+120	+120	+120
Coupling	Shaft diameter	d	mm	8	8	10
	Max. axial force	F_a	N	20	20	40
	Max. radial force	F_r	N	220	220	400

Dimensions

Type	L / mm
K 842	92
K 862	112
K 882	132



System technology (tables next page)

Recommended combinations	Gear types			
	Worm gear	GS 3	S 769	
Spur gear	Z 8	M 189		
Planetary gear	P 60	P 80		
Rotary encoder	RE 8	RI 8	RV	
Brake	B 3			
Electronics				

Single-phase asynchronous motor

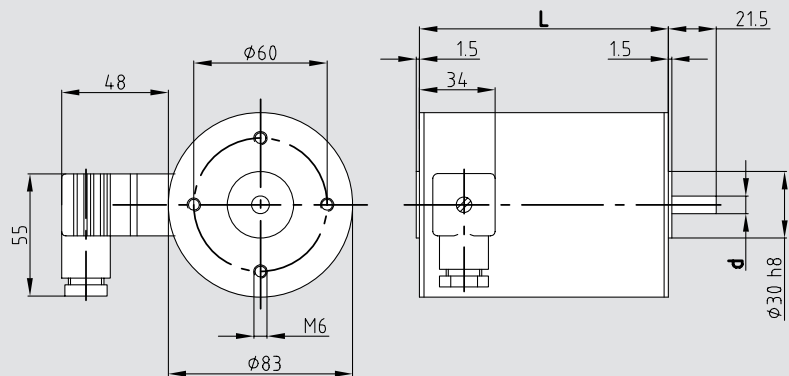
Properties: Connection: 230 V / 50 Hz AC system , optional designs for 110 V / 60 Hz or other voltages / frequencies
 Running capacitor required
 Connections using K2 type plug-in connectors
 Service life: 20,000 hours, S1 duty
 Insulation mat. class: B, optional F
 System of protection: IP 44, optional up to IP 65
 Special model: Design for short-time duty with high performance
 Options: Thermal protection, special shafts, special flanges, custom designed



Type	Name	U	AC voltage	K 844	K 864	K 884
	Nominal voltages			230	230	230
Specification	Nominal power	P_2	W	16.0	25.5	41.0
	Nominal speed	N_{nom}	rpm	1200	1200	1300
	Nominal torque	T_{nom}	cNm	13	20	30
	Starting torque	T_S	cNm	10.5	12.5	16.0
	Nominal current	I_{nom}	mA	204	320	444
	No-load current	I_0	mA	125	257	343
Characteristics	Locked rotor speed	n_{break}	rpm	1100	1000	1100
	Locked rotor torque	T_{break}	cNm	17.5	27.5	45.0
	Nominal efficiency	η	%	37.5	42.5	48.5
Connection	Terminal resistance	R	Ohm	229	119	41
	Input power	P_1	W	43	60	85
	Running capacitor	C	μ F	2.5	3.0	5.0
Dynamics	Weight	m	kg	1.9	2.5	3.4
	Moment of inertia	J	gcm ²	750	1050	1400
Thermal	Adm. ambient temperature	T_a	°C	-20 to +40	-20 to +40	-20 to +40
	Max. adm. stator temperature	T_{max}	°C	+120	+120	+120
Coupling	Shaft diameter	d	mm	8	8	10
	Max. axial force	F_a	N	20	20	40
	Max. radial force	F_r	N	220	220	400

Dimensions

Type	L / mm
K 844	92
K 864	112
K 884	132



System technology (tables next page)

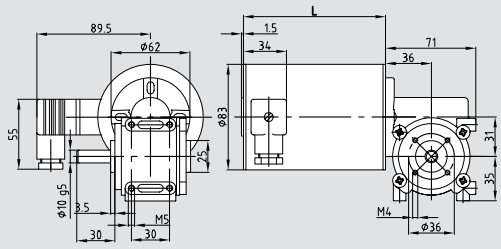
Recommended combinations	Worm gear	GS 3	S 769
	Spur gear	Z 8	M 189
	Planetary gear	P 60	P 80
	Rotary encoder	RE 8	RI 8 RV
	Brake	B 3	
	Electronics		

Gear unit combinations

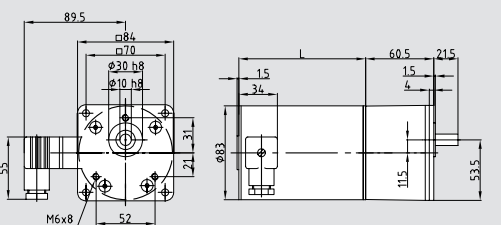
• All torques are calculated with an duty factor of 1!



Additional recommended combinations with gear units: M 189 (Page St-09)
 S 769 (Page Sc-04)
 P80 (Page P-04)

Type	Name Nominal voltage / AC voltage	K 844		K 864		K 884	
		n rpm	M Nm	n rpm	M Nm	n rpm	M Nm
GS 3 Worm gear 1-stage 		230	230	230			
	i=2.5	480	0.3	480	0.4	520	0.62
	i=5	240	0.5	240	0.8	260	1.17
	i=7	171	0.7	171	1.1	186	1.6
	i=10	120	0.9	120	1.4	130	2.0
	i=15	80	1.2	80	1.9	87	2.9
	i=20	60	1.5	60	2.3	65	3.4
	i=30	40	1.8	40	2.8	43	4.2
	i=50	24	2.3	24	3.5	26	5.3
	i=70	17	3.1	17	4.8	19	7.1
i=100	12	3.6	12	5.6	13	8.4	

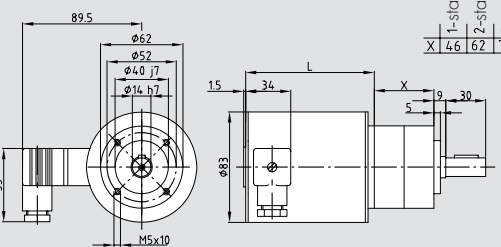
Additional reductions upon request.

Type	Name	K 844		K 864		K 884	
		n rpm	M Nm	n rpm	M Nm	n rpm	M Nm
Z 8 Spur gear 1-3 stage 		230	230	230			
	i=5.6	214	0.7	214	1.0	232	1.5
	i=13	92	1.5	92	2.3	100	3.5
	i=17.5	69	2.0	69	3.2	74	4.7
	i=25	48	2.9	48	4.5	52	6.8
	i=36.5	33	4.0	33	6.2	36	9.3
	i=49.5	24	5.5	24	8.4	26	10.5*
	i=71	17	7.8	17	12*	18	12*
	i=96.5	12	10.2	12	12*	13	12*
	i=121	10	12*	10	12*	11	12*

Additional reductions upon request.

* Max. load at the gear output.

(Motor power must be limited if necessary)

Type	Name	K 844		K 864		K 884	
		n rpm	M Nm	n rpm	M Nm	n rpm	M Nm
P 60 Planetary gear 1-3 stage 		230	230	230			
	i=3.7	324	0.4	324	0.6	351	0.9
	i=5.2	231	0.5	231	0.8	250	1.2
	i=6.8	176	0.7	176	1.1	191	1.6
	i=13.7	88	1.3	88	2.1	95	3.1
	i=18.4	65	1.8	65	2.8	71	4.0
	i=28.9	42	2.8	42	4.3	45	7.0
	i=45.6	26	4.4	26	6.8	29	10.0
	i=78.7	15	7.2	15	11.0	17	17.0
	i=115	10	10.5	10	16.1	11	24.0
	i=169	7	15.4	7	23.7	8	35.0

Additional reductions upon request.

Single-phase asynchronous motor

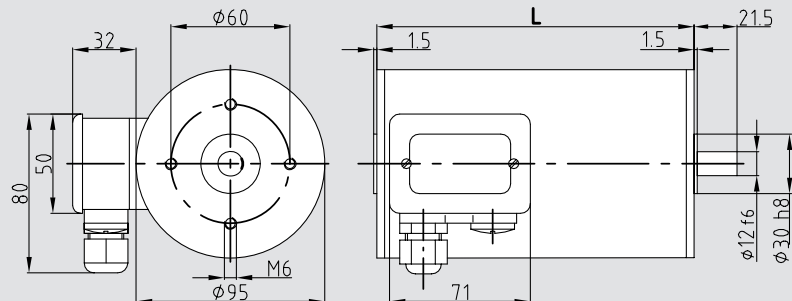
Properties: Connection: 230 V / 50 Hz AC system , optional designs for 110 V / 60 Hz or other voltages / frequencies
 Running capacitor required
 Connections using K2 type plug-in connectors
 Service life: 20,000 hours, S1 duty
 Insulation mat. class: F
 System of protection: IP 44, optional up to IP 65
 Special model: Design for short-time duty with high performance
 Options: Thermal protection, special shafts, special flanges, custom designed



Type	Name	U	AC voltage	K 9562	K 9582
	Nominal voltages			230	230
Specification	Nominal power	P_2	W	110	125
	Nominal speed	N_{nom}	rpm	2650	2750
	Nominal torque	T_{nom}	cNm	40.0	43.5
	Starting torque	T_S	cNm	22.5	32.0
	Nominal current	I_{nom}	mA	811	868
	No-load current	I_0	mA	250	351
Characteristics	Locked rotor speed	n_{break}	rpm	2150	1950
	Locked rotor torque	T_{break}	cNm	57.0	83.5
	Nominal efficiency	η	%	60.5	65.5
Connection	Terminal resistance	R	Ohm	36	22
	Input power	P_1	W	181	191
	Running capacitor	C	μ F	9	12
Dynamics	Weight	m	kg	3.7	4.5
	Moment of inertia	J	gcm ²	1532	1964
Thermal	Adm. ambient temperature	T_a	°C	-20 to +40	-20 to +40
	Max. adm. stator temperature	T_{max}	°C	+120	+120
Coupling	Shaft diameter	d	mm	12	12
	Max. axial force	F_a	N	65	65
	Max. radial force	F_r	N	700	700

Dimensions

Type	L / mm
K 9562	140
K 9582	160



System technology (tables next page)

Recommended combinations	Worm gear	S 769	GS 3
	Spur gear	M 10	M 189
	Planetary gear	P 80	P 60
Rotary encoder	RE 95	RI 95	RV
Brake	B 3	B 200	B 220
Electronics			

Gear unit combinations

• All torques are calculated with an duty factor of 1!



Additional recommended combinations with gear units: M 189 (Page St-09)
 P60 (Page P-03)
 GS 3 (Page Sc-06)

Type	Name Nominal voltage / AC voltage	K 9562 230		K 9582 230	
S 769 Worm gear 1-stage 		n rpm	M Nm	n rpm	M Nm
	i=2.8	946	0.9	982	1.0
	i=5	530	1.6	550	1.7
	i=7.3	363	2.1	377	2.3
	i=10	265	2.6	275	2.9
	i=12	221	3.0	229	3.3
	i=15	177	3.4	183	3.7
	i=20	133	4.1	138	4.4
	i=30	88	4.8	92	5.2
	i=40	66	5.4	69	5.9
i=58	46	7.0	47	7.6	

Additional reductions upon request.

M 10 Spur gear 1-3 stage 	n rpm	M Nm	n rpm	M Nm
	i=5	530	1.8	550
i=11	241	4.0	250	4.3
i=17.9	148	6.4	154	7.0
i=25.9	102	8.8	106	9.6
i=42	63	14.3	65	15.5
i=75.1	35	25.5	37	27.8
i=98.6	27	30*	28	30*
i=145	18	30*	19	30*
i=177	15	30*	16	30*
i=260	10	30*	11	30*

Additional reductions upon request.

* Max. load at the gear output.

(Motor power must be limited if necessary)

P 80 Planetary gear 1-3 stage 	n rpm	M Nm	n rpm	M Nm
	i=3.7	716	1.2	743
i=5.2	510	1.7	529	1.8
i=6.8	390	2.2	404	2.4
i=13.7	193	4.1	201	4.5
i=18.4	144	5.5	149	6.0
i=28.9	92	8.7	95	9.4
i=45.6	58	13.7	60	14.9
i=78.7	34	22.0	35	24.0
i=115	23	32.2	24	35.0
i=169	16	47.3	16	51.5

Additional reductions upon request.

Single-phase asynchronous motor

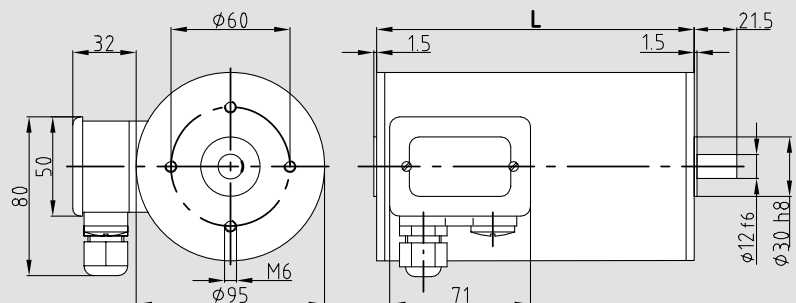
Properties:	Connection:	230 V / 50 Hz AC system , optional designs for 110 V / 60 Hz or other voltages / frequencies Running capacitor required Connections using K2 type plug-in connectors
	Service life:	20,000 hours, S1 duty
	Insulation mat.class:	F
	System of protection:	IP 44, optional up to IP 65
	Special model:	Design for short-time duty with high performance
	Options:	Thermal protection, special shafts, special flanges, custom designed



Type	Name	U	AC voltage	K 9564	K 9584
	Nominal voltages			230	230
Specification	Nominal power	P_2	W	71	87
	Nominal speed	N_{nom}	rpm	1350	1300
	Nominal torque	T_{nom}	cNm	50	64
	Starting torque	T_s	cNm	19	51
	Nominal current	I_{nom}	mA	660	773
	No-load current	I_0	mA	431	546
Characteristics	Locked rotor speed	n_{break}	rpm	1250	900
	Locked rotor torque	T_{break}	cNm	64	105
	Nominal efficiency	η	%	53.5	55.5
Connection	Terminal resistance	R	Ohm	65	37
	Input power	P_1	W	132	158
	Running capacitor	C	μ F	6	10
Dynamics	Weight	m	kg	3,7	4,5
	Moment of inertia	J	gcm ²	2468	3164
Thermal	Adm. ambient temperature	T_a	°C	-20 to +40	-20 to +40
	max. adm. stator temperature	T_{max}	°C	+120	+120
Coupling	Shaft diameter	d	mm	12	12
	Max. axial force	F_a	N	65	65
	Max. radial force	F_r	N	700	700

Dimensions

Type	L / mm
K 9564	140
K 9584	160



System technology (tables next page)

Recommended combinations	Gear combinations			
	Worm gear	S 769	GS 3	
Spur gear	M 10	M 189		
Planetary gear	P 80	P 60		
Rotary encoder	RE 95	RI 95	RV	
Brake	B 3	B 200	B 220	
Electronics				

Gear unit combinations

• All torques are calculated with an duty factor of 1!



Additional recommended combinations with gear units: M 189 (Page St-09)
 P60 (Page P-03)
 GS 3 (Page Sc-06)

Type	Name Nominal voltage / AC voltage	K 9564 230		K 9584 230				
S 769 Worm gear 1-stage		n rpm	M Nm	n rpm	M Nm			
		i=2.8	482	1.1	464	1.5		
		i=5	270	2.0	260	2.5		
		i=7.3	185	2.6	178	3.3		
		i=10	135	3.3	130	4.2		
		i=12	113	3.8	108	4.8		
		i=15	90	4.3	87	5.5		
		i=20	68	5.1	65	6.5		
		i=30	45	6.0	43	7.7		
		i=40	34	6.8	33	8.7		
i=58	23	8.7	22	11.1				

Additional reductions upon request.

M 10 Spur gear 1-3 stage		n rpm	M Nm	n rpm	M Nm		
		i=5	270	2.3	260	2.9	
i=11	123	5.0	118	6.3			
i=17.9	75	8.1	73	10.3			
i=25.9	52	11.0	50	14.1			
i=42	32	17.9	31	22.8			
i=75.1	18	30*	17	30*			
i=98.6	14	30*	13	30*			
i=145	9	30*	9	30*			
i=177	8	30*	7	30*			
i=260	5	30*	5	30*			

Additional reductions upon request.

* Max. load at the gear output.

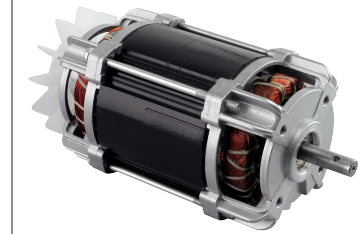
(Motor power must be limited if necessary)

P 80 Planetary gear 1-3 stage		n rpm	M Nm	n rpm	M Nm		
		i=3.7	365	1.5	351	1.9	
i=5.2	260	2.1	250	2.7			
i=6.8	199	2.7	191	3.5			
i=13.7	99	5.1	95	6.6			
i=18.4	73	6.9	71	8.8			
i=28.9	47	10.8	45	13.9			
i=45.6	30	17.1	29	21.9			
i=78.7	17	27.5	17	35.3			
i=115	12	40.3	11	51.5			
i=169	8	59.2	8	75.7			

Additional reductions upon request.

Single-phase asynchronous motor

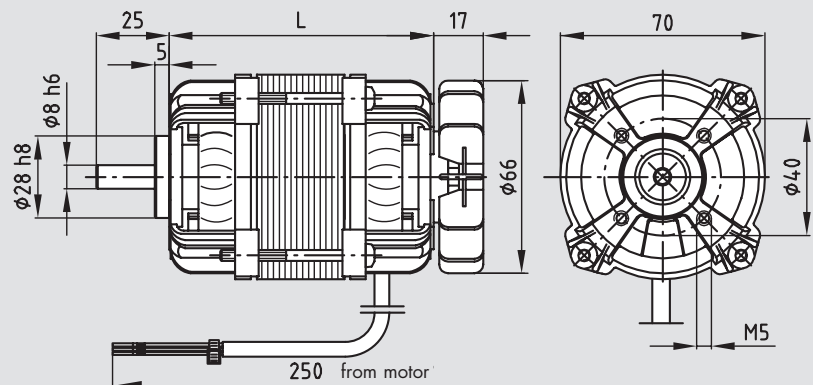
- Properties:**
- Connection: 230 V / 50 Hz AC system , optional designs for 110 V / 60 Hz or other voltages / frequencies
Running capacitor required
Cable connection, optional plug-in connector
 - Service life: 20,000 hours, S1 duty
 - Insulation mat.class: B, optional F
 - System of protection: IP 00 (open design)
 - Special model: Design for short-time duty with high performance
Alloy rotor for higher starting torque
 - Options: Thermal protection, special shafts, custom designed



Type	Name	U	AC voltage	Es 7120-2	Es 7140-2	Es 7160-2
	Nominal voltages	U	AC voltage	230	230	230
Specification	Nominal power	P_2	W	42,5	62.5	97.0
	Nominal speed	N_{nom}	rpm	2450	2650	2600
	Nominal torque	T_{nom}	cNm	16.5	22.5	33.5
	Starting torque	T_A	cNm	11.5	11.0	18.5
	Nominal current	I_{nom}	mA	426	518	750
	No-load current	I_0	mA	406	382	620
Characteristics	Locked rotor speed	n_{break}	rpm	2000	2300	2200
	Locked rotor torque	T_{break}	cNm	19	31	51
	Nominal efficiency	η	%	43.0	53.0	55.5
Connection	Terminal resistance	R	Ohm	211	92	38
	Input power	P_1	W	99	118	175
	Running capacitor	C	μ F	3.0	3.0	5.0
Dynamics	Weight	m	kg	1.0	1.4	1.8
	Moment of inertia	J	gcm ²	219	376	533
Thermal	Adm. ambient temperature	T_a	°C	-20 to +40	-20 to +40	-20 to +40
	Max. adm. stator temperature	T_{max}	°C	+120	+120	+120
Coupling	Shaft diameter	d	mm	8	8	8
	Max. axial force	F_a	N	20	20	20
	Max. radial force	F_r	N	200	200	200

Dimensions

Type	L / mm
Es 71202	80
Es 71402	100
Es 71602	120



System technology (tables next page)

Recommended combinations	Worm gear	GS 3	S 769
	Spur gear	Z 8	M 10 XX
	Planetary gear	P 60	P 50
	Rotary encoder	RE 6	RI 6
	Brake	B 200	B 220
	Electronics		

Gear unit combinations

- All torques are calculated with an duty factor of 1!



Additional recommended combinations with gear units: M 10 (Page St-07)
 S 769 (Page Sc-04)
 P50 (Page P-02)

Type	Name Nominal voltage / AC voltage	Es 7120-2 230		Es 7140-2 230		Es 7160-2 230		
GS 3 Worm gear 1-stage		n rpm	M Nm	n rpm	M Nm	n rpm	M Nm	
		i=2.5	980	0.3	1060	0.5	1040	0.69
		i=5	490	0.6	530	0.9	520	1.31
		i=7	350	0.9	379	1.2	371	1.8
		i=10	245	1.1	265	1.5	260	2.3
		i=15	163	1.6	177	2.2	173	3.2
		i=20	123	1.9	133	2.6	130	3.8
		i=30	82	2.3	88	3.2	87	4.7
		i=50	49	2.9	53	3.9	52	5.9
		i=70	35	3.9	38	5.4	37	8.0
i=100	25	4.6	27	6.3	26	9.4		

Additional reductions upon request.

Z 8 Spur gear 1-3 stage		n rpm	M Nm	n rpm	M Nm	n rpm	M Nm
		i=5.6	438	0.8	473	1.1	464
i=13	188	1.9	204	2.6	200	3.9	
i=17.5	140	2.6	151	3.5	149	5.3	
i=25	98	3.7	106	5.1	104	7*	
i=36.5	67	5.1	73	7.0	71	10.4	
i=49.5	49	6.9	54	9.5	53	10.5*	
i=58.5	42	8.2	45	11.2	44	12*	
i=71	35	10.0	37	12*	37	12*	
i=96.5	25	12*	27	12*	27	12*	
i=121	20	12*	22	12*	21	12*	

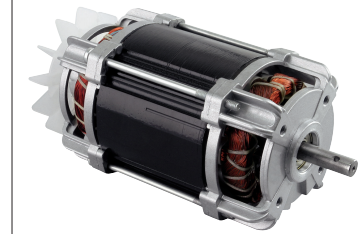
Additional reductions upon request. * Max. load at the gear output (Motor power must be limited if necessary)

P 60 Planetary gear 1-3 stage		n rpm	M Nm	n rpm	M Nm	n rpm	M Nm
		i=3.7	662	0.5	716	0.7	703
i=5.2	471	0.7	510	0.9	500	1.4	
i=6.8	360	0.9	390	1.2	382	1.8	
i=13.7	179	1.7	193	2.3	190	3.4	
i=18.4	133	2.3	144	3.1	141	5.0	
i=28.9	85	3.6	92	4.9	90	7.0	
i=45.6	54	5.6	58	7.7	57	11.0	
i=78.7	31	9.1	34	12.4	33	18.0	
i=115	21	13.3	23	18.1	23	27.0	
i=169	14	19.5	16	26.6	15	40	

Additional reductions upon request.

Single-phase asynchronous motor

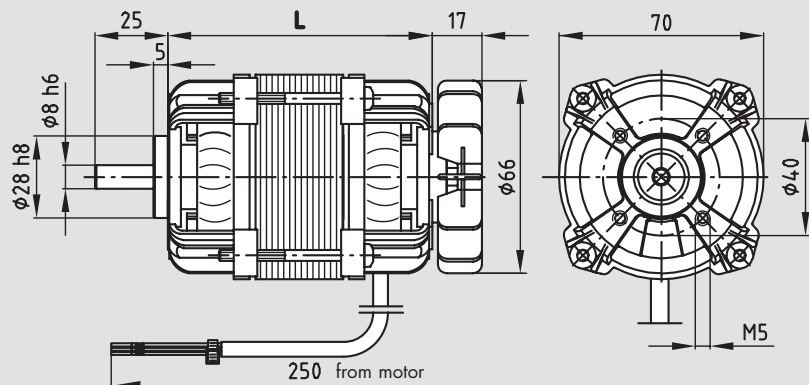
- Properties:**
- Connection: 230 V / 50 Hz AC system , optional designs for 110 V / 60 Hz or other voltages / frequencies
Running capacitor required
Cable connection, optional plug-in connector
 - Service life: 20,000 hours, S1 duty
 - Insulation mat. class: B, optional F
 - System of protection: IP 00 (open design)
 - Special model: Design for short-time duty with high performance
Alloy rotor for higher starting torque
 - Options: Thermal protection, special shafts, custom designed



Type	Name			Es 7140-4	Es 7160-4
	Nominal voltages	U	AC voltage	230	230
Specification	Nominal power	P_2	W	22	37
	Nominal speed	N_{nom}	rpm	1300	1100
	Nominal torque	T_{nom}	cNm	16.5	32.0
	Starting torque	T_A	cNm	13.5	25.5
	Nominal current	I_{nom}	mA	300	500
	No-load current	I_0	mA	270	348
Characteristics	Locked rotor speed	n_{break}	rpm	930	970
	Locked rotor torque	T_{break}	cNm	21.0	37.5
	Nominal efficiency	η	%	35	35
Connection	Terminal resistance	R	Ohm	222	117
	Input power	P_1	W	63	107
	Running capacitor	C	μ F	4.0	6.0
Dynamics	Weight	m	kg	1.4	1.8
	Moment of inertia	J	gcm ²	376	533
Thermal	Adm. ambient temperature	T_a	°C	-20 to +40	-20 to +40
	Max. adm. stator temperature	T_{max}	°C	+120	+120
Coupling	Shaft diameter	d	mm	8	8
	Max. axial force	F_a	N	20	20
	Max. radial force	F_r	N	220	220

Dimensions

Type	L / mm
Es 71404	100
Es 71604	120



System technology (tables next page)

Recommended combinations	Worm gear	GS 3	S 769
	Spur gear	M 189	M 10
	Planetary gear	P 60	P 50
	Rotary encoder	RV	
	Brake	B 200	B 220
	Electronics		

Gear unit combinations



• All torques are calculated with an duty factor of 1!

Additional recommended combinations with gear units: M 10 (Page St-07)
 S 769 (Page Sc-04)
 P50 (Page P-02)

Type	Name Nominal voltage / AC voltage	Es 7140-4 230		Es 7160-4 230		
GS 3 Worm gear 1-stage 		n rpm	M Nm	n rpm	M Nm	
		i=2.5	520	0.3	440	0.6
		i=5	260	0.6	220	1.1
		i=10	130	1.1	110	2.2
		i=15	87	1.5	73	2.9
		i=24	54	1.8	46	3.5
		i=30	43	2.2	37	4.3
		i=38	34	2.5	29	4.9
		i=55	24	2.7	20	5.3
		i=75	17	3.1	15	6.0
	i=100	13	4.6	11	7.4*	

Additional reductions upon request. * Max. load at the gear output.
 (Motor power must be limited if necessary)

M 189 Spur gear 1-4 stage		n rpm	M Nm	n rpm	M Nm	
Diagram upon request		i=4	325	0.6	275	1.2
		i=8.4	155	1.1	131	2.2
		i=13	100	1.8	85	3.4
		i=25.2	52	3.1	44	6.0
		i=38.9	33	4.7	28	9.2
		i=75.6	17	8.2	15	15*
		i=97.3	13	10.6	11	15*
		i=158	8	15*	7	15*
		i=349	4	15*	3	15*
		i=875	1	15*	1	15*

Additional reductions upon request. * Max. load at the gear output.
 (Motor power must be limited if necessary)

P 60 Planetary gear 1-3 stage		n rpm	M Nm	n rpm	M Nm	
		i=7	186	0.9	157	1.8
		i=25	52	3.1	44	6.0
		i=35	37	4.3	31	8.4
		i=46	28	5.7	24	11.0
		i=93	14	10.7	12	20.8
		i=124	10	14.3	9	27.8
		i=150	9	17.3	7	33.6
		i=181	7	20.9	6	40.5
		i=236	6	27.3	5	50*
		i=308	4	35.6	4	50*

Additional reductions upon request. * Max. load at the gear output.
 (Motor power must be limited if necessary)

Single-phase asynchronous motor

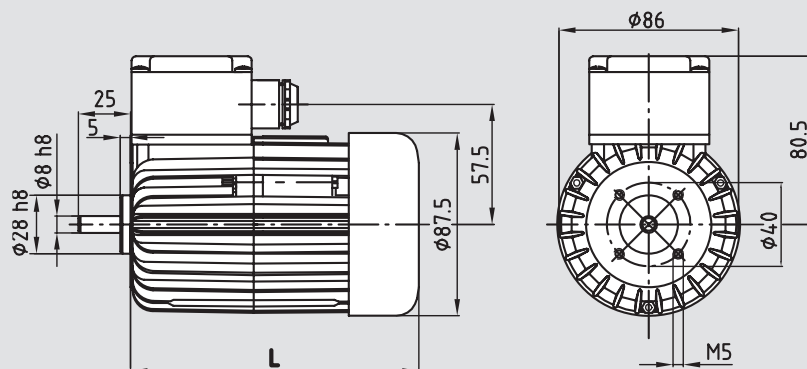
Properties:	Connection:	230 V / 50 Hz AC system , optional designs for 110 V / 60 Hz or other voltages / frequencies Running capacitor required Cable connection, optional plug-in connector
	Service life:	20,000 hours, S1 duty
	Insulation mat. class:	B, optional F
	System of protection:	IP 40
	Special model:	Design for short-time duty with high performance Alloy rotor for higher starting torque
	Options:	Thermal protection, special shafts, custom designed



Type	Name			Eg 7120-2	Eg 7140-2	Eg 7150-2
	Nominal voltages	U	AC voltage	230	230	230
Specification	Nominal power	P ₂	W	21	70	90
	Nominal speed	N _{nom}	rpm	2750	2750	2750
	Nominal torque	T _{nom}	cNm	7.5	25.0	31.0
	Starting torque	T _A	cNm	6.5	20.0	21.0
	Nominal current	I _{nom}	mA	270	590	700
	No-load current	I ₀	mA	345	630	870
Characteristics	Locked rotor speed	n _{break}	rpm	2200	2200	2200
	Locked rotor torque	T _{break}	cNm	14.5	42.0	55.0
	Nominal efficiency	η	%	32.5	50.0	58.0
Connection	Terminal resistance	R	Ohm	215	73	50
	Input power	P ₁	W	65	140	155
	Running capacitor	C	μF	2.0	5.0	6.0
Dynamics	Weight	m	kg	1.2	1.7	2.0
	Moment of inertia	J	gcm ²	219	376	455
Thermal	Adm. ambient temperature	T _a	°C	-20 to +40	-20 to +40	-20 to +40
	Max. adm. stator temperature	T _{max}	°C	+120	+120	+120
Coupling	Shaft diameter	d	mm	8	8	8
	Max. axial force	F _a	N	20	20	20
	Max. radial force	F _r	N	220	220	220

Dimensions

Type	L / mm
Eg 71202	118
Eg 71402	138
Eg 71502	138



System technology (tables next page)

Recommended combinations	Worm gear	GS 3	S 769
	Spur gear	Z 8	M 189
	Planetary gear	P 60	P 50
	Rotary encoder	RE 6	RE 7
	Brake	B 200	B 220
	Electronics		

Gear unit combinations

• All torques are calculated with an duty factor of 1!



Additional recommended combinations with gear units: M 189 (Page St-09)
 (Data upon request) S 668 (Page Sc-03)
 S 769 (Page Sc-04)
 P50 (Page P-02)

Type	Name Nominal voltage / AC voltage	Eg 7120-2 230		Eg 7140-2 230		Eg 7160-2 230	
		n rpm	M Nm	n rpm	M Nm	n rpm	M Nm
GS 3 Worm gear 1-stage 	i=2.5	1100	0.2	1100	0.5	1100	0.64
	i=5	550	0.3	550	1.0	550	1.21
	i=7	393	0.4	393	1.3	393	1.6
	i=10	275	0.5	275	1.7	275	2.1
	i=15	183	0.7	183	2.4	183	3.0
	i=20	138	0.9	138	2.9	138	3.5
	i=30	92	1.1	92	3.5	92	4.4
	i=50	55	1.3	55	4.4	55	5.4
	i=70	39	1.8	39	6.0	39	7.4
i=100	28	2.1	28	7.0	28	8.7	

Additional reductions upon request.

Type	Name Nominal voltage / AC voltage	Eg 7120-2 230		Eg 7140-2 230		Eg 7160-2 230	
		n rpm	M Nm	n rpm	M Nm	n rpm	M Nm
Z 8 Spur gear 1-3 stage 	i=5.6	491	0.4	491	1.3	491	1.6
	i=13	212	0.9	212	2.9	212	3.6
	i=17.5	157	1.2	157	3.9	157	4.9
	i=25	110	1.7	110	5.6	110	7.0
	i=36.5	75	2.3	75	7.8	75	9.6
	i=49.5	56	3.2	56	10.5*	56	10.5*
	i=71	39	4.5	39	12*	39	12*
	i=96.5	28	5.9	28	12*	28	12*
	i=131	21	8.0	21	12*	21	12*
i=165	17	10.0	17	12*	17	12*	

Additional reductions upon request.

* Max. load at the gear output.

(Motor power must be limited if necessary)

Type	Name Nominal voltage / AC voltage	Eg 7120-2 230		Eg 7140-2 230		Eg 7160-2 230	
		n rpm	M Nm	n rpm	M Nm	n rpm	M Nm
P 60 Planetary gear 1-3 stage Diagram upon request	i=3.7	743	0.2	743	0.7	743	0.9
	i=5.2	529	0.3	529	1.0	529	1.3
	i=6.8	404	0.4	404	1.4	404	1.7
	i=13.7	201	0.8	201	2.6	201	3.2
	i=18.4	149	1.0	149	3.5	149	4.0
	i=28.9	95	1.6	95	5.4	95	7.0
	i=45.6	60	2.6	60	8.6	60	11.0
	i=78.7	35	4.1	35	13.8	35	17.0
	i=115	24	6.0	24	20.1	24	25.0
i=169	16	8.9	16	29.6	16	37.0	

Additional reductions upon request.

Single-phase asynchronous motor

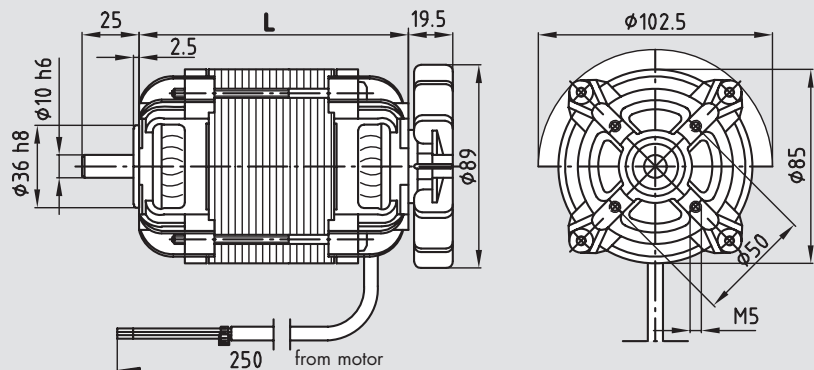
- Properties:**
- Connection: 230 V / 50 Hz AC system , optional designs for 110 V / 60 Hz or other voltages / frequencies
Running capacitor required
Cable connection, optional plug-in connector
 - Service life: 20,000 hours, S1 duty
 - Insulation mat.class: B, optional F
 - System of protection: IP 00 (open design)
 - Special model: Design for short-time duty with high performance
Alloy rotor for higher starting torque
 - Options: Thermal protection, special shafts, custom designed



Type	Name			Es 8645-2	Es 8655-2	Es 8670-2
	Nominal voltages	U	AC voltage	230	230	230
Specification	Nominal power	P_2	W	63	183	220
	Nominal speed	N_{nom}	rpm	2250	2550	2600
	Nominal torque	T_{nom}	cNm	63	69	81
	Starting torque	T_A	cNm	44	42	45
	Nominal current	I_{nom}	A	1.28	1.46	1.77
	No-load current	I_0	A	0.58	0.64	0.96
Characteristics	Locked rotor speed	n_{break}	rpm	1950	2100	2400
	Locked rotor torque	T_{break}	cNm	67	84	95
	Nominal efficiency	η	%	51.0	54.5	54.5
Connection	Terminal resistance	R	Ohm	36	31	18
	Input power	P_1	W	293	334	404
	Running capacitor	C	μ F	8	10	10
Dynamics	Weight	m	kg	2.3	2.6	3.1
	Moment of inertia	J	gcm ²	862	1021	1260
Thermal	Adm. ambient temperature	T_a	°C	-20 to +40	-20 to +40	-20 to +40
	Max. adm. stator temperature	T_{max}	°C	+120	+120	+120
Coupling	Shaft diameter	d	mm	10	10	10
	Max. axial force	F_a	N	40	40	40
	Max. radial force	F_r	N	400	400	400

Dimensions

Type	L / mm
Es 8645-2	108
Es 8655-2	118
Es 8670-2	133



System technology (tables next page)

Recommended combinations	Worm gear	SC 401	S 769
	Spur gear	M 10	
	Planetary gear	P 80	
Rotary encoder	RE 8	RI 8	
Brake	B 200	B 220	
Electronics			

Gear unit combinations

• All torques are calculated with an duty factor of 1!



Additional recommended combinations with gear units: S 769 (Page Sc-04)
 P50 (Page P-02)

Type	Name Nominal voltage / AC voltage	Es 8645-2 230		Es 8655-2 230		Es 8670-2 230	
SC 401 Worm gear 1-stage 		n rpm	M Nm	n rpm	M Nm	n rpm	M Nm
	i=6.8	331	3.3	375	3.6	382	4.21
	i=8	281	3.7	319	4.1	325	4.77
	i=10	225	4.5	255	5.0	260	5.8
	i=12	188	4.9	213	5.3	217	6.3
	i=15	150	6.0	170	6.6	173	7.7
	i=20	113	7.7	128	8.4	130	9.8
	i=30	75	9.6	85	10.5	87	12.3
	i=40	56	11.1	64	12.1	65	14.3
	i=56	40	10.9	46	11.9	46	14.0
i=80	28	14.1	32	15.3	33	18.0	

Additional reductions upon request.

M 10 Spur gear 1-3 stage 	n rpm	M Nm	n rpm	M Nm	n rpm	M Nm
	i=5	450	2.8	510	3.1	520
i=11	205	6.2	232	6.8	236	8.0
i=17.9	126	10.1	142	11.0	145	13.0
i=25.9	87	13.9	98	15.1	100	17.7
i=42	54	22.5	61	24.6	62	28.9
i=75.1	30	30*	34	30*	35	30*
i=98.6	23	30*	26	30*	26	30*
i=145	16	30*	18	30*	18	30*
i=177	13	30*	14	30*	15	30*
i=260	9	30*	10	30*	10	30*

Additional reductions upon request. * Max. load at the gear output.
 (Motor power must be limited if necessary)

P 80 Planetary gear 1-3 stage 	n rpm	M Nm	n rpm	M Nm	n rpm	M Nm
	i=3.7	608	1.9	689	2.0	703
i=5.2	433	2.6	490	2.8	500	3.3
i=6.8	331	3.4	375	3.7	382	4.4
i=13.7	164	6.5	186	7.0	190	8.3
i=18.4	122	8.7	139	9.5	141	11.0
i=28.9	78	13.7	88	14.8	90	17.0
i=45.6	49	21.5	56	23.4	57	28.0
i=78.7	29	34.7	32	37.7	33	44.0
i=115	20	50.7	22	55.5	23	65.2
i=169	13	74.5	15	81.0	15	95.8

Additional reductions upon request.

Single-phase asynchronous motor

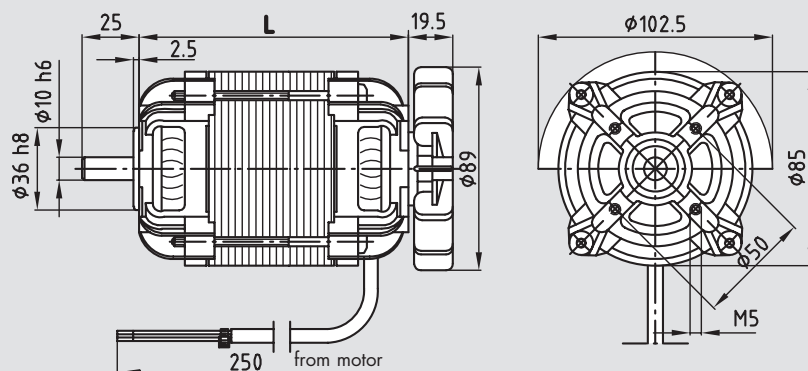
- Properties:**
- Connection: 230 V / 50 Hz AC system , optional designs for 110 V / 60 Hz or other voltages / frequencies
Running capacitor required
Cable connection, optional plug-in connector
 - Service life: 20,000 hours, S1 duty
 - Insulation mat. class: B, optional F
 - System of protection: IP 00 (open design)
 - Special model: Design for short-time duty with high performance
Alloy rotor for higher starting torque
 - Options: Thermal protection, special shafts, custom designed



Type	Name			Es 8645-4	Es 8655-4	Es 8670-4
	Nominal voltages	U	AC voltage	230	230	230
Specification	Nominal power	P_2	W	63	50	93
	Nominal speed	N_{nom}	rpm	1200	1300	1300
	Nominal torque	T_{nom}	cNm	49.5	36.5	67.5
	Starting torque	T_A	cNm	33	33	42
	Nominal current	I_{nom}	mA	659	786	1000
	No-load current	I_0	mA	454	676	809
Characteristics	Locked rotor speed	n_{break}	rpm	1100	1100	1150
	Locked rotor torque	T_{break}	cNm	55	60	89
	Nominal efficiency	η	%	45	30	45
Connection	Terminal resistance	R	Ohm	74	57	43
	Input power	P_1	W	141	167	205
	Running capacitor	C	μ F	8.0	10.0	12.0
Dynamics	Weight	m	kg	2.3	2.6	3.1
	Moment of inertia	J	gcm ²	860	1020	1260
Thermal	Adm. ambient temperature	T_a	°C	-20 to +40	-20 to +40	-20 to +40
	Max. adm. stator temperature	T_{max}	°C	+120	+120	+120
Coupling	Shaft diameter	d	mm	10	10	10
	Max. axial force	F_a	N	40	40	40
	Max. radial force	F_r	N	400	400	400

Dimensions

Type	L / mm
Es 8645-4	108
Es 8655-4	118
Es 8670-4	133



System technology (tables next page)

Recommended combinations	Worm gear	SC 401	S 769
	Spur gear	M 10	
	Planetary gear	P 80	
	Rotary encoder	RE 8	RI 8
	Brake	B 200	B 220
	Electronics		

Gear unit combinations

• All torques are calculated with an duty factor of 1!



Additional recommended combinations with gear units: S 769 (Data upon request) P50

(Page Sc-04) (Page P-02)

Type	Name Nominal voltage / AC voltage	Es 8645-4 230		Es 8655-4 230		Es 8670-4 230	
SC 401 Worm gear 1-stage 		n rpm	M Nm	n rpm	M Nm	n rpm	M Nm
	i=6.8	176	2.6	191	1.9	191	3.53
	i=8	150	2.9	163	2.2	163	4.0
	i=10	120	3.6	130	2.6	130	4.9
	i=12	100	3.9	108	2.8	108	5.3
	i=15	80	4.8	87	3.5	87	6.5
	i=20	60	6.0	65	4.5	65	8.2
	i=30	40	7.6	43	5.6	43	10.3
	i=40	30	8.7	33	6.4	33	11.9
	i=56	21	8.6	23	6.3	23	11.7
i=80	15	11.1	16	8.2	16	15.1	

Additional reductions upon request.

M 10 Spur gear 1-3 stage 	n rpm	M Nm	n rpm	M Nm	n rpm	M Nm
	i=5	240	2.2	260	1.6	260
i=11	109	4.9	118	3.6	118	6.7
i=17.9	67	8.0	73	5.9	73	10.9
i=25.9	46	10.9	50	8.0	50	14.9
i=42	29	17.7	31	13.0	31	24.1
i=75.1	16	30*	17	23.3	17	30*
i=98.6	12	30*	13	29.2	13	30*
i=145	8	30*	9	30*	9	30*
i=177	7	30*	7	30*	7	30*
i=260	5	30*	5	30*	5	30*

Additional reductions upon request.

* Max. load at the gear output.

(Motor power must be limited if necessary)

P 80 Planetary gear 1-3 stage 	n rpm	M Nm	n rpm	M Nm	n rpm	M Nm
	i=3.7	324	1.5	351	1.1	351
i=5.2	231	2.1	250	1.5	250	2.8
i=6.8	176	2.7	191	2.0	191	3.7
i=13.7	88	5.1	95	3.8	95	6.9
i=18.4	65	6.8	71	5.0	71	9.0
i=28.9	42	10.7	45	7.9	45	15.0
i=45.6	26	16.9	29	12.5	29	23.0
i=78.7	15	27.3	17	20.1	17	37.0
i=115	10	39.8	11	29.4	11	50*
i=169	7	50*	8	43.2	8	50*

Additional reductions upon request.

* Max. load at the gear output.

(Motor power must be limited if necessary)

Single-phase asynchronous motor

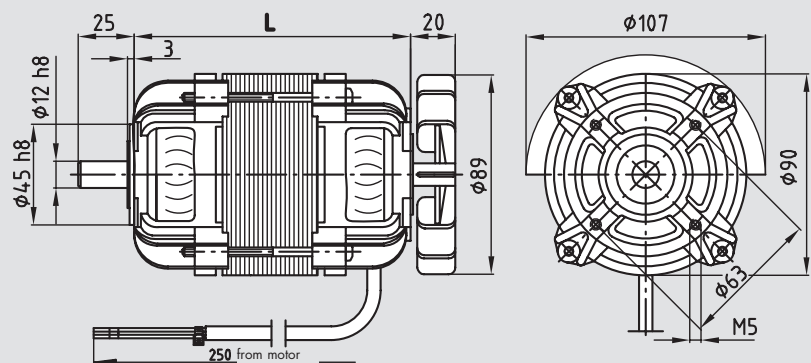
- Properties:**
- Connection: 230 V / 50 Hz AC system , optional designs for 110 V / 60 Hz or other voltages / frequencies
Running capacitor required
Cable connection, optional plug-in connector
 - Service life: 20,000 hours, S1 duty
 - Insulation mat. class: B, optional F
 - System of protection: IP 00 (open design)
 - Special model: Design for short-time duty with high performance
Alloy rotor for higher starting torque
 - Options: Thermal protection, special shafts, custom designed



Type	Name	U	AC voltage	Es 9040-2	Es 9060-2	Es 9080-2
	Nominal voltages	U	AC voltage	230	230	230
Specification	Nominal power	P_2	W	240	378	423
	Nominal speed	N_{nom}	rpm	2650	2650	2750
	Nominal torque	T_{nom}	cNm	86	136	147
	Starting torque	T_A	cNm	45	60	80
	Nominal current	I_{nom}	A	1.76	2.65	2.78
	No-load current	I_0	A	1.21	1.11	1.00
Characteristics	Locked rotor speed	n_{break}	rpm	2350	2500	2200
	Locked rotor torque	T_{break}	cNm	91	160	180
	Nominal efficiency	η	%	59	62	67
Connection	Terminal resistance	R	Ohm	26	16	12
	Input power	P_1	W	405	608	631
	Running capacitor	C	μF	12	16	20
Dynamics	Weight	m	kg	2.5	3.2	3.9
	Moment of inertia	J	gcm^2	1100	1532	1964
Thermal	Adm. ambient temperature	T_a	$^{\circ}C$	-20 to +40	-20 to +40	-20 to +40
	Max. adm. stator temperature	T_{max}	$^{\circ}C$	+120	+120	+120
Coupling	Shaft diameter	d	mm	12	12	12
	Max. axial force	F_a	N	65	65	65
	Max. radial force	F_r	N	700	700	700

Dimensions

Type	L / mm
Es 9040-2	122
Es 9060-2	142
Es 9080-2	162



System technology (tables next page)

Recommended combinations	Worm gear	SC 401
	Spur gear	M 10
	Planetary gear	P 80
Rotary encoder	RV	
Brake	B 200 B 220	
Electronics		

Gear unit combinations

• All torques are calculated with an duty factor of 1!



Type	Name Nominal voltage / AC voltage	Es 9040-2 230		Es 9060-2 230		Es 9080-2 230	
SC 401 Worm gear 1-stage 		n rpm	M Nm	n rpm	M Nm	n rpm	M Nm
	i=6.8	390	4.5	390	7.1	404	7.7
	i=8	331	5.1	331	8.1	344	8.7
	i=10	265	6.2	265	9.8	275	10.6
	i=12	221	6.7	221	10.6	229	11.5
	i=15	177	8.3	177	13.1	183	14.1
	i=20	133	10.5	133	16.6	138	17.9
	i=30	88	13.2	88	20.8	92	22.5
	i=40	66	15.1	66	23.9	69	25.9
	i=56	47	14.9	47	21.9*	49	21.9*
i=80	33	19.3	33	20.1*	34	20.1*	

Additional reductions upon request. * Max. load at the gear output.
(Motor power must be limited if necessary)

M 10 Spur gear 1-3 stage 		n rpm	M Nm	n rpm	M Nm	n rpm	M Nm
	i=5	530	3.9	530	6.1	550	6.6
	i=11	241	8.5	241	13.5	250	14.6
	i=17.9	148	13.9	148	21.9	154	23*
	i=25.9	102	18.9	102	29.9	106	30*
	i=42	63	30*	63	30*	65	30*
	i=75.1	35	30*	35	30*	37	30*
	i=98.6	27	30*	27	30*	28	30*

Additional reductions upon request. * Max. load at the gear output.
(Motor power must be limited if necessary)

P 80 Planetary gear 1-3 stage 		n rpm	M Nm	n rpm	M Nm	n rpm	M Nm
	i=3.7	716	2.5	716	4.0	743	4.4
	i=5.2	510	3.6	510	5.7	529	6.1
	i=6.8	390	4.7	390	7.4	404	8.0
	i=13.7	193	8.8	193	14.0	201	15.1
	i=18.4	144	11.9	144	18.8	149	20.0
	i=28.9	92	18.6	92	29.5	95	32.0
	i=45.6	58	29.4	58	46.5	60	50.0
	i=78.7	34	47.4	34	74.9	35	81.0
	i=115	23	69.2	23	109.5	24	118.3
	i=169	16	101.7	16	120*	16	120*

Additional reductions upon request. * Max. load at the gear output.
(Motor power must be limited if necessary)

Single-phase asynchronous motor

Properties: Connection: 230 V / 50 Hz AC system , optional designs for 110 V / 60 Hz or other voltages / frequencies
 Running capacitor required
 Cable connection, optional plug-in connector

Service life: 20,000 hours, S1 duty

Insulation mat. class: B, optional F

System of protection: IP 00 (open design)

Special model: Design for short-time duty with high performance
 Alloy rotor for higher starting torque

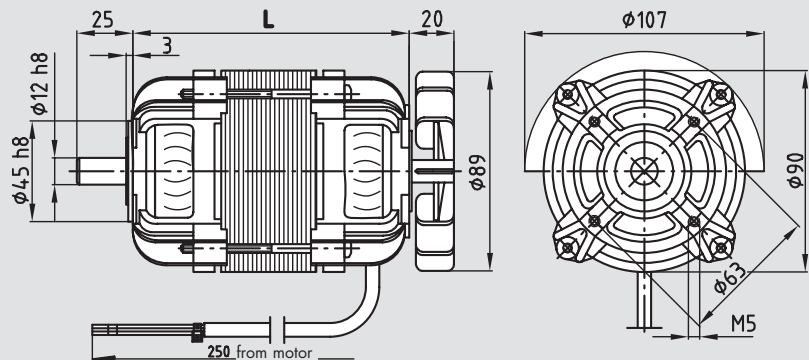
Options: Thermal protection, special shafts, custom designed



Type	Name	U	AC voltage	Es 9040-4	Es 9060-4	Es 9080-4
	Nominal voltages	U	AC voltage	230	230	230
Specification	Nominal power	P_2	W	114	143	209
	Nominal speed	N_{nom}	rpm	1300	1300	1300
	Nominal torque	T_{nom}	cNm	84	105	154
	Starting torque	T_A	cNm	33	55	70
	Nominal current	I_{nom}	A	1.06	1.15	1.58
	No-load current	I_0	A	0.79	0.61	0.69
Characteristics	Locked rotor speed	n_{break}	rpm	1250	1250	1250
	Locked rotor torque	T_{break}	cNm	93	125	175
	Nominal efficiency	η	%	47.5	54.0	57.5
Connection	Terminal resistance	R	Ohm	55	45	30
	Input power	P_1	W	239	266	363
	Running capacitor	C	μ F	6	8	10
Dynamics	Weight	m	kg	2.5	3.2	3.9
	Moment of inertia	J	gcm^2	1771	2468	3164
Thermal	Adm. ambient temperature	T_a	$^{\circ}$ C	-20 to +40	-20 to +40	-20 to +40
	Max. adm. stator temperature	T_{max}	$^{\circ}$ C	+120	+120	+120
Coupling	Shaft diameter	d	mm	12	12	12
	Max. axial force	F_a	N	65	65	65
	Max. radial force	F_r	N	700	700	700

Dimensions

Type	L / mm
Es 9040-4	122
Es 9060-4	142
Es 9080-4	162



System technology (tables next page)

Recommended combinations	Worm gear	SC 401
	Spur gear	M 10
	Planetary gear	P 80
Rotary encoder	RV	
Brake	B 200 B 220	
Electronics		

Gear unit combinations

- All torques are calculated with an duty factor of 1!



Type	Name Nominal voltage / AC voltage	Es 9040-4 230		Es 9060-4 230		Es 9080-4 230		
SC 401 Worm gear 1-stage 		n rpm	M Nm	n rpm	M Nm	n rpm	M Nm	
		i=6.8	191	4.4	191	5.5	191	8.06
		i=8	163	5.0	163	6.2	163	9.12
		i=10	130	6.0	130	7.6	130	11.1
		i=12	108	6.6	108	8.2	108	12.0
		i=15	87	8.1	87	10.1	87	14.8
		i=20	65	10.2	65	12.8	65	18.8
		i=30	43	12.9	43	16.1	43	23.6
		i=40	33	14.8	33	18.5	33	27.1
		i=56	23	14.6	23	18.2	23	21.9*
	i=80	16	18.8	16	20.1*	16	20.1*	

Additional reductions upon request.

* Max. load at the gear output.

(Motor power must be limited if necessary)

M 10 Spur gear 1-3 stage 		n rpm	M Nm	n rpm	M Nm	n rpm	M Nm	
		i=5	260	3.8	260	4.7	260	6.9
		i=11	118	8.3	118	10.4	118	15.2
		i=17.9	73	13.5	73	16.9	73	23*
		i=25.9	50	18.5	50	23.1	50	30*
		i=42	31	30*	31	30*	31	30*
		i=75.1	17	30*	17	30*	17	30*
		i=98.6	13	30*	13	30*	13	30*

Additional reductions upon request.

* Max. load at the gear output.

(Motor power must be limited if necessary)

P 80 Planetary gear 1-3 stage <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td></td> <td>1-stage</td> <td>2-stage</td> <td>3-stage</td> </tr> <tr> <td>X</td> <td>77</td> <td>99</td> <td>121</td> </tr> </table>		1-stage	2-stage	3-stage	X	77	99	121		n rpm	M Nm	n rpm	M Nm	n rpm	M Nm
		1-stage	2-stage	3-stage											
	X	77	99	121											
		i=3.7	351	2.5	351	3.1	351	4.6							
		i=5.2	250	3.5	250	4.4	250	6.4							
		i=6.8	191	4.6	191	5.7	191	8.4							
		i=13.7	95	8.6	95	10.8	95	15.8							
		i=18.4	71	11.6	71	14.5	71	21.0							
		i=28.9	45	18.2	45	22.8	45	33.0							
		i=45.6	29	28.7	29	35.9	29	53.0							
		i=78.7	17	46.3	17	57.8	17	85.0							
		i=115	11	67.6	11	84.5	11	120*							
	i=169	8	99.4	8	120*	8	120*								

Additional reductions upon request.

* Max. load at the gear output.

(Motor power must be limited if necessary)

Three-phase asynchronous motor

Properties:

Connection: 400 V / 50 Hz three-phase system
 Optional designs for other mains voltages / frequencies
 Optional design for a frequency converter with 3 x 230 V
 Cable connection, optional plug-in connector

Service life: 20,000 hours, S1 duty

Insulation mat. class: B, optional F

System of protection: IP 40, optional up to IP 65

Special model: Design for short-time duty with high performance

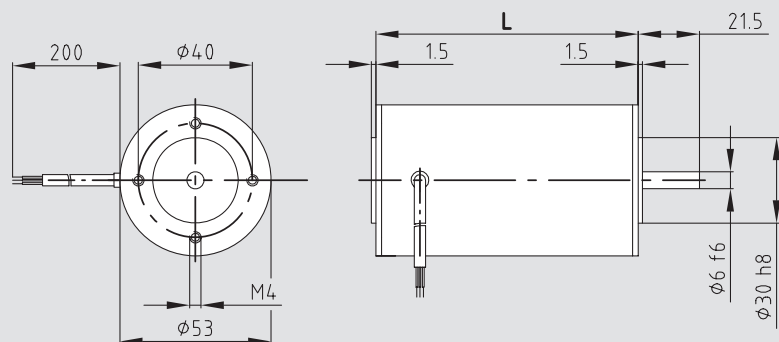
Options: Thermal protection, special shafts, special flanges, custom designed



Type	Name	U	AC voltage	D 542	D 562		
	Nominal voltages			400	400		
Specification	Nominal power	P_2	W	10	24		
	Nominal speed	N_{nom}	rpm	2650	2400		
	Nominal torque	T_{nom}	cNm	3.5	9.5		
	Starting torque	T_A	cNm	12.0	18.5		
	Nominal current	I_{nom}	mA	66	87		
	No-load current	I_0	mA	77	67		
Characteristics	Locked rotor speed	n_{break}	rpm	-	-		
	Locked rotor torque	T_{break}	cNm	-	-		
	Nominal efficiency	η	%	34	48		
Connection	Terminal resistance	R	Ohm	1287	982		
	Input power	P_1	W	28.5	49.5		
Dynamics	Weight	m	kg	0.7	1.0		
	Moment of inertia	J	gcm ²	135	200		
Thermal	Adm. ambient temperature	T_a	°C	-20 to +40	-20 to +40		
	Max. adm. stator temperature	T_{max}	°C	+120	+120		
Coupling	Shaft diameter	d	mm	6	6		
	Max. axial force	F_a	N	8	8		
	Max. radial force	F_r	N	100	100		

Dimensions

Type	L / mm
D 542	92
D 562	112



System technology (tables next page)

Recommended combinations	System technology			
	Worm gear	S 446	S 567	
Spur gear	Z 67	Z 5	Z 6	
Planetary gear	P 30			
Rotary encoder	RE 5	RI 5	RV	
Brake	B 3			
Electronics	FDS 1			

Gear unit combinations

• All torques are calculated with an duty factor of 1!



Additional recommended combinations with gear units: Z 5 (Page St-01)
 (Data upon request) Z 6 (Page St-02)
 S 567 (Page Sc-02)

Type	Name Nominal voltage / AC voltage	D 542 400		D 562 400			
S 446 Worm gear 1-stage 		n rpm	M Nm	n rpm	M Nm		
	i=2.25	1178	0.06	1067	0.17		
	i=5	530	0.13	480	0.35		
	i=7	379	0.17	343	0.45		
	i=10	265	0.22	240	0.61		
	i=15	177	0.28	160	0.77		
	i=25	106	0.37	96	1.00		
	i=30	88	0.39	80	1.05		
	i=40	66	0.36	60	0.99		
	i=50	53	0.58	48	1.0*		
i=60	44	0.55	40	1.48			

Additional reductions upon request. * Max. load at the gear output.
 (Motor power must be limited if necessary)

Z 67 Spur gear 1-6 stage 	n rpm	M Nm	n rpm	M Nm		
	i=5	530	0.14	480	0.35*	
i=10	265	0.29	240	0.35*		
i=12.5	212	0.35*	192	0.35*		
i=20	133	0.52	120	1.4*		
i=30	88	0.78	80	1.4*		
i=50	53	1.16	48	2.8*		
i=75	35	1.73	32	2.8*		
i=100	27	2.10	24	4*		
i=150	18	3.15	16	4*		
i=200	13	4*	12	4*		

Additional reductions upon request. * Max. load at the gear output.
 (Motor power must be limited if necessary)

P 30 Planet gear 1-3 stage 	n rpm	M Nm	n rpm	M Nm		
	i=3.7	716	0.10	649	0.28	
i=5.2	510	0.15	462	0.40		
i=6.8	390	0.19	353	0.52		
i=13.7	193	0.36	175	0.98		
i=18.4	144	0.48	130	1.31		
i=28.9	92	0.76	83	2.06		
i=45.6	58	1.20	53	2.25*		
i=78.7	34	1.93	30	4.5*		
i=115	23	2.82	21	4.5*		
i=169	16	4.5*	14	4.5*		

Additional reductions upon request. * Max. load at the gear output.
 (Motor power must be limited if necessary)

Three-phase asynchronous motor

Properties: Connection: 400 V / 50 Hz three-phase system
 Optional designs for other mains voltages / frequencies
 Optional design for a frequency converter with 3 x 230 V
 Cable connection, optional plug-in connector

Service life: 20,000 hours, S1 duty

Insulation mat. class: B, optional F

System of protection: IP 40, optional up to IP 65

Special model: Design for short-time duty with high performance

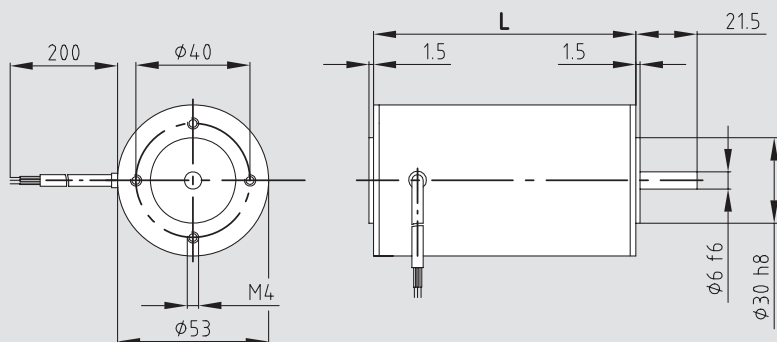
Options: Thermal protection, special shafts, special flanges, custom designed



Type	Name	U	AC voltage	D 544	D 564		
	Nominal voltages			400	400		
Specification	Nominal power	P_2	W	4	6		
	Nominal speed	N_{nom}	rpm	1250	1000		
	Nominal torque	T_{nom}	cNm	3	6		
	Starting torque	T_A	cNm	7.5	9.0		
	Nominal current	I_{nom}	mA	39	48		
	No-load current	I_0	mA	44	47		
Characteristics	Locked rotor speed	n_{break}	rpm	-	-		
	Locked rotor torque	T_{break}	cNm	-	-		
	Nominal efficiency	η	%	20	22		
Connection	Terminal resistance	R	Ohm	4404	3435		
	Input power	P_1	W	19.5	28.0		
Dynamics	Weight	m	kg	0.7	1.0		
	Moment of inertia	J	gcm ²	135	200		
Thermal	Adm. ambient temperature	T_a	°C	-20 to +40	-20 to +40		
	Max. adm. stator temperature	T_{max}	°C	+120	+120		
Coupling	Shaft diameter	d	mm	6	6		
	Max. axial force	F_a	N	8	8		
	max. radial force	F_r	N	100	100		

Dimensions

Type	L / mm
D 544	92
D 564	112



System technology (tables next page)

Recommended combinations	Worm gear	S 446	GS 1	
	Spur gear	Z 67	Z 5	Z 6
	Planetary gear	P 30	XX	
	Rotary encoder	RE 5	RI 5	
	Brake	B 3		
	Electronics	FDS 1		

Gear unit combinations

• All torques are calculated with an duty factor of 1!



Additional recommended combinations with gear units: Z 5 (Page St-01)
 (Data upon request) M 67 (Page St-08)
 GS 1 (Page Sc-05)

Type	Name Nominal voltage / AC voltage	D 544 400		D 564 400			
S 446 Worm gear 1-stage 		n rpm	M Nm	n rpm	M Nm		
	i=2.25	556	0.05	444	0.11		
	i=5	250	0.11	200	0.22		
	i=7	179	0.14	143	0.29		
	i=10	125	0.19	100	0.38		
	i=15	83	0.24	67	0.49		
	i=25	50	0.32	40	0.63		
	i=30	42	0.33	33	0.67		
	i=40	31	0.31	25	0.62		
	i=50	25	0.50	20	0.99		
i=60	21	0.47	17	0.94			

Additional reductions upon request.

Z 67 Spur gear 1-3 stage 	n rpm	M Nm	n rpm	M Nm		
	i=5	250	0.12	200	0.25	
i=10	125	0.25	100	0.35*		
i=12.5	100	0.31	80	0.35*		
i=20	63	0.44	50	0.89		
i=30	42	0.67	33	1.33		
i=50	25	0.99	20	1.98		
i=75	17	1.49	13	2.8*		
i=100	13	1.80	10	3.60		
i=150	8	4*	7	4*		
i=200	6	4*	5	4*		

Additional reductions upon request.

* Max. load at the gear output.

(Motor power must be limited if necessary)

P 30 Planetary gear 1-3 stage 	n rpm	M Nm	n rpm	M Nm		
	i=3.7	338	0.09	270	0.18	
i=5.2	240	0.12	192	0.25		
i=6.8	184	0.16	147	0.33		
i=13.7	91	0.31	73	0.62		
i=18.4	68	0.41	54	0.83		
i=28.9	43	0.65	35	1.30		
i=45.6	27	1.03	22	2.05		
i=78.7	16	1.65	13	3.31		
i=115	11	2.42	9	4.5*		
i=169	7	3.55	6	4.5*		

Additional reductions upon request.

* Max. load at the gear output.

(Motor power must be limited if necessary)

Three-phase asynchronous motor

Properties: Connection: 400 V / 50 Hz three-phase system
 Optional designs for other mains voltages / frequencies
 Optional design for a frequency converter with 3 x 230 V
 Standard connection using K22 type plug-in connectors

Service life: 20,000 hours, S1 duty

Insulation mat. class: B, optional F

System of protection: IP 44, optional up to IP 65

Special model: Design for short-time duty with high performance

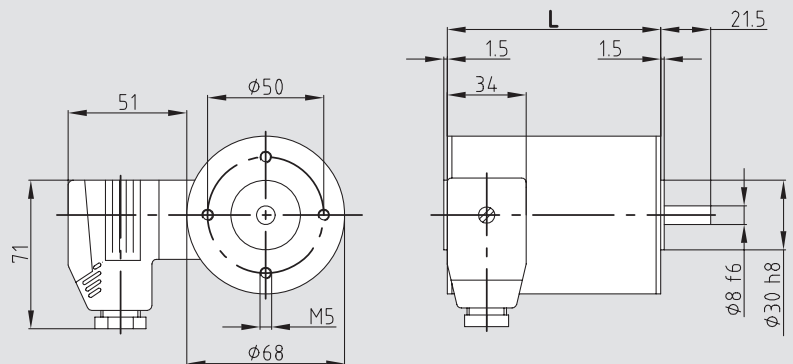
Options: Thermal protection, special shafts, special flanges, custom designed



Type	Name			D 642	D 662		
	Nominal voltages	U	AC voltage	400	400		
Specification	Nominal power	P_2	W	25.0	33.5		
	Nominal speed	N_{nom}	rpm	2750	2650		
	Nominal torque	T_{nom}	cNm	9	12		
	Starting torque	T_A	cNm	20.5	27.0		
	Nominal current	I_{nom}	mA	79	97		
	No-load current	I_0	mA	60	64		
Characteristics	Locked rotor speed	n_{break}	rpm	-	-		
	Locked rotor torque	T_{break}	cNm	-	-		
	Nominal efficiency	η	%	58	60		
Connection	Terminal resistance	R	Ohm	697	557		
	Input power	P_1	W	42.5	55.0		
Dynamics	Weight	m	kg	1.2	1.7		
	Moment of inertia	J	gcm ²	390	595		
Thermal	Adm. ambient temperature	T_a	°C	-20 to +40	-20 to +40		
	Max. adm. stator temperature	T_{max}	°C	+120	+120		
Coupling	Shaft diameter	d	mm	8	8		
	Max. axial force	F_a	N	20	20		
	Max. radial force	F_r	N	220	220		

Dimensions

Type	L / mm
D 642	92
D 662	112



System technology (tables next page)

Recommended combinations	Gearboxes			
	Worm gear	S 567	S 668	
Spur gear	Z 8	Z 89	M 189	
Planetary gear	P 50	P 60		
Options	Rotary encoder	RE 8	RI 6	RV
	Brake	B 3		
	Electronics	FDS 1		

Gear unit combinations

• All torques are calculated with an duty factor of 1!



Additional recommended combinations with gear units: Z 89 (Page St-05)
 (Data upon request) M 189 (Page St-09)
 S 668 (Page Sc-03)

Type	Name Nominal voltage / AC voltage	D 642 400		D 662 400		
S 567 Worm gear 1-stage 		n rpm	M Nm	n rpm	M Nm	
		i=3.6	764	0.2	736	0.3
		i=5	550	0.3	530	0.4
		i=10	275	0.5	265	0.7
		i=20	138	1.0	133	1.3
		i=24	115	1.0	110	1.4
		i=30	92	1.2	88	1.5
		i=40	69	1.4	66	1.9
	i=50	55	1.6	53	2.2	
	i=60	46	2.2	44	2.7*	

Additional reductions upon request. * Maximum load at the gear output.
 (Motor power must be limited if necessary)

Z 8 Spur gear 1-3 stage 	n rpm	M Nm	n rpm	M Nm	
		i=5.6	491	0.5	473
	i=13	212	1.1	204	1.4
	i=17.5	157	1.4	151	1.9
	i=25	110	2.0	106	2.7
	i=36.5	75	2.8	73	3.7
	i=49.5	56	3.8	54	5.0
	i=71	39	5.4	37	7.2
	i=96.5	28	7.0	27	9.4
	i=131	21	9.5	20	12*
	i=165	17	12*	16	12*

Additional reductions upon request. * Max. load at the gear output.
 (Motor power must be limited if necessary)

P 50 Planetary gear 1-3 stage 	n rpm	M Nm	n rpm	M Nm	
		i=3.7	743	0.3	716
	i=5.2	529	0.4	510	0.5
	i=6.8	404	0.5	390	0.7
	i=13.7	201	0.9	193	1.2
	i=18.4	149	1.2	144	1.7
	i=28.9	95	2.0	92	2.6
	i=45.6	60	3.1	58	4.1
	i=78.7	35	5.0	34	6.6
	i=115	24	7.2	23	9.7
	i=169	16	10.6	16	14.2

Additional reductions upon request.

Three-phase asynchronous motor

Properties: Connection: 400 V / 50 Hz three-phase system
 Optional designs for other mains voltages / frequencies
 Optional design for a frequency converter with 3 x 230 V
 Standard connection using K22 type plug-in connectors

Service life: 20,000 hours, S1 duty

Insulation mat.class: B, optional F

System of protection: IP 44, optional up to IP 65

Special model: Design for short-time duty with high performance

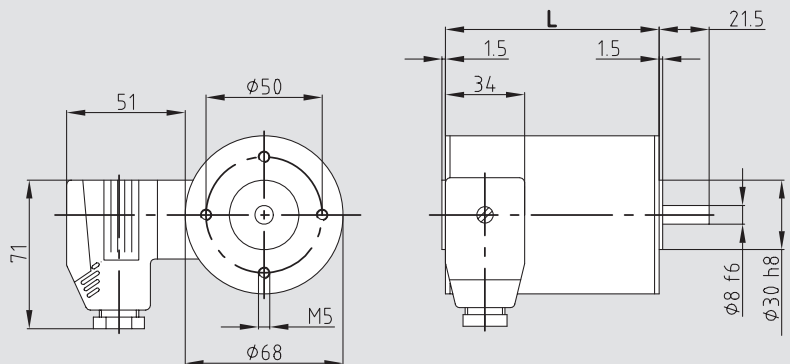
Options: Thermal protection, special shafts, special flanges, custom designed



Type	Name			D 644	D 664		
	Nominal voltages	U	AC voltage	400	400		
Specification	Nominal power	P ₂	W	13.5	12.5		
	Nominal speed	N _{nom}	rpm	1250	1350		
	Nominal torque	T _{nom}	cNm	10.5	9.0		
	Starting torque	T _A	cNm	18	24		
	Nominal current	I _{nom}	mA	75	82		
	No-load current	I ₀	mA	71	82		
Characteristics	Locked rotor speed	n _{break}	rpm	-	-		
	Locked rotor torque	T _{break}	cNm	-	-		
	Nominal efficiency	η	%	38.5	39.0		
Connection	Terminal resistance	R	Ohm	1333	1091		
	Input power	P ₁	W	35.0	32.5		
Dynamics	Weight	m	kg	1.2	1.7		
	Moment of inertia	J	gcm ²	390	595		
Thermal	Adm. ambient temperature	T _a	°C	-20 to +40	-20 to +40		
	Max. adm. stator temperature	T _{max}	°C	+120	+120		
Coupling	Shaft diameter	d	mm	8	8		
	Max. axial force	F _a	N	20	20		
	Max. radial force	F _r	N	220	220		

Dimensions

Type	L / mm
D 644	92
D 664	112



System technology (tables next page)

Recommended combinations	Worm gear			
		S 567		
	Z 6	Z 8	Z 89	
	P 50	P 60		
	Planetary gear			
	RE 6	RI 6	RV	
	B 3			
	FDS 1			

Gear unit combinations

• All torques are calculated with an duty factor of 1!



Additional recommended combinations with gear units: GS 3 (Page Sc-06)
 Z 8 (Page St-03)
 Z 89 (Page St-05)
 P60 (Page P-03)

Type	Name Nominal voltage / AC voltage	D 644 400		D 664 400		
S 567 Worm gear 1-stage 		n rpm	M Nm	n rpm	M Nm	
		i=3.6	347	0.3	375	0.2
		i=5	250	0.3	270	0.3
		i=10	125	0.6	135	0.5
		i=20	63	1.1	68	1.0
		i=24	52	1.2	56	1.0
		i=30	42	1.4	45	1.2
		i=40	31	1.7	34	1.4
		i=50	25	1.9	27	1.6
	i=60	21	2.5	23	2.2	

Additional reductions upon request.

Z 6 Spur gear 1-3 stage 	n rpm	M Nm	n rpm	M Nm	
		i=4.82	259	0.5	280
	i=10.4	120	1.0	130	0.8
	i=15.4	81	1.5	88	1.2
	i=20.5	61	1.9	66	1.7
	i=31.6	40	2.8	43	2.4
	i=48.9	26	4.4	28	3.7
	i=64.8	19	5.5	21	4.7
	i=86.1	15	7*	16	6.3
	i=117	11	7*	12	7*
	i=155	8	7*	9	7*

Additional reductions upon request.

* Max. load at the gear output.

(Motor power must be limited if necessary)

P 50 Planetary gear 1-3 stage 	n rpm	M Nm	n rpm	M Nm	
		i=3.7	338	0.3	365
	i=5.2	240	0.4	260	0.4
	i=6.8	184	0.6	199	0.5
	i=13.7	91	1.1	99	0.9
	i=18.4	68	1.4	73	1.2
	i=28.9	43	2.3	47	2.0
	i=45.6	27	3.6	30	3.1
	i=78.7	16	5.8	17	5.0
	i=115	11	8.5	12	7.2
	i=169	7	12.4	8	10.6

Additional reductions upon request.

Three-phase asynchronous motor

Properties: Connection: 400 V / 50 Hz three-phase system
 Optional designs for other mains voltages / frequencies
 Optional design for a frequency converter with 3 x 230 V
 Standard connection using K22 type plug-in connectors

Service life: 20,000 hours, S1 duty

Insulation mat. class: B, optional F

System of protection: IP 44, optional up to IP 65

Special model: Design for short-time duty with high performance

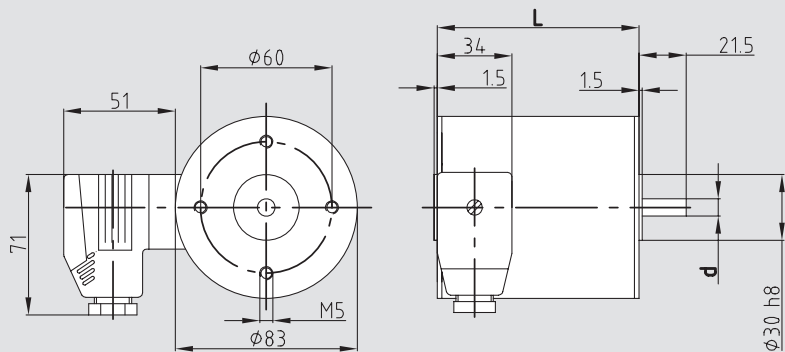
Options: Thermal protection, special shafts, special flanges, custom designed



Type	Name	U	AC voltage	D 842	D 862	D 882
	Nominal voltages			400	400	400
Specification	Nominal power	P_2	W	55	67	91
	Nominal speed	N_{nom}	rpm	2600	2750	2750
	Nominal torque	T_{nom}	cNm	20.0	23.5	31.5
	Starting torque	T_A	cNm	67	67	110
	Nominal current	I_{nom}	mA	187	194	260
	No-load current	I_0	mA	143	131	179
Characteristics	Locked rotor speed	n_{break}	rpm	-	-	-
	Locked rotor torque	T_{break}	cNm	-	-	-
	Nominal efficiency	η	%	58	64	70
Connection	Terminal resistance	R	Ohm	219	219	128
	Input power	P_1	W	95	105	131
Dynamics	Weight	m	kg	1,9	2,5	3,4
	Moment of inertia	J	gcm ²	750	1050	1400
Thermal	Adm. ambient temperature	T_a	°C	-20 to +40	-20 to +40	-20 to +40
	Max. adm. stator temperature	T_{max}	°C	+120	+120	+120
Coupling	Shaft diameter	d	mm	8	8	10
	Max. axial force	F_a	N	40	40	40
	Max. radial force	F_r	N	400	400	400

Dimensions

Type	L / mm
D 842	92
D 862	112
D 882	132



System technology (tables next page)

Recommended combinations	System technology (tables next page)			
	Worm gear	S 668	S 769	
Spur gear	M 189	Z 8	M 10	
Planetary gear	P 60	P 80		
Rotary encoder	RE 8	RI 8	RV	
Brake	B 3	B 200		
Electronics	FDS 1			

Gear unit combinations

• All torques are calculated with an duty factor of 1!



Additional recommended combinations with gear units: Z 8 (Page St-03)
 (Data upon request) M 10 (Page St-07)
 S 769 (Page Sc-04)
 P80 (Page P-04)

Type	Name Nominal voltage / AC voltage	D 842 400		D 862 400		D 882 400		
		n rpm	M Nm	n rpm	M Nm	n rpm	M Nm	
S 668 Worm gear 1-stage		i=2.5	1040	0.4	1100	0.5	1100	0.6
		i=5	520	0.8	550	0.9	550	1.2
		i=7	371	1.1	393	1.2	393	1.7
		i=10	260	1.4	275	1.6	275	2.1
		i=15	173	1.9	183	2.3	183	3.0
		i=20	130	2.3	138	2.7	138	3.6
		i=30	87	2.8	92	3.3	92	4.4
		i=50	52	3.5	55	4.1	55	5.5
		i=70	37	4.8	39	5.6	39	7.5*
		i=100	26	5.6	28	7.4*	28	7.4*

Additional reductions upon request. * Maximum load at the gear output.
 (Motor power must be limited if necessary)

Type	Name	D 842 400		D 862 400		D 882 400		
		n rpm	M Nm	n rpm	M Nm	n rpm	M Nm	
M 189 Spur gear 1-5 stage		i=4	650	0.7	688	0.9	688	1.1
		i=8.4	310	1.4	327	1.6	327	2.2
		i=13	200	2.1	212	2.5	212	3.4
		i=25.2	103	3.7	109	4.4	109	5.9
		i=38.9	67	5.8	71	6.8	71	9.1
		i=75.6	34	10.0	36	11.7	36	15*
		i=97.3	27	12.8	28	15*	28	15*
		i=158	16	15*	17	15*	17	15*
		i=349	7	15*	8	15*	8	15*
		i=875	3	15*	3	15*	3	15*

Additional reductions upon request. * Max. load at the gear output.
 (Motor power must be limited if necessary)

Type	Name	D 842 400		D 862 400		D 882 400		
		n rpm	M Nm	n rpm	M Nm	n rpm	M Nm	
P 60 Planetary gear 1-3 stage		i=3.7	703	0.6	743	0.7	743	0.9
		i=5.2	500	0.8	529	1.0	529	1.3
		i=6.8	382	1.1	404	1.3	404	1.7
		i=13.7	190	2.1	201	2.4	201	3.2
		i=18.4	141	2.8	149	3.2	149	4.3
		i=28.9	90	4.3	95	5.1	95	6.8
		i=45.6	57	6.8	60	8.0	60	10.8
		i=78.7	33	11.0	35	12.9	35	17.4
		i=115	23	16.1	24	18.9	24	25.4
		i=169	15	23.7	16	27.8	16	37.3

Additional reductions upon request.

Three-phase asynchronous motor

Properties: Connection: 400 V / 50 Hz three-phase system
 Optional designs for other mains voltages / frequencies
 Optional design for a frequency converter with 3 x 230 V
 Standard connection using K22 type plug-in connectors

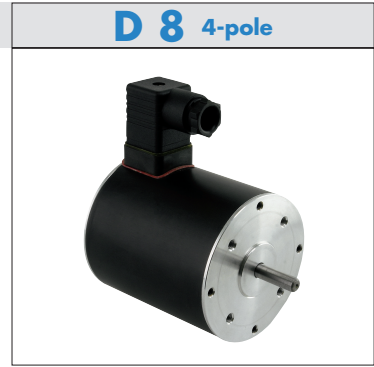
Service life: 20,000 hours, S1 duty

Insulation mat. class: B, optional F

System of protection: IP 44, optional up to IP 65

Special model: Design for short-time duty with high performance

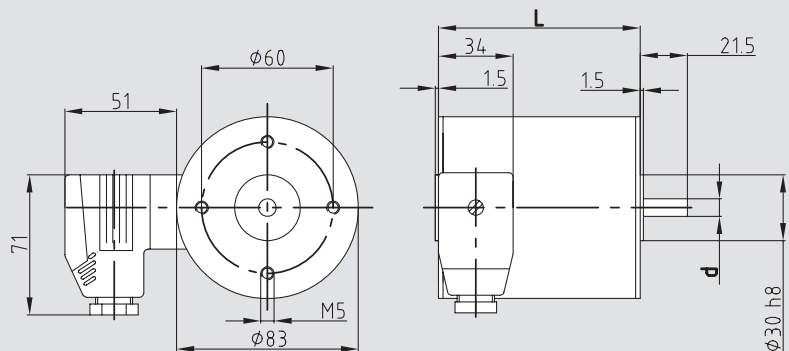
Options: Thermal protection, special shafts, special flanges, custom designed



Type	Name	U	AC voltage	D 844	D 864	D 884
	Nominal voltages			400	400	400
Specification	Nominal power	P ₂	W	27	31	49
	Nominal speed	n _{nom}	rpm	1150	1350	1300
	Nominal torque	T _{nom}	cNm	22	22	36
	Starting torque	T _A	cNm	52	55	87
	Nennstrom	I _{nenn}	mA	142	154	226
	Leerlaufstrom	I ₀	mA	125	144	204
	Characteristics	Locked rotor speed	n _{break}	rpm	-	-
Locked rotor torque		T _{break}	cNm	-	-	-
Nominal efficiency		η	%	43.0	51.0	52.5
Connection	Terminal resistance	R	Ohm	528	439	257
	Input power	P ₁	W	62	60	93
Dynamics	Weight	m	kg	1.9	2.5	3.4
	Moment of inertia	J	gcm ²	750	1050	1400
Thermal	Adm. ambient temperature	T _a	°C	-20 to +40	-20 to +40	-20 to +40
	Max. adm. stator temperature	T _{max}	°C	+120	+120	+120
Coupling	Shaft diameter	d	mm	8	8	10
	Max. axial force	F _a	N	20	20	40
	Max. radial force	F _r	N	220	220	400

Dimensions

Type	L / mm
D 844	92
D 864	112
D 884	132



System technology (tables next page)

Recommended combinations	System technology			
	Worm gear	S 668	S 769	
Spur gear	M 189	Z 8	M 10	
Planetary gear	P 60	P 80		
Rotary encoder	RE 8	RI 8	RV	
Brake	B 3	B 200		
Electronics	FDS 1			

Gear unit combinations

• All torques are calculated with an duty factor of 1!



Additional recommended combinations with gear units: M 10 (Page St-07)
 Z 8 (Page St-03)
 S 769 (Page Sc-04)
 P80 (Page P-04)

Type	Name Nominal voltage / AC voltage	D 844 400		D 864 400		D 884 400		
S 668 Worm gear 1-stage		n rpm	M Nm	n rpm	M Nm	n rpm	M Nm	
		i=2.5	460	0.5	540	0.5	520	0.7
		i=5	230	0.9	270	0.9	260	1.4
		i=7	164	1.2	193	1.2	186	1.9
		i=10	115	1.5	135	1.5	130	2.4
		i=15	77	2.1	90	2.1	87	3.5
		i=20	58	2.5	68	2.5	65	4.1
		i=30	38	3.1	45	3.1	43	5.1
		i=50	23	3.9	27	3.9	26	6.3
		i=70	16	5.2	19	5.2	19	8.6
i=100	12	6.2	14	6.2	13	10.1		

Additional reductions upon request.

M 189 Spur gear 1-3 stage		n rpm	M Nm	n rpm	M Nm	n rpm	M Nm														
		<table border="1"> <tr> <td>X</td> <td>60</td> <td>60</td> <td>60</td> <td>80</td> <td>80</td> <td>80</td> </tr> <tr> <td>Y</td> <td>44</td> <td>44</td> <td>44</td> <td>64</td> <td>64</td> <td>64</td> </tr> </table>	X	60	60	60	80	80	80	Y	44	44	44	64	64	64	i=4	288	0.8	338	0.8
X	60	60	60	80	80	80															
Y	44	44	44	64	64	64															
	i=8.4	137	1.5	161	1.5	155	2.5														
	i=13	88	2.3	104	2.3	100	3.8														
	i=25.2	46	4.1	54	4.1	52	6.7														
	i=38.9	30	6.3	35	6.3	33	10*														
	i=75.6	15	11.0	18	11.0	17	15*														
	i=97.3	12	14.1	14	14.1	13	15*														
	i=158	7	15*	9	15*	8	15*														
	i=349	3	15*	4	15*	4	15*														
	i=875	1	15*	2	15*	1	15*														

Additional reductions upon request.

* Max. load at the gear output.

(Motor power must be limited if necessary)

P 60 Planetary gear 1-3 stage		n rpm	M Nm	n rpm	M Nm	n rpm	M Nm				
		<table border="1"> <tr> <td>X</td> <td>46</td> <td>62</td> <td>78</td> </tr> </table>	X	46	62	78	i=3.7	311	0.7	365	0.7
X	46	62	78								
	i=5.2	221	0.9	260	0.9	250	1.5				
	i=6.8	169	1.2	199	1.2	191	2.0				
	i=13.7	84	2.3	99	2.3	95	3.7				
	i=18.4	63	3.0	73	3.0	71	5.0				
	i=28.9	40	4.8	47	4.8	45	7.8				
	i=45.6	25	7.5	30	7.5	29	12.3				
	i=78.7	15	12.1	17	12.1	17	19.8				
	i=115	10	17.7	12	17.7	11	29.0				
	i=169	7	26.0	8	26.0	8	42.6				

Additional reductions upon request.

Three-phase asynchronous motor

Properties:

Connection: 400 V / 50 Hz three-phase system
 Optional designs for other mains voltages / frequencies
 Optional design for a frequency converter with 3 x 230 V
 Standard connection using K22 type plug-in connectors

Service life: 20,000 hours, S1 duty

Insulation mat. class: F

System of protection: IP 44, optional up to IP 65

Special model: Design for short-time duty with high performance

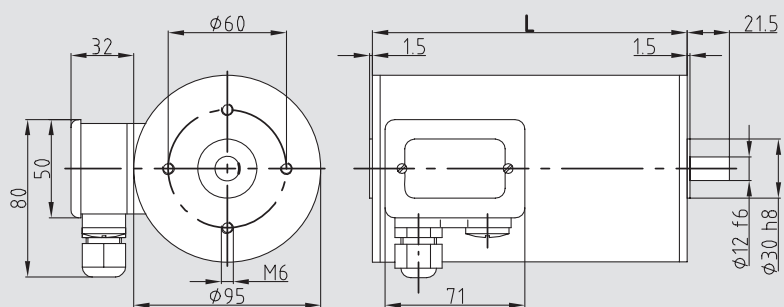
Options: Thermal protection, special shafts, special flanges, custom designed



Type	Name			D 9562	D 9582		
	Nominal voltages	U	AC voltage	400	400		
Specification	Nominal power	P ₂	W	171	230		
	Nominal speed	n _{nom}	rpm	2700	2750		
	Nominal torque	T _{nom}	cNm	60	80		
	Starting torque	T _A	cNm	153	270		
	Nominal current	I _{nom}	mA	453	592		
	No-load current	I ₀	mA	270	375		
Characteristics	Locked rotor speed	n _{break}	rpm	-	-		
	Locked rotor torque	T _{break}	cNm	-	-		
	Nominal efficiency	η	%	67.0	71.5		
Connection	Terminal resistance	R	Ohm	107	62		
	Input power	P ₁	W	255	321		
Dynamics	Weight	m	kg	3,7	4,5		
	Moment of inertia	J	gcm ²	1532	1964		
Thermal	Adm. ambient temperature	T _a	°C	-20 to +40	-20 to +40		
	Max. adm. stator temperature	T _{max}	°C	+120	+120		
Coupling	Shaft diameter	d	mm	12	12		
	Max. axial force	F _a	N	65	65		
	Max. radial force	F _r	N	700	700		

Dimensions

Type	L / mm
D 9562	140
D 9582	160



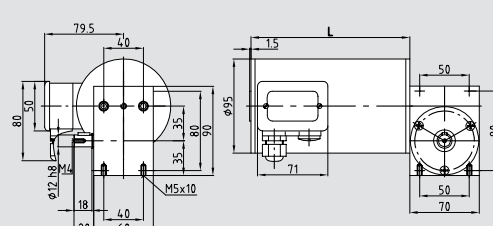
System technology (tables next page)

Recommended combination	Worm gear	S 769	
	Spur gear	M 10	
	Planetary gear	P 80	
	Rotary encoder	RE 95	RI 95
	Brake	B 200	B 220
	Electronics	FDS 1	

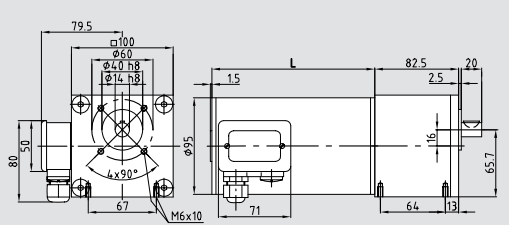
Gear unit combinations

• All torques are calculated with an duty factor of 1!



Type	Name Nominal voltage / AC voltage	D 9562 400		D 9582 400	
S 769 Worm gear 1-stage 		n rpm	M Nm	n rpm	M Nm
	i=2.8	964	1.4	982	1.8
	i=5	540	2.3	550	3.1
	i=7.3	370	3.1	377	4.1
	i=10	270	4.0	275	5.3
	i=12	225	4.5	229	6.0
	i=15	180	5.1	183	6.8
	i=20	135	6.1	138	8.2
	i=30	90	7.2	92	9.6
	i=40	68	8.2	69	10.9
i=58	47	10.4	47	13.9	

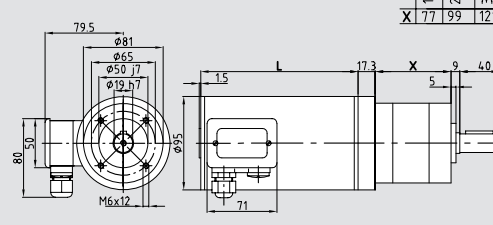
Additional reductions upon request.

M 10 Spur gear 1-3 stage 	n rpm	M Nm	n rpm	M Nm
	i=5	540	2.7	550
i=11	245	5.9	250	7.9
i=17.9	151	9.7	154	12.9
i=25.9	104	13.2	106	17.6
i=42	64	21.4	65	28.6
i=75.1	36	30*	37	30*
i=98.6	27	30*	28	30*
i=145	19	30*	19	30*
i=177	15	30*	16	30*
i=260	10	30*	11	30*

Additional reductions upon request.

* Max. load at the gear output.

(Motor power must be limited if necessary)

P 80 Planetary gear 1-3 stage 	n rpm	M Nm	n rpm	M Nm
	i=3.7	730	1.8	743
i=5.2	519	2.5	529	3.3
i=6.8	397	3.3	404	4.4
i=13.7	197	6.2	201	8.2
i=18.4	147	8.3	149	11.0
i=28.9	93	13.0	95	17.3
i=45.6	59	20.5	60	27.4
i=78.7	34	33.1	35	44.1
i=115	23	48.3	24	64.4
i=169	16	71.0	16	94.6

Additional reductions upon request.

Three-phase asynchronous motor

Properties: Connection: 400 V / 50 Hz three-phase system
 Optional designs for other mains voltages / frequencies
 Optional design for a frequency converter with 3 x 230 V
 Standard connection using K22 type plug-in connectors

Service life: 20,000 hours, S1 duty

Insulation mat. class: F

System of protection: IP 44, optional up to IP 65

Special model: Design for short-time duty with high performance

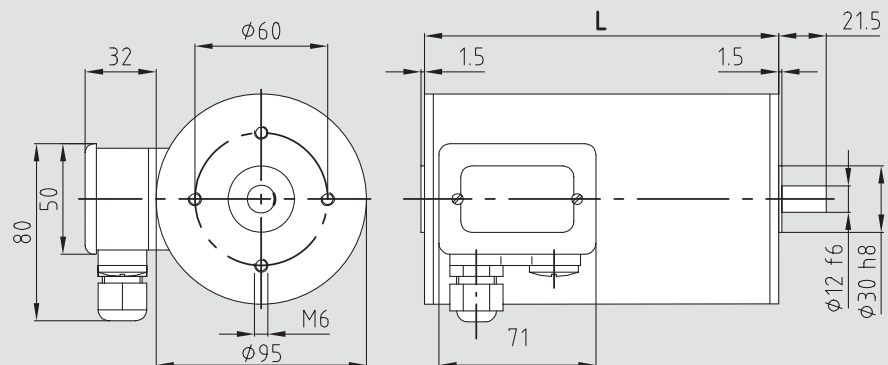
Options: Thermal protection, special shafts, special flanges, custom designed



Type	Name			D 9564	D 9584		
	Nominal voltages	U	AC voltage	400	400		
Specification	Nominal power	P ₂	W	94	85		
	Nominal speed	n _{nom}	rpm	1300	1400		
	Nominal torque	T _{nom}	cNm	69	58		
	Starting torque	T _A	cNm	128	200		
	Nominal current	I _{nom}	mA	312	348		
	No-load current	I ₀	mA	236	322		
Characteristics	Locked rotor speed	n _{break}	rpm	-	-		
	Locked rotor torque	T _{break}	cNm	-	-		
	Nominal efficiency	η	%	58.5	61.5		
Connection	Terminal resistance	R	Ohm	231	141		
	Input power	P ₁	W	131	138		
Dynamics	Weight	m	kg	3.7	4.5		
	Moment of inertia	J	gcm ²	2468	3164		
Thermal	Adm. ambient temperature	T _a	°C	-20 to +40	-20 to +40		
	Max. adm. stator temperature	T _{max}	°C	+120	+120		
Coupling	Shaft diameter	d	mm	12	12		
	Max. axial force	F _a	N	65	65		
	Max. radial force	F _r	N	700	700		

Dimensions

Type	L / mm
D 9564	140
D 9584	160



System technology (tables next page)

Recommended combinations	Worm gear	S 769	
	Spur gear	M 10	
	Planetary gear	P 80	
	Rotary encoder	RE 95	RI 95
	Brake	B 200	B 220
	Electronics	FDS 1	

Gear unit combinations

• All torques are calculated with an duty factor of 1!



Type	Name Nominal voltage / AC voltage	D 9564 400		D 9584 400			
S 769 Worm gear 1-stage 		n rpm	M Nm	n rpm	M Nm		
	i=2.8	464	1.6	500	1.3		
	i=5	260	2.7	280	2.3		
	i=7.3	178	3.6	192	3.0		
	i=10	130	4.6	140	3.8		
	i=12	108	5.2	117	4.4		
	i=15	87	5.9	93	5.0		
	i=20	65	7.0	70	5.9		
	i=30	43	8.3	47	7.0		
	i=40	33	9.4	35	7.9		
i=58	22	12.0	24	10.1			

Additional reductions upon request.

M 10 Spur gear 1-3 stage 	n rpm	M Nm	n rpm	M Nm		
	i=5	260	3.1	280	2.6	
i=11	118	6.8	127	5.7		
i=17.9	73	11.1	78	9.3		
i=25.9	50	15.2	54	12.8		
i=42	31	24.6	33	20.7		
i=75.1	17	30*	19	30*		
i=98.6	13	30*	14	30*		
i=145	9	30*	10	30*		
i=177	7	30*	8	30*		
i=260	5	30*	5	30*		

Additional reductions upon request.

* Max. load at the gear output.

(Motor power must be limited if necessary)

P 80 Planetary gear 1-3 stage 	n rpm	M Nm	n rpm	M Nm		
	i=3.7	351	2.0	378	1.7	
i=5.2	250	2.9	269	2.4		
i=6.8	191	3.8	206	3.2		
i=13.7	95	7.1	102	6.0		
i=18.4	71	9.5	76	8.0		
i=28.9	45	15.0	48	12.6		
i=45.6	29	23.6	31	19.8		
i=78.7	17	38.0	18	32.0		
i=115	11	55.5	12	46.7		
i=169	8	81.6	8	68.6		

Additional reductions upon request.

Three-phase asynchronous motor

Properties:

Connection: 400 V / 50 Hz three-phase system
 Optional designs for other mains voltages / frequencies
 Optional design for a frequency converter with 3 x 230 V
 Standard connection using terminal boxes

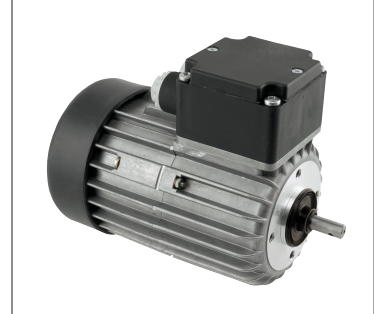
Service life: 20,000 hours, S1 duty

Insulation mat. class: B, optional F

System of protection: IP 44, optional up to IP 65

Special model: Design for short-time duty with high performance

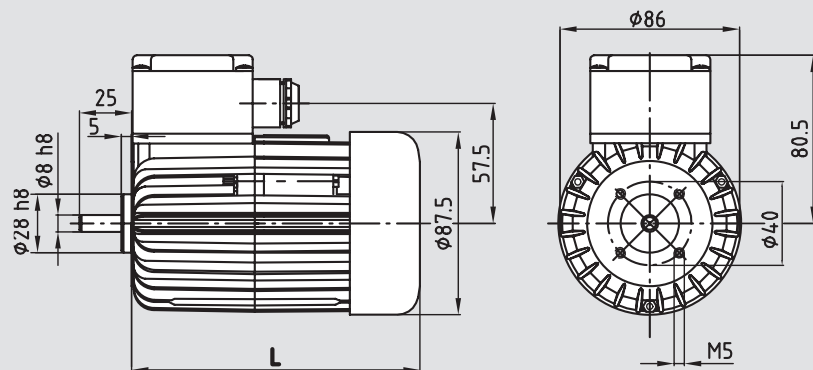
Options: Thermal protection, special shafts, custom designed, foot mounting



Type	Name			Dg 7120-2	Dg 7140-2	Dg 7150-2
	Nominal voltages	U	AC voltage	400	400	400
Specification	Nominal power	P ₂	W	36	92	110
	Nominal speed	n _{nom}	rpm	2550	2550	2550
	Nominal torque	T _{nom}	cNm	13	34	41
	Starting torque	T _A	cNm	30	88	114
	Nominal current	I _{nom}	mA	177	344	394
	No-load current	I ₀	mA	206	340	378
Characteristics	Locked rotor speed	n _{break}	rpm	-	-	-
	Locked rotor torque	T _{break}	cNm	-	-	-
	Nominal efficiency	η	%	41.5	51.5	55.0
Connection	Terminal resistance	R	Ohm	632	215	165
	Input power	P ₁	W	85	177	199
Dynamics	Weight	m	kg	1,2	1,7	2,0
	Moment of inertia	J	gcm ²	219	376	455
Thermal	Adm. ambient temperature	T _a	°C	-20 to +40	-20 to +40	-20 to +40
	Max. adm. stator temperature	T _{max}	°C	+120	+120	+120
Coupling	Shaft diameter	d	mm	8	8	8
	Max. axial force	F _a	N	20	20	20
	Max. radial force	F _r	N	220	220	220

Dimensions

Type	L / mm
Dg 7120-2	118
Dg 7140-2	138
Dg 7150-2	138



System technology (tables next page)

Recommended combinations	Worm gear	GS 3	S 668	
	Spur gear	M 189	Z 8	M 10
	Planetary gear	P 50	P 60	
	Rotary encoder	RE 8		
	Brake	B 200		
	Electronics	FDS 1		

Gear unit combinations

• All torques are calculated with an duty factor of 1!



Additional recommended combinations with gear units: Z 8 (Page St-03)
 (Data upon request) M 10 (Page St-07)
 S 769 (Page Sc-04)
 P60 (Page P-03)

Type	Name Nominal voltage / AC voltage	Dg 7120-2		Dg 7140-2		Dg 7150-2	
		n rpm	M Nm	n rpm	M Nm	n rpm	M Nm
GS 3 Worm gear 1-stage 		1020	0.3	1020	0.7	1020	0.8
	i=2.5	510	0.5	510	1.3	510	1.6
	i=5	364	0.7	364	1.8	364	2.2
	i=7	255	0.9	255	2.3	255	2.8
	i=10	170	1.2	170	3.3	170	3.9
	i=15	128	1.5	128	3.9	128	4.7
	i=20	85	1.8	85	4.8	85	5.8
	i=30	51	2.3	51	6.0	51	7.2
	i=50	36	3.1	36	8.1	36	9*
	i=70	26	3.6	26	7.4*	26	7.4*

Additional reductions upon request. * Maximum load at the gear output.
 (Motor power must be limited if necessary)

Type	Name	Dg 7120-2		Dg 7140-2		Dg 7150-2	
		n rpm	M Nm	n rpm	M Nm	n rpm	M Nm
M 189 Spur gear 1-3 stage 		638	0.5	638	1.2	638	1.5
	i=4	304	0.9	304	2.3	304	2.8
	i=8.4	196	1.4	196	3.6	196	4.4
	i=13	101	2.4	101	6.3	101	7.6
	i=25.2	66	3.7	66	9.8	66	10*
	i=38.9	34	6.5	34	15*	34	15*
	i=75.6	26	8.3	26	15*	26	15*
	i=97.3	16	13.6	16	15*	16	15*
	i=158	7	15*	7	15*	7	15*
	i=349	3	15*	3	15*	3	15*
	i=875						

Additional reductions upon request. * Max. load at the gear output.
 (Motor power must be limited if necessary)

Type	Name	Dg 7120-2		Dg 7140-2		Dg 7150-2	
		n rpm	M Nm	n rpm	M Nm	n rpm	M Nm
P 50 Planetary gear 1-3 stage 		689	0.4	689	1.0	689	1.2
	i=3.7	490	0.5	490	1.4	490	1.7
	i=5.2	375	0.7	375	1.8	375	2.2
	i=6.8	186	1.3	186	3.5	186	4.2
	i=13.7	139	1.8	139	4.7	139	5.7
	i=18.4	88	2.8	88	7.4	88	8.9
	i=28.9	56	4.4	56	11.6	56	12*
	i=45.6	32	7.2	32	18.7	32	22.6
	i=78.7	22	10.5	22	25*	22	25*
	i=115	15	15.4	15	25*	15	25*
	i=169						

Additional reductions upon request. * Max. load at the gear output.
 (Motor power must be limited if necessary)

Three-phase asynchronous motor

Properties:

Connection: 400 V / 50 Hz three-phase system
 Optional designs for other mains voltages / frequencies
 Optional design for a frequency converter with 3 x 230 V
 Standard connection using terminal boxes

Service life: 20,000 hours, S1 duty

Insulation mat.class: B, optional F

System of protection: IP 44, optional up to IP 65

Special model: Design for short-time duty with high performance

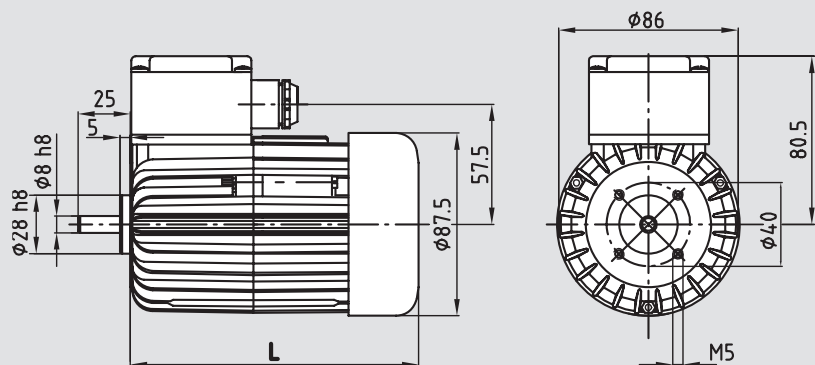
Options: Thermal protection, special shafts, custom designed, foot mounting



Type	Name			Dg 7140-4	Dg 7150-4		
	Nominal voltages	U	AC voltage	400	400		
Specification	Nominal power	P ₂	W	27,5	30,0		
	Nominal speed	n _{nom}	rpm	1250	1250		
	Nominal torque	T _{nom}	cNm	21	23		
	Starting torque	T _A	cNm	60	69		
	Nominal current	I _{nom}	mA	207	229		
	No-load current	I ₀	mA	215	235		
Characteristics	Locked rotor speed	n _{break}	rpm	-	-		
	Locked rotor torque	T _{break}	cNm	-	-		
	Nominal efficiency	η	%	32.0	31.5		
Connection	Terminal resistance	R	Ohm	513	464		
	Input power	P ₁	W	86	96		
Dynamics	Weight	m	kg	1.7	2.0		
	Moment of inertia	J	gcm ²	376	455		
Thermal	Adm. ambient temperature	T _a	°C	-20 to +40	-20 to +40		
	Max. adm. stator temperature	T _{max}	°C	+120	+120		
Coupling	Shaft diameter	d	mm	8	8		
	Max. axial force	F _a	N	20	20		
	Max. radial force	F _r	N	220	220		

Dimensions

Type	L / mm
Dg 7140-4	138
Dg 7150-4	138



System technology (tables next page)

Recommended combinations	Worm gear	GS 3	S 668	
	Spur gear	M 189	Z 8	M 10
	Planetary gear	P 60	P 50	
	Rotary encoder	RE 8		
	Brake	B 200		
	Electronics	FDS 1		

Gear unit combinations

All torques are calculated with an duty factor of 1!



Additional recommended combinations with gear units: Z 8 (Page St-03)
 S 769 (Page Sc-04)
 P50 (Page P-02)

Type	Name Nominal voltage / AC voltage	Dg 7140-4		Dg 7150-4			
		n rpm	M Nm	n rpm	M Nm		
GS 3 Worm gear 1-stage		400	400				
	i=2.5	500	0.4	500	0.4		
	i=5	250	0.7	250	0.8		
	i=10	125	1.3	125	1.4		
	i=15	83	1.9	83	2.1		
	i=24	52	2.3	52	2.5		
	i=30	42	2.8	42	3.1		
	i=38	33	3.2	33	3.5		
	i=55	23	3.5	23	3.8		
	i=75	17	3.9	17	4.3		
i=100	13	5.3	13	5.8			

Additional reductions upon request.

Type	Name Nominal voltage / AC voltage	Dg 7140-4		Dg 7150-4																								
		n rpm	M Nm	n rpm	M Nm																							
M 189 Spur gear 1-3 stage <table border="1" style="display: inline-table; margin-top: 10px;"> <tr> <td></td> <td>1-stage</td> <td>2-stage</td> <td>3-stage</td> <td>4-stage</td> <td>5-stage</td> <td>6-stage</td> </tr> <tr> <td>X</td> <td>60</td> <td>60</td> <td>60</td> <td>80</td> <td>80</td> <td>80</td> </tr> <tr> <td>Y</td> <td>44</td> <td>44</td> <td>44</td> <td>64</td> <td>64</td> <td>64</td> </tr> </table>		1-stage	2-stage	3-stage	4-stage	5-stage	6-stage	X	60	60	60	80	80	80	Y	44	44	44	64	64	64		400	400				
		1-stage	2-stage	3-stage	4-stage	5-stage	6-stage																					
	X	60	60	60	80	80	80																					
	Y	44	44	44	64	64	64																					
	i=4	313	0.8	313	0.8																							
	i=8.4	149	1.4	149	1.6																							
	i=13	96	2.2	96	2.5																							
	i=25.2	50	3.9	50	4.3																							
	i=38.9	32	6.0	32	6.6																							
	i=75.6	17	10.5	17	11.5																							
	i=97.3	13	13.5	13	14.8																							
	i=158	8	15*	8	15*																							
i=349	4	15*	4	15*																								
i=875	1	15*	1	15*																								

Additional reductions upon request.

* Max. load at the gear output.

(Motor power must be limited if necessary)

Type	Name Nominal voltage / AC voltage	Dg 7140-4		Dg 7150-4											
		n rpm	M Nm	n rpm	M Nm										
P 60 Planetary gear 1-3 stage <table border="1" style="display: inline-table; margin-top: 10px;"> <tr> <td></td> <td>1-stage</td> <td>2-stage</td> <td>3-stage</td> </tr> <tr> <td>X</td> <td>56</td> <td>70</td> <td>84</td> </tr> </table>		1-stage	2-stage	3-stage	X	56	70	84		400	400				
		1-stage	2-stage	3-stage											
	X	56	70	84											
	i=3.7	338	0.6	338	0.7										
	i=5.2	240	0.9	240	1.0										
	i=6.8	184	1.1	184	1.3										
	i=13.7	91	2.2	91	2.4										
	i=18.4	68	2.9	68	3.2										
	i=28.9	43	4.6	43	5.0										
	i=45.6	27	7.2	27	7.9										
i=78.7	16	11.6	16	12.7											
i=115	11	16.9	11	18.5											
i=169	7	24.8	7	27.2											

Additional reductions upon request.

Three-phase asynchronous motor

Properties: Connection: 400 V / 50 Hz three-phase system
 Optional designs for other mains voltages / frequencies
 Optional design for a frequency converter with 3 x 230 V
 Standard connection using K22 type plug-in connectors

Service life: 20,000 hours, S1 duty

Insulation mat. class: F

System of protection: IP 00 (open design)

Special model: Design for short-time duty with high performance

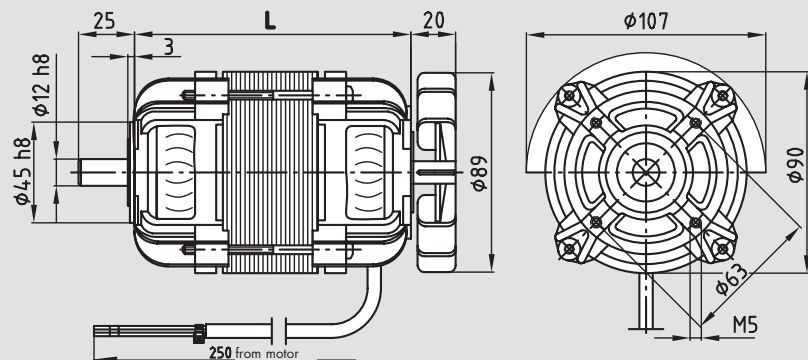
Options: Thermal protection, special shafts, custom designed



Type	Name			Ds 9040-2	Ds 9060-2	Ds 9080-2
	Nominal voltages	U	AC voltage	400	400	400
Specification	Nominal power	P ₂	W	250	375	420
	Nominal speed	n _{nom}	rpm	2750	2750	2750
	Nominal torque	T _{nom}	cNm	89	133	146
	Starting torque	T _A	cNm	210	310	410
	Nominal current	I _{nom}	mA	960	1050	1090
	No-load current	I ₀	mA	845	865	750
Characteristics	Locked rotor speed	n _{break}	rpm	-	-	-
	Locked rotor torque	T _{break}	cNm	-	-	-
	Nominal efficiency	η	%	64	70	72
Connection	Terminal resistance	R	Ohm	35	52	37
	Input power	P ₁	W	390	535	582
Dynamics	Weight	m	kg	2.5	3.2	3.9
	Moment of inertia	J	gcm ²	1100	1532	1964
Thermal	Adm. ambient temperature	T _a	°C	-20 to +40	-20 to +40	-20 to +40
	Max. adm. stator temperature	T _{max}	°C	+120	+120	+120
Coupling	Shaft diameter	d	mm	12	12	12
	Max. axial force	F _a	N	65	65	65
	Max. radial force	F _r	N	700	700	700

Dimensions

Type	L / mm
Ds 9040-2	121
Ds 9060-2	141
Ds 9080-2	161



System technology (tables next page)

Recommended combinations	Worm gear	SC 401
	Spur gear	M 10
	Planetary gear	P 80
Rotary encoder	RE 95	RI 95
Brake	B 200	B 220
Electronics	FDS 1	

Gear unit combinations

• All torques are calculated with an duty factor of 1!



Type	Name Nominal voltage / AC voltage	Ds 9040-2 400		Ds 9060-2 400		Ds 9080-2 400	
SC 401 Worm gear 1-stage 		n rpm	M Nm	n rpm	M Nm	n rpm	M Nm
	i=6.8	404	4.7	404	7.0	404	7.6
	i=8	344	5.3	344	7.9	344	8.6
	i=10	275	6.4	275	9.6	275	10.5
	i=12	229	6.9	229	10.4	229	11.4
	i=15	183	8.5	183	12.8	183	14.0
	i=20	138	10.9	138	16.2	138	17.8
	i=30	92	13.6	92	20.3	92	22.3
i=40	69	15.7	69	23.4	69	28.3*	

Additional reductions upon request. * Maximum load at the gear output.
(Motor power must be limited if necessary)

M 10 Spur gear 1-3 stage 	n rpm		M Nm		n rpm		M Nm	
		i=5	550	4.0	550	6.0	550	6.6
	i=11	250	8.8	250	13.2	250	14.5	
	i=17.9	154	14.3	154	21.4	154	23*	
	i=25.9	106	19.6	106	29.3	106	30*	
	i=42	65	30*	65	30*	65	30*	
	i=75.1	37	30*	37	30*	37	30*	

Additional reductions upon request. * Max. load at the gear output.
(Motor power must be limited if necessary)

P 80 Planetary gear 1-3 stage 	n rpm		M Nm		n rpm		M Nm	
		i=3.7	743	2.6	743	3.9	743	4.3
	i=5.2	529	3.7	529	5.5	529	6.1	
	i=6.8	404	4.8	404	7.2	404	7.9	
	i=13.7	201	9.1	201	13.7	201	15.0	
	i=18.4	149	12.3	149	18.4	149	20.1	
	i=28.9	95	19.3	95	28.8	95	31.6	
	i=45.6	60	30.4	60	45.5	60	49.9	
	i=78.7	35	49.0	35	73.3	35	80.4	
	i=115	24	71.6	24	107.1	24	117.5	
	i=169	16	105.3	16	120*	16	120*	

Additional reductions upon request. * Max. load at the gear output.
(Motor power must be limited if necessary)

Three-phase asynchronous motor

Properties: Connection: 400 V / 50 Hz three-phase system
 Optional designs for other mains voltages / frequencies
 Optional design for a frequency converter with 3 x 230 V
 Standard connection using K22 type plug-in connectors

Service life: 20,000 hours, S1 duty

Insulation mat. class: F

System of protection: IP 00 (open design)

Special model: Design for short-time duty with high performance

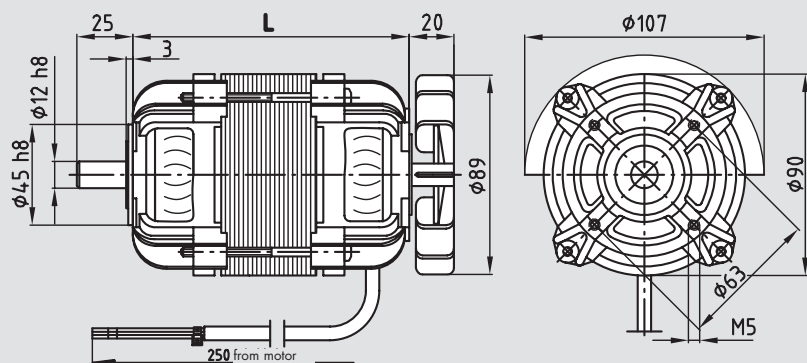
Options: Thermal protection, special shafts, custom designed



Type	Name			Ds 9040-4	Ds 9060-4	Ds 9080-4
	Nominal voltages	U	AC voltage	400	400	400
Specification	Nominal power	P_2	W	124	170	220
	Nominal speed	n_{nom}	rpm	1250	1350	1350
	Nominal torque	T_{nom}	cNm	94	125	160
	Starting torque	T_A	cNm	140	200	280
	Nominal current	I_{nom}	mA	474	620	670
	No-load current	I_0	mA	388	480	606
Characteristics	Locked rotor speed	n_{break}	rpm	-	-	-
	Locked rotor torque	T_{break}	cNm	-	-	-
	Nominal efficiency	η	%	50	58	70
Connection	Terminal resistance	R	Ohm	200	64	48
	Input power	P_1	W	246	295	315
Dynamics	Weight	m	kg	2.5	3.2	3.9
	Moment of inertia	J	gcm ²	1771	2468	3164
Thermal	Adm. ambient temperature	T_a	°C	-20 to +40	-20 to +40	-20 to +40
	Max. adm. stator temperature	T_{max}	°C	+120	+120	+120
Coupling	Shaft diameter	d	mm	12	12	12
	Max. axial force	F_a	N	65	65	65
	Max. radial force	F_r	N	700	700	700

Dimensions

Type	L / mm
Ds 9040-4	121
Ds 9060-4	141
Ds 9080-4	161



System technology (tables next page)

Recommended combinations	Worm gear	SC 401
	Spur gear	M 10
	Planetary gear	P 80
Rotary encoder	RE 95	RI 95
Brake	B 200	B 220
Electronics	FDS 1	

Gear unit combinations

All torques are calculated with an duty factor of 1!



Type	Name Nominal voltage / AC voltage	Ds 9040-4 400		Ds 9060-4 400		Ds 9080-4 400	
		n rpm	M Nm	n rpm	M Nm	n rpm	M Nm
SC 401 Worm gear 1-stage 		i=6.8	184 4.9	199 6.5	199 8.4		
		i=8	156 5.6	169 7.4	169 9.5		
		i=10	125 6.8	135 9.0	135 11.5		
		i=12	104 7.3	113 9.8	113 12.5		
		i=15	83 9.0	90 12.0	90 15.4		
		i=20	63 11.5	68 15.3	68 19.5		
		i=30	42 14.4	45 19.1	45 24.5		
		i=40	31 16.5	34 22.0	34 28.2		

Additional reductions upon request.

Type	Name	Ds 9040-4 400		Ds 9060-4 400		Ds 9080-4 400	
		n rpm	M Nm	n rpm	M Nm	n rpm	M Nm
M 10 Spur gear 1-3 stage 		i=5	250 4.2	270 5.6	270 7.2		
		i=11	114 9.3	123 12.4	123 15.8		
		i=17.9	70 15.1	75 20.1	75 23*		
		i=25.9	48 20.7	52 27.5	52 30*		
		i=42	30 30*	32 30*	32 30*		
		i=75.1	17 30*	18 30*	18 30*		

Additional reductions upon request. * Max. load at the gear output.

(Motor power must be limited if necessary)

Type	Name	Ds 9040-4 400		Ds 9060-4 400		Ds 9080-4 400	
		n rpm	M Nm	n rpm	M Nm	n rpm	M Nm
P 80 Planetary gear 1-3 stage 		i=3.7	338 2.8	365 3.7	365 4.7		
		i=5.2	240 3.9	260 5.2	260 6.7		
		i=6.8	184 5.1	199 6.8	199 8.7		
		i=13.7	91 9.7	99 12.8	99 16.4		
		i=18.4	68 13.0	73 17.3	73 22.1		
		i=28.9	43 20.4	47 27.1	47 34.7		
		i=45.6	27 32.1	30 42.8	30 54.7		
		i=78.7	16 51.8	17 68.9	17 88.1		
		i=115	11 75.7	12 100.6	12 120*		
		i=169	7 111.2	8 120*	8 120*		

Additional reductions upon request. * Max. load at the gear output.

(Motor power must be limited if necessary)

Reversible (Υ - Δ) Asynchronous motor

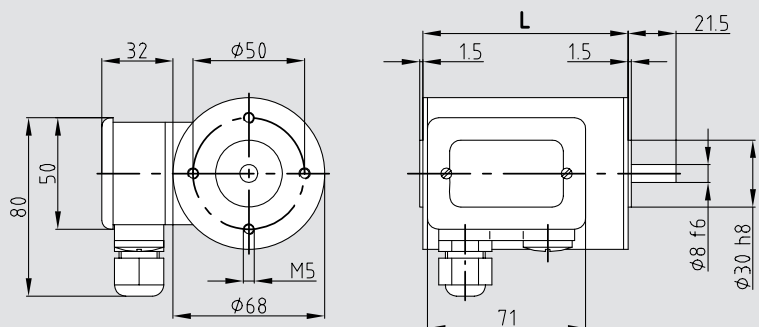
Properties:	Connection:	230 V / 50 Hz (running capacitor required) or 400 V / 50 Hz three-phase system Connection using K4 terminal boxes
	Service life:	20,000 hours, S1 duty
	Insulation mat.class:	B, optional F
	System of protection:	IP 44, optional up to IP 65
	Special model:	Design for short-time duty with high performance
	Options:	Thermal protection, special shafts, special flanges, custom designed



Type	Name			KD 642	KD 642	KD 662	KD 662
	Nominal voltages	U	AC voltage	230	400	230	400
Specification	Nominal power	P_2	W	20.5	25.0	34.0	33.5
	Nominal speed	n_{nom}	rpm	2750	2750	2650	2650
	Nominal torque	T_{nom}	cNm	7.0	8.5	12.5	12.0
	Starting torque	T_A	cNm	4.0	20.5	3.5	27.0
	Nominal current	I_{nom}	mA	171	79	290	97
	No-load current	I_0	mA	82	60	145	64
Characteristics	Locked rotor speed	n_{break}	rpm	2400	-	2300	-
	Locked rotor torque	T_{break}	cNm	11	-	19	-
	Nominal efficiency	η	%	51.5	58.5	51.0	60.5
Connection	Terminal resistance	R	Ohm	240	697	195	557
	Input power	P_1	W	39.5	42.5	66.5	55.0
	Running capacitor	C	μ F	2.5	-	3.0	-
Dynamics	Weight	m	kg	1.2	1.2	1.7	1.7
	Moment of inertia	J	gcm ²	390	390	595	595
Thermal	Adm. ambient temperature	T_a	$^{\circ}$ C	-20 to +40	-20 to +40	-20 to +40	-20 to +40
	Max. adm. stator temperature	T_{max}	$^{\circ}$ C	+120	+120	+120	+120
Coupling	Shaft diameter	d	mm	8	8	8	8
	Max. axial force	F_a	N	20	20	20	20
	Max. radial force	F_r	N	220	220	220	220

Dimensions

Type	L / mm
KD 642	92
KD 662	112



System technology (tables next page)

Recommended combinations	Worm gear	S 567		
	Spur gear	Z 8	Z 6	Z 89
	Planetary gear	P 50		
	Rotary encoder	RE 6	RI 6	
	Brake	B 3		
	Electronics			

Gear unit combinations

• All torques are calculated with an duty factor of 1!



Additional recommended combinations with gear units: Z 6 (Page St-02)
 (Data upon request) Z 89 (Page St-05)
 S 668 (Page Sc-03)

Type	Name Nominal voltage / AC voltage	KD 642 230		KD 642 400		KD 662 230		KD 662 400	
		n rpm	M Nm	n rpm	M Nm	n rpm	M Nm	n rpm	M Nm
S 567 Worm gear 1-stage 	i=3.6	764	0.2	764	0.2	736	0.3	736	0.3
	i=5	550	0.2	550	0.3	530	0.4	530	0.4
	i=10	275	0.4	275	0.5	265	0.7	265	0.7
	i=20	138	0.8	138	0.9	133	1.4	133	1.3
	i=24	115	0.8	115	1.0	110	1.4	110	1.4
	i=30	92	0.9	92	1.1	88	1.6	88	1.5
	i=40	69	1.1	69	1.4	66	2.0	66	1.9
	i=50	55	1.3	55	1.5	53	2.3	53	2.5
	i=60	46	1.7	46	2.0	44	2.7*	44	2.7*

Additional reductions upon request. * Maximum load at the gear output.
 (Motor power must be limited if necessary)

Type	Name	KD 642 230		KD 642 400		KD 662 230		KD 662 400	
		n rpm	M Nm	n rpm	M Nm	n rpm	M Nm	n rpm	M Nm
Z 8 Spur gear 1-3 stage 	i=5.6	491	0.4	491	0.4	473	0.6	473	0.6
	i=13	212	0.8	212	1.0	204	1.5	204	1.4
	i=17.5	157	1.1	157	1.3	151	2.0	151	1.9
	i=25	110	1.6	110	1.9	106	2.8	106	2.7
	i=36.5	75	2.2	75	2.6	73	3.9	73	3.7
	i=49.5	56	2.9	56	3.6	54	5.3	54	5.0
	i=71	39	4.2	39	5.1	37	7.5	37	7.2
	i=96.5	28	5.5	28	6.6	27	9.8	27	9.4
	i=131	21	7.4	21	9.0	20	12*	20	12*
	i=165	17	9.4	17	11.4	16	12*	16	12*

Additional reductions upon request. * Max. load at the gear output.
 (Motor power must be limited if necessary)

Type	Name	KD 642 230		KD 642 400		KD 662 230		KD 662 400	
		n rpm	M Nm	n rpm	M Nm	n rpm	M Nm	n rpm	M Nm
P 50 Planetary gear 1-3 stage 	i=3.7	743	0.2	743	0.3	716	0.4	716	0.4
	i=5.2	529	0.3	529	0.4	510	0.5	510	0.5
	i=6.8	404	0.4	404	0.5	390	0.7	390	0.7
	i=13.7	201	0.7	201	0.9	193	1.3	193	1.2
	i=18.4	149	1.0	149	1.2	144	1.7	144	1.7
	i=28.9	95	1.5	95	1.8	92	2.7	92	2.6
	i=45.6	60	2.4	60	2.9	58	4.3	58	4.1
	i=78.7	35	3.9	35	4.7	34	6.9	34	6.6
	i=115	24	5.6	24	6.8	23	10.1	23	9.7
	i=169	16	8.3	16	10.1	16	14.8	16	14.2

Additional reductions upon request.

Reversible (Y-Δ) Asynchronous motor

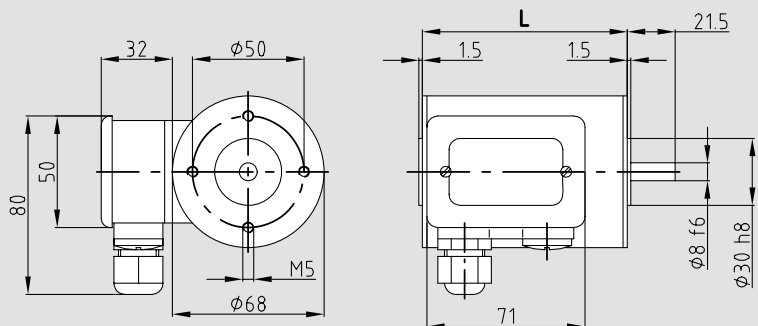
Properties: Connection: 230 V / 50 Hz (running capacitor required) or 400 V / 50 Hz three-phase system
 Connection using K4 terminal boxes
 Service life: 20,000 hours, S1 duty
 Insulation mat. class: B, optional F
 System of protection: IP 44, optional up to IP 65
 Special model: Design for short-time duty with high performance
 Options: Thermal protection, special shafts, special flanges, custom designed



Type	Name			KD 644	KD 644	KD 664	KD 664
	Nominal voltages	U	AC voltage	230	400	230	400
Specification	Nominal power	P ₂	W	9.5	11.5	11.0	12.5
	Nominal speed	n _{nom}	rpm	1300	1350	1250	1350
	Nominal torque	T _{nom}	cNm	7.0	8.0	9.5	9.0
	Starting torque	T _A	cNm	7	18	8	24
	Nominal current	I _{nom}	mA	153	75	185	82
	No-load current	I ₀	mA	123	71	140	82
Characteristics	Locked rotor speed	n _{break}	rpm	950	-	950	-
	Locked rotor torque	T _{break}	cNm	12	-	13	-
	Nominal efficiency	η	%	27.5	33.0	34.0	38.5
Connection	Terminal resistance	R	Ohm	438	1333	364	1091
	Input power	P ₁	W	34	35	32	32.5
	Running capacitor	C	μF	2,5	-	3.0	-
Dynamics	Weight	m	kg	1.2	1.2	1.7	1.7
	Moment of inertia	J	gcm ²	390	390	595	595
Thermal	Adm. ambient temperature	T _a	°C	-20 to +40	-20 to +40	-20 to +40	-20 to +40
	Max. adm. stator temperature	T _{max}	°C	+120	+120	+120	+120
Coupling	Shaft diameter	d	mm	8	8	8	8
	Max. axial force	F _a	N	20	20	20	20
	Max. radial force	F _r	N	220	220	220	220

Dimensions

Type	L / mm
KD 644	92
KD 664	112



System technology (tables next page)

Recommended combinations	Worm gear	S 567		
	Spur gear	Z 8	Z 6	Z 89
	Planetary gear	P 50		
	Rotary encoder	RE 6	RI 6	
	Brake	B 3		
	Electronics			

Gear unit combinations



• All torques are calculated with an duty factor of 1!

Additional recommended combinations with gear units: Z 6 (Page St-02)
 (Data upon request) Z 89 (Page St-05)
 S 668 (Page Sc-03)

Type	Name Nominal voltage / AC voltage	KD 644 230		KD 644 400		KD 664 230		KD 664 400	
		n rpm	M Nm	n rpm	M Nm	n rpm	M Nm	n rpm	M Nm
S 567 Worm gear 1-stage 	i=3.6	361	0.2	375	0.2	347	0.2	375	0.2
	i=5	260	0.2	270	0.3	250	0.3	270	0.3
	i=10	130	0.4	135	0.4	125	0.5	135	0.5
	i=20	65	0.8	68	0.9	63	1.0	68	1.0
	i=24	54	0.8	56	0.9	52	1.1	56	1.0
	i=30	43	0.9	45	1.0	42	1.2	45	1.2
	i=40	33	1.1	34	1.3	31	1.5	34	1.4
	i=50	26	1.3	27	1.4	25	1.7	27	1.6
	i=60	22	1.7	23	1.9	21	2.3	23	2.2

Additional reductions upon request.

Type	Name	KD 644 230		KD 644 400		KD 664 230		KD 664 400	
		n rpm	M Nm	n rpm	M Nm	n rpm	M Nm	n rpm	M Nm
Z 8 Spur gear 1-3 stage 	i=5.6	232	0.4	241	0.4	223	0.5	241	0.5
	i=13	100	0.8	104	0.9	96	1.1	104	1.1
	i=17.5	74	1.1	77	1.3	71	1.5	77	1.4
	i=25	52	1.6	54	1.8	50	2.1	54	2.0
	i=36.5	36	2.2	37	2.5	34	2.9	37	2.8
	i=49.5	26	2.9	27	3.4	25	4.0	27	3.8
	i=71	18	4.2	19	4.8	18	5.7	19	5.4
	i=96.5	13	5.5	14	6.3	13	7.4	14	7.0
	i=131	10	7.4	10	8.5	10	12*	10	12*
	i=165	8	9.4	8	10.7	8	12*	8	12*

Additional reductions upon request.

* Max. load at the gear output.

(Motor power must be limited if necessary)

Type	Name	KD 644 230		KD 644 400		KD 664 230		KD 664 400	
		n rpm	M Nm	n rpm	M Nm	n rpm	M Nm	n rpm	M Nm
P 50 Planetary gear 1-3 stage 	i=3.7	351	0.2	365	0.2	338	0.3	365	0.3
	i=5.2	250	0.3	260	0.3	240	0.4	260	0.4
	i=6.8	191	0.4	199	0.4	184	0.5	199	0.5
	i=13.7	95	0.7	99	0.8	91	1.0	99	0.9
	i=18.4	71	1.0	73	1.1	68	1.3	73	1.2
	i=28.9	45	1.5	47	1.7	43	2.1	47	2.0
	i=45.6	29	2.4	30	2.7	27	3.2	30	3.1
	i=78.7	17	3.9	17	4.4	16	5.2	17	5.0
	i=115	11	5.6	12	6.4	11	7.6	12	7.2
	i=169	8	8.3	8	9.5	7	11.2	8	10.6

Additional reductions upon request.

Reversible (Υ - Δ) Asynchronous motor

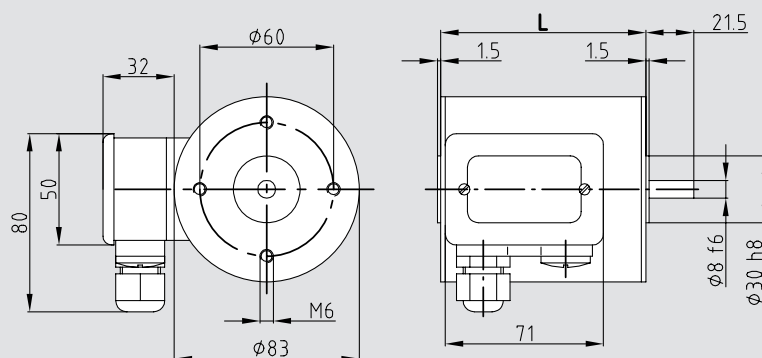
Properties:	Connection:	230 V / 50 Hz (running capacitor required) or 400 V / 50 Hz three-phase system Connection using K4 terminal boxes
	Service life:	20,000 hours, S1 duty
	Insulation mat. class:	B, optional F
	System of protection:	IP 44, optional up to IP 65
	Special model:	Design for short-time duty with high performance
	Options:	Thermal protection, special shafts, special flanges, custom designed



Type	Name			KD 842	KD 842	KD 862	KD 862
	Nominal voltages	U	AC voltage	230	400	230	400
Specification	Nominal power	P_2	W	48	55	43	67
	Nominal speed	n_{nom}	rpm	2700	2600	2600	2750
	Nominal torque	T_{nom}	cNm	17.0	20.5	15.5	23.5
	Starting torque	T_A	cNm	11.5	66.5	14.0	66.5
	Nominal current	I_{nom}	mA	337	187	331	194
	No-load current	I_0	mA	179	143	145	131
Characteristics	Locked rotor speed	n_{break}	rpm	2250	-	1850	-
	Locked rotor torque	T_{break}	cNm	25	-	25	-
	Nominal efficiency	η	%	65.5	58.0	57.0	64.0
Connection	Terminal resistance	R	Ohm	110	219	110	219
	Input power	P_1	W	73.5	95	74.5	105
	Running capacitor	C	μ F	4.0	-	5.0	-
Dynamics	Weight	m	kg	1.9	1.9	2.5	2.5
	Moment of inertia	J	gcm ²	750	750	1050	1050
Thermal	Adm. ambient temperature	T_a	$^{\circ}$ C	-20 to +40	-20 to +40	-20 to +40	-20 to +40
	Max. adm. stator temperature	T_{max}	$^{\circ}$ C	+120	+120	+120	+120
Coupling	Shaft diameter	d	mm	8	8	8	8
	Max. axial force	F_a	N	20	20	20	20
	Max. radial force	F_r	N	220	220	220	220

Dimensions

Type	L / mm
KD 842	92
KD 862	112



System technology (tables next page)

Recommended combinations	Gear types			
	Worm gear	S 668	GS 3	
Spur gear	Z 8	M 189		
Planetary gear	P 60	P 50		
Rotary encoder	RE 8	RI 8		
Brake	B 3	B 200	B 220	
Electronics				

Gear unit combinations

• All torques are calculated with an duty factor of 1!



Additional recommended combinations with gear units: GS 3 (Page Sc-06)
 M 189 (Page St-09)
 P50 (Page P-02)

Type	Name Nominal voltage / AC voltage	KD 842 230		KD 842 400		KD 862 230		KD 862 400	
		n rpm	M Nm	n rpm	M Nm	n rpm	M Nm	n rpm	M Nm
S 668 Worm gear 1-stage 	i=2.5	1080	0.3	1040	0.4	1040	0.3	1100	0.5
	i=5	540	0.7	520	0.8	520	0.6	550	0.9
	i=7	386	0.9	371	1.1	371	0.8	393	1.2
	i=10	270	1.2	260	1.4	260	1.1	275	1.6
	i=15	180	1.6	173	2.0	173	1.5	183	2.3
	i=20	135	1.9	130	2.3	130	1.8	138	2.7
	i=30	90	2.4	87	2.9	87	2.2	92	3.3
	i=50	54	3.0	52	3.6	52	2.7	55	4.1
	i=70	39	4.0	37	4.9	37	3.7	39	5.6

Additional reductions upon request.

Type	Name Nominal voltage / AC voltage	KD 842 230		KD 842 400		KD 862 230		KD 862 400	
		n rpm	M Nm	n rpm	M Nm	n rpm	M Nm	n rpm	M Nm
Z 8 Spur gear 2-4 stage 	i=5.6	482	0.9	464	1.0	464	0.8	491	1.2
	i=13	208	2.0	200	2.4	200	1.8	212	2.7
	i=17.5	154	2.7	149	3.2	149	2.4	157	3.7
	i=25	108	3.8	104	4.6	104	3.5	110	5.3
	i=36.5	74	5.3	71	6.4	71	4.8	75	7.3
	i=49.5	55	7.2	53	8.6	53	6.5	56	9.9
	i=71	38	10.3	37	10.5*	37	9.4	39	10.5*
	i=96.5	28	12*	27	12*	27	12*	28	12*
	i=131	21	12*	20	12*	20	12*	21	12*
	i=165	16	12*	16	12*	16	12*	17	12*

Additional reductions upon request.

* Max. load at the gear output.

(Motor power must be limited if necessary)

Type	Name Nominal voltage / AC voltage	KD 842 230		KD 842 400		KD 862 230		KD 862 400	
		n rpm	M Nm	n rpm	M Nm	n rpm	M Nm	n rpm	M Nm
P 60 Planetary gear 1-3 stage 	i=3.7	730	0.5	703	0.6	703	0.5	743	0.7
	i=5.2	519	0.7	500	0.9	500	0.6	529	1.0
	i=6.8	397	0.9	382	1.1	382	0.8	404	1.3
	i=13.7	197	1.7	190	2.1	190	1.6	201	2.4
	i=18.4	147	2.3	141	2.8	141	2.1	149	3.2
	i=28.9	93	3.7	90	4.4	90	3.4	95	5.1
	i=45.6	59	5.8	57	7.0	57	5.3	60	8.0
	i=78.7	34	9.4	33	11.3	33	8.5	35	12.9
	i=115	23	13.7	23	16.5	23	12.5	24	18.9
	i=169	16	20.1	15	24.3	15	18.3	16	27.8

Additional reductions upon request.

Reversible (Υ - Δ) Asynchronous motor

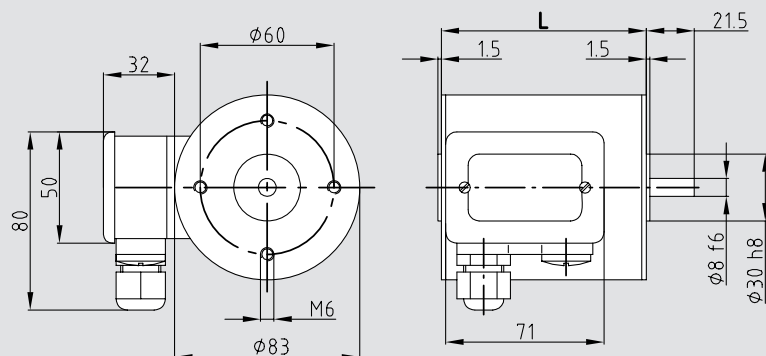
Properties:	Connection:	230 V / 50 Hz (running capacitor required) or 400 V / 50 Hz three-phase system Connection using K4 terminal boxes
	Service life:	20,000 hours, S1 duty
	Insulation mat. class:	B, optional F
	System of protection:	IP 44, optional up to IP 65
	Special model:	Design for short-time duty with high performance
	Options:	Thermal protection, special shafts, special flanges, custom designed



Type	Name			KD 844	KD 844	KD 864	KD 864
	Nominal voltages	U	AC voltage	230	400	230	400
Specification	Nominal power	P_2	W	21	27	36	31
	Nominal speed	n_{nom}	rpm	1200	1150	1300	1350
	Nominal torque	T_{nom}	cNm	17	22	26	22
	Starting torque	T_A	cNm	14.5	51.5	11.5	55.0
	Nominal current	I_{nom}	mA	229	142	321	154
	No-load current	I_0	mA	182	125	180	144
Characteristics	Locked rotor speed	n_{break}	rpm	1050	-	1200	-
	Locked rotor torque	T_{break}	cNm	21	-	33	-
	Nominal efficiency	η	%	45.5	43.0	52.0	51.5
Connection	Terminal resistance	R	Ohm	256	528	146	439
	Input power	P_1	W	46.5	62.0	68.5	60.0
	Running capacitor	C	μ F	3.0	-	4.0	-
Dynamics	Weight	m	kg	1.9	1.9	2.5	2.5
	Moment of inertia	J	gcm ²	750	750	1050	1050
Thermal	Adm. ambient temperature	T_a	$^{\circ}$ C	-20 to +40	-20 to +40	-20 to +40	-20 to +40
	Max. adm. stator temperature	T_{max}	$^{\circ}$ C	+120	+120	+120	+120
Coupling	Shaft diameter	d	mm	8	8	8	8
	Max. axial force	F_a	N	20	20	20	20
	Max. radial force	F_r	N	220	220	220	220

Dimensions

Type	L / mm
KD 844	92
KD 864	112



System technology (tables next page)

Recommended combinations	Gear types			
	Worm gear	S 668	GS 3	
Spur gear	Z 8	M 189		
Planetary gear	P 60	P 50		
Rotary encoder	RE 8	RI 8		
Brake	B 3	B 200	B 220	
Electronics				

Gear unit combinations

- All torques are calculated with an duty factor of 1!



Additional recommended combinations with gear units: GS 3 (Page Sc-06)
 M 189 (Page St-09)
 P50 (Page P-02)

Type	Name	KD 844		KD 844		KD 864		KD 864		
	Nominal voltage / AC voltage	230		400		230		400		
S 668 Worm gear 1-stage		n	M	n	M	n	M	n	M	
		rpm	Nm	rpm	Nm	rpm	Nm	rpm	Nm	
		i=2.5	480	0.3	460	0.5	520	0.5	540	0.5
		i=5	240	0.7	230	0.9	260	1.0	270	0.9
		i=7	171	0.9	164	1.2	186	1.4	193	1.2
		i=10	120	1.2	115	1.5	130	1.8	135	1.5
		i=15	80	1.6	77	2.1	87	2.5	90	2.1
		i=20	60	1.9	58	2.5	65	3.0	68	2.5
i=30	40	2.4	38	3.1	43	3.7	45	3.1		
i=50	24	3.0	23	3.9	26	4.6	27	3.9		
i=70	17	4.0	16	5.2	19	6.2	19	5.2		

Additional reductions upon request.

Z 8 Spur gear 2-4 stage		n	M	n	M	n	M	n	M	
		rpm	Nm	rpm	Nm	rpm	Nm	rpm	Nm	
		i=5.6	214	0.9	205	1.1	232	1.3	241	1.1
		i=13	92	2.0	88	2.6	100	3.0	104	2.6
		i=17.5	69	2.7	66	3.5	74	4.1	77	3.5
		i=25	48	3.8	46	5.0	52	5.9	54	5.0
		i=36.5	33	5.3	32	6.8	36	8.1	37	6.8
		i=49.5	24	7.2	23	9.3	26	10.5*	27	9.3
		i=71	17	10.3	16	10.5*	18	10.5*	19	10.5*
		i=96.5	12	12*	12	12*	13	12*	14	12*
i=131	9	12*	9	12*	10	12*	10	12*		
i=165	7	12*	7	12*	8	12*	8	12*		

Additional reductions upon request. * Max. load at the gear output.

(Motor power must be limited if necessary)

P 60 Planetary gear 1-3 stage		n	M	n	M	n	M	n	M	
		rpm	Nm	rpm	Nm	rpm	Nm	rpm	Nm	
		i=3.7	324	0.5	311	0.7	351	0.8	365	0.7
		i=5.2	231	0.7	221	0.9	250	1.1	260	0.9
		i=6.8	176	0.9	169	1.2	191	1.4	199	1.2
		i=13.7	88	1.7	84	2.3	95	2.7	99	2.3
		i=18.4	65	2.3	63	3.0	71	3.6	73	3.0
		i=28.9	42	3.7	40	4.8	45	5.6	47	4.8
		i=45.6	26	5.8	25	7.5	29	8.9	30	7.5
		i=78.7	15	9.4	15	12.1	17	14.3	17	12.1
		i=115	10	13.7	10	17.7	11	20.9	12	17.7
		i=169	7	20.1	7	26.0	8	30.8	8	26.0

Additional reductions upon request.