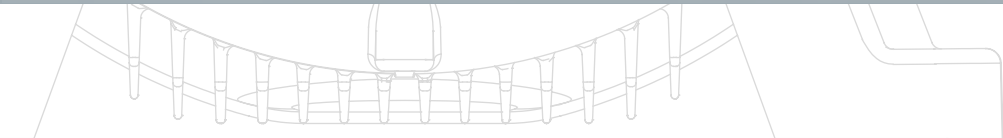
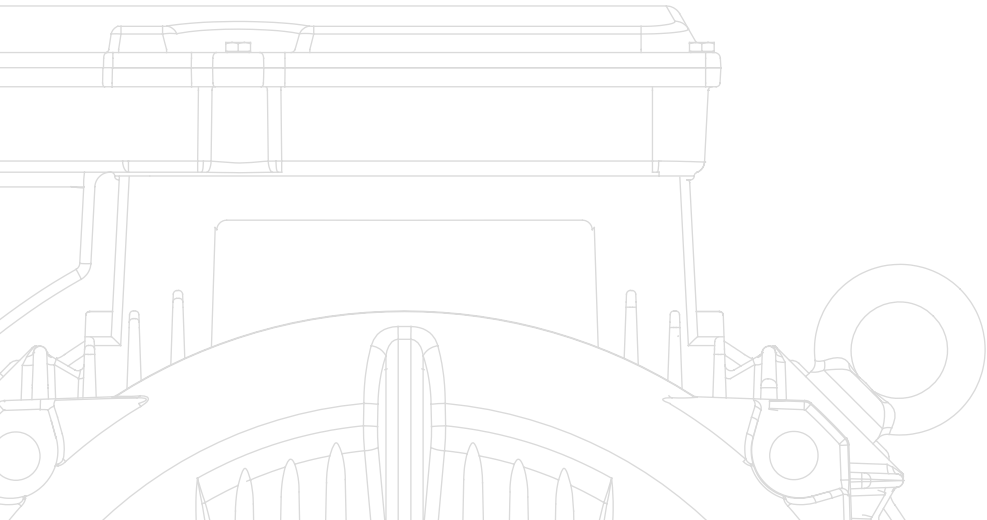
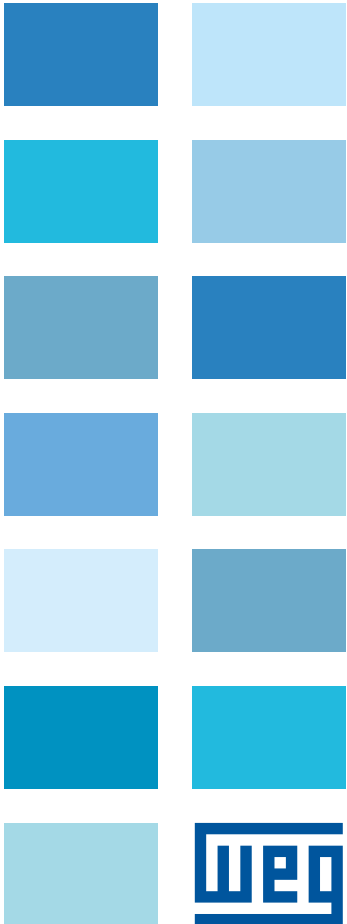


# Flat-frame Motors K1F / K2F



Antriebstechnik **KATT** Hessen  
**AKH**  
WEG Group



# WEG Group

WEG is a leading global solutions provider for drive technology, energy generation and distribution, as well as for automation technology and panel building. Founded in 1961 in Brazil by three entrepreneurs of German ancestry, WEG has evolved into one of the most important manufacturers of electric motors worldwide. WEG has more than 30,000 employees, of which 360 are based in Germany. An annual revenue of approx. 3 billion Euros demonstrates WEG's growing success. WEG global presence is supported through its branches established in 29 countries, manufacturing plants and a network of distributors and agents in five continents.



## At AKH, diversity says it all

We have been developing innovative electric motors since 1924 and for the most diverse industry branches and applications. And this is why we can offer you today an extremely broad spectrum of products that is as diverse as our customers themselves. This also includes the development of new motors on short call that are specially tailored to your requirements.

Due to our extraordinary degree of vertical integration and highly experienced development team, from an engineering point of view, the sky is the limit. Whether you require motors for the toughest operating conditions such as underwater, vibrating, or sawmill motors or machines of the highest performance for sophisticated tasks such as development test benches in the automotive industry: It is your choice – and we have matching motor. We guarantee it.

## What we can do for you:

- Determining the exact requirements and professional advice for selecting your drive
- Design and construction of special motors in close corporation with your responsible engineers
- Production and comprehensive testing, including documentation
- Construction of prototypes
- Production of cost-optimizing special motors for medium quantities
- On-site service or at our factory provided by an highly experienced service team (including 24-hour Service Hotline)

As part of the Brazilian WEG Group, we extend the latter's product range with high-class special motors since 2014.

## Flat-frame Motors lines K1F and K2F

AKH flat-frame motors are AC asynchronous motors in an especially flat and compact design. The motors are characterized by a high power density and high energy efficiency.

### Application

Amongst other things, these robust motors are found in band and circular saw systems in sawmills or stone saws. With assembling of partly multiple, larger saw blades directly on the shaft of the motor, highly efficient systems are realized worldwide with these motors.

### Flat-frame motors K1F and K2F

The motor line K1F was especially designed for maximum output and highest efficiency while operating continuously. Our customers appreciate the performance and longevity of our motors, which are used in highly efficient plants worldwide.

The line K2F is also a very robust range of flat-frame motors. They are especially constructed to achieve high cutting torques despite their compact design. Their standard mode of operation is S6 with a 60 % duty cycle.

## Standard Design

### Specifications

- Shaft height: 75 to 212 mm
- Power: up to 170 kW
- Speed range: up to 12.000 rpm
- Cooling: IC411 (self-ventilated)
- Voltage: 400 V / 50 Hz
- Insulation class: F
- Mounting type acc. to IEC 60034-7
- Degree of protection: IP54
- Vibration severity grade: A
- Ambient temperature: -20°C to +40°C

### Details standard design

- Shaft end made from C-45
- Balancing with half-key
- Material of motor housing made from aluminium alloy or cast iron
- Bearing shields made from cast iron or steel
- Lifetime lubricated rolling bearings
- Primer RAL 5009

### K1F

Shaft height: 212  
 Voltage: 400 V  $\Delta$  / 690 V Y  
 Power: 140 kW at S1-100% (IE3)  
 Speed: 2.977 rpm



## Options

### Options electrical design

- Increased rated power for intermittent operation S6  
Efficiency classes IE 2, IE 3
- Optimized for frequency converter operation
- Special voltages and -frequencies
- Dimensioning as 2, 4 or 6- pole motors
- Pole-changing motors 4/2 or 8/4-pole
- Insulation class H
- Higher ambient temperature and installation altitude
- Winding temperature monitoring (eg. by thermo switch)
- Anti-condensation heating
- etc.

### Options built-in components

- Holding brake (manual release, wear monitoring)
- Optical or magnetic speed sensors
- Backstop
- Chucking appliance and tool changer
- etc.

### Options mechanical design

- Manual or automatic regreasing device
- Backlash-free or special high speed spindle bearings
- Special bearings for high radial and axial loads  
(eg. by milling cutter)
- Electrically insulated bearings
- Higher protection classes possible
- Hollow shaft, rock shaft with tool holders
- Vibration severity grade: B
- Humidity- and tropic proofing
- Housing, bearing shields and terminal box made from ductile cast iron or steel
- Different lacquer qualities, RAL-color at customer's option
- Special shaft material and special surface treatment
- etc.

### Options certificates, special approvals

- Special approvals and certifications for specific industries or countries

## Options shaft design



Extended shaft



Shifting shaft



Collect chuck holder



HSK-tool holder



Clamping flange for saw blade holder



Customer-specific design

## Technical Data - Line K1F

### AKH flat-frame motors S1-100 % (IE3)

- 3000 rpm
- 400 V, 50 Hz
- Degree of protection IP54
- IC411 (self-ventilated)

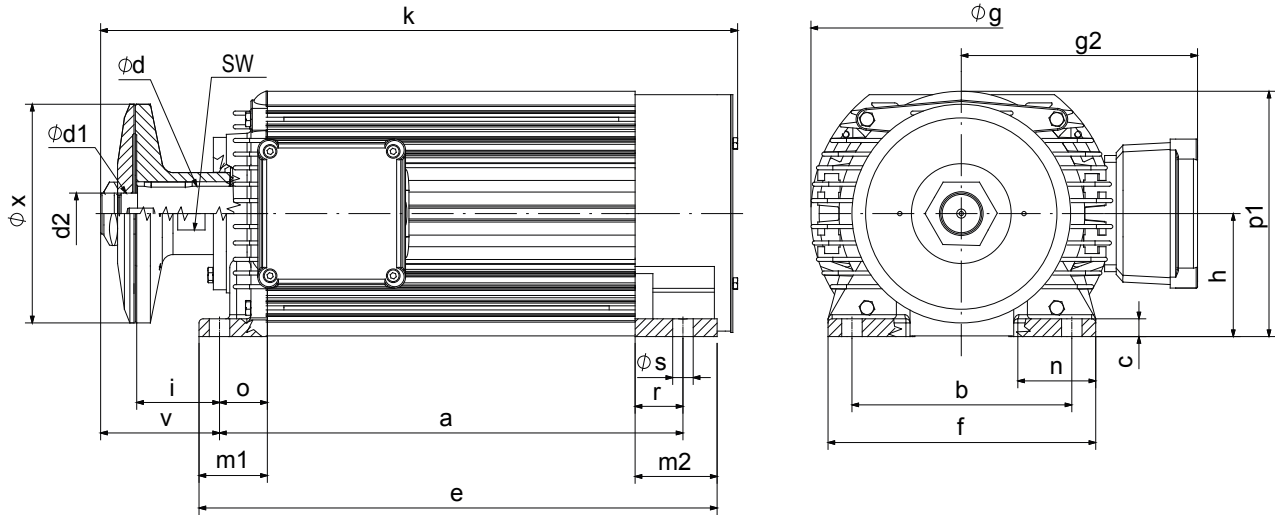
Shaft height	Power kW	Rated speed 1/min	Torque Nm	Rated current A	Mech. speed limit 1/min
90	5,5	2930	17,9	11,3	15000
90	7,5	2915	24,6	13,3	12500
110	9,2	2935	29,9	17,6	12500
110	11	2940	35,7	19,5	12500
110	15	2950	48,6	25,6	12500
110	18,5	2965	59,6	35,3	10000
132	22	2965	70,9	36	8000
132	30	2970	96,5	49,5	8000
132	37	2965	119,2	60,8	7000
132	45	2955	145,4	73,8	7000
160	55	2975	176,6	93,1	9000
160	65	2965	209,4	106	9000
190	80	2970	257,2	129	7500
190	90	2970	289,4	145	7500
190	100	2970	321,6	159,2	6500
190	110	2965	354,3	178	5500
212	120	2980	384,6	193	6000
212	140	2977	449,1	221	6000

Note: Executions with higher power and for special requirements on request



## Drawings - Line K1F (S1-100 % ED)

### Aluminium housing, mounting IM B3



Shaft height	P [kW]	a	b	c	d	d1	d2	e	f	g	g2	h
90	5,5	350	160	13	40	30	M30	390	195	218	165	90
90	7,5	410	160	13	40	30	M30	450	195	218	165	90

110	9,2	395	180	13	40	40	M38x1,5	436	223	263	193	110
110	11	495	180	13	40	40	M38x1,5	536	223	263	193	110
110	15/18,5	595	180	13	40	40	M38x1,5	636	223	263	193	110

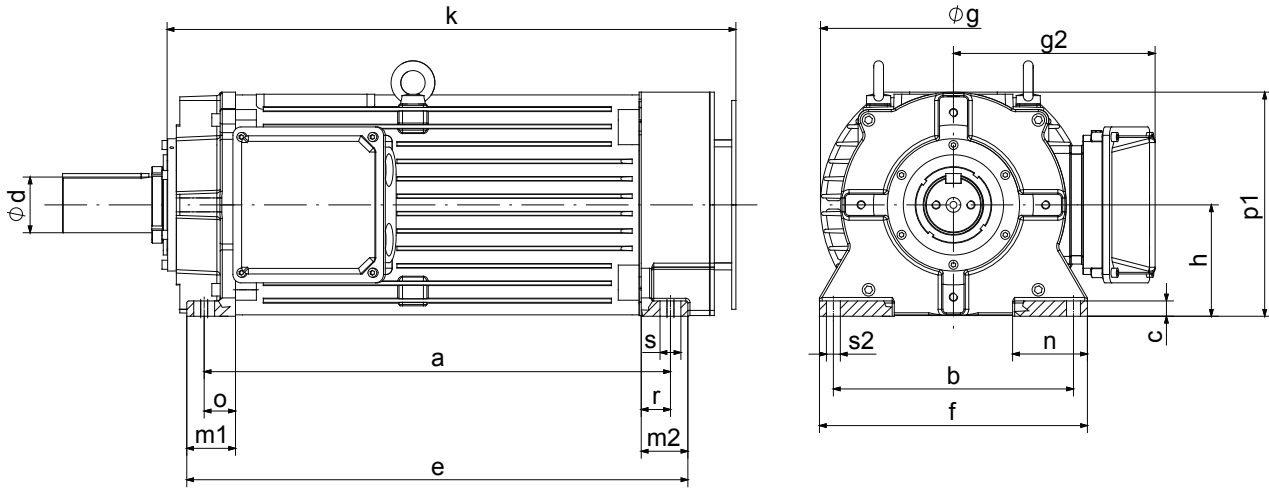
Shaft height	i	k	m1	m2	n	o	p1	r	s	v	x	SW
90	61	542	50	60	60	35	179	35	15	107	160	56
90	61	602	50	60	60	35	179	35	15	107	160	56

110	45	593	70	66	61,5	55	219	40	15	100	200	56
110	45	693	70	66	61,5	55	219	40	15	100	200	56
110	45	793	70	66	61,5	55	219	40	15	100	200	56



# Drawings - Line K1F (S1-100 % ED)

## Iron cast housing, mounting IM B3



Shaft height	P [kW]	a	b	c	d max	e	f	g	g2	h	k	m1
132	22	724	220	22	60	772	274	306	203	132	772	80
132	30/37	774	220	22	60	822	274	306	203	132	822	80
132	45	874	220	22	60	922	274	306	203	132	922	80

160	55	670	345	22	80	720	390	382	273	160	824	70
160	65	830	345	22	80	880	390	382	273	160	984	70

190	80	815	390	24	100	895	448	456	326	190	1007	100
190	90	940	390	24	100	1020	448	456	326	190	1132	100
190	100	1120	390	24	100	1200	448	456	326	190	1312	100
190	110	1170	390	24	100	1250	448	456	326	190	1362	100

212	120/140	1265	460	27	100	1357	530	520	363	212	1482	133
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Shaft height	m2	n	o	p1	r	s	s2
132	125	80	57	263	100	18	-
132	125	80	57	263	100	18	-
132	125	80	57	263	100	18	-

Note: Possible terminal box positions at the drive end, at the non-drive end, on the right or on the left side

Left-handed or right-handed thread (d2) is possible

160	70	110	45	332	45	30	20
160	70	110	45	332	45	30	20

Smaller types of flat-frame motors with brakes are available on request

190	100	101	60	380	60	36	26
190	100	101	60	380	60	36	26
190	100	101	60	380	60	36	26
190	100	101	60	380	60	36	26

212	133	100	92	432	82	36	26
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## Applications

- Band and circular saw systems in sawmills
- Polishing machines and grinders for wood
- Wood processing machines
- Stone grinders
- Cutting-off machines





## Technical Data - Line K2F

### AKH flat-frame motors S6-60 %

- 3000 rpm
- 400 V, 50 Hz
- Degree of protection IP54
- IC411 (self-ventilated)

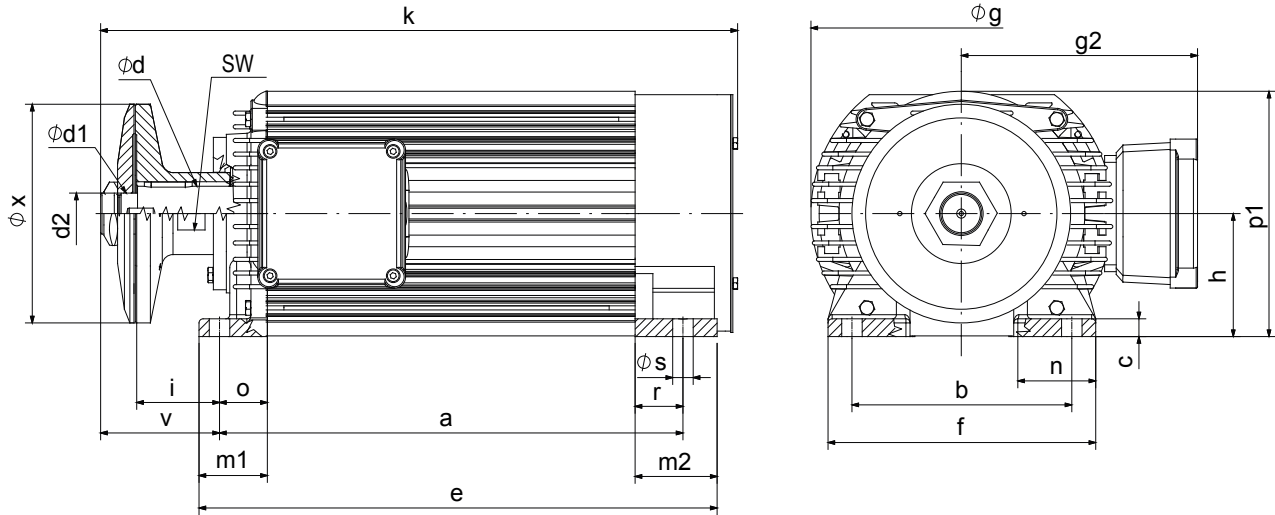
Shaft height	Power kW	Rated speed 1/min	Torque Nm	Rated current A	Mech. speed limit 1/min
75	3,7	2825	12,5	7,2	15000
75	5	2860	16,7	9,4	12500
75	6,5	2885	21,5	14	11000
75	7,5	2835	25,3	14,2	10000
90	11	2875	36,5	20	12500
90	13	2880	43	23,5	10000
90	18	2855	60,5	33	8000
104	20	2885	66,5	35,5	12500
104	25	2905	82,5	44	10000
125	25	2960	81	42	8000
125	37	2955	120	61	8000
125	45	2955	146	74	7000
125	55	2955	178	91	7000
160	65	2975	208	115	9000
160	75	2965	241	123	9000
190	90	2965	290	146	7500
190	120	2965	387	195	6500
212	140	2975	449	223	6000
212	170	2980	545	238	6000

Note: Executions with higher power and for special requirements on request



# Drawings - Line K2F (S6-60 % ED)

## Aluminium housing, mounting IM B3



Shaft height	P [kW]	a	b	c	d	d1	d2	e	f	g	g2	h
75	3,7	360	140	13	35	30	M24	400	165	196	146	75
75	5	380	140	13	35	30	M24	420	165	196	146	75
75	6,5	420	140	13	35	30	M24	460	165	196	146	75
75	7,5	450	140	13	35	30	M24	490	165	196	146	75

90	11	350	160	13	40	30	M30	390	195	218	165	90
90	13	410	160	13	40	30	M30	450	195	218	165	90
90	18	450	160	13	40	30	M30	490	195	218	165	90

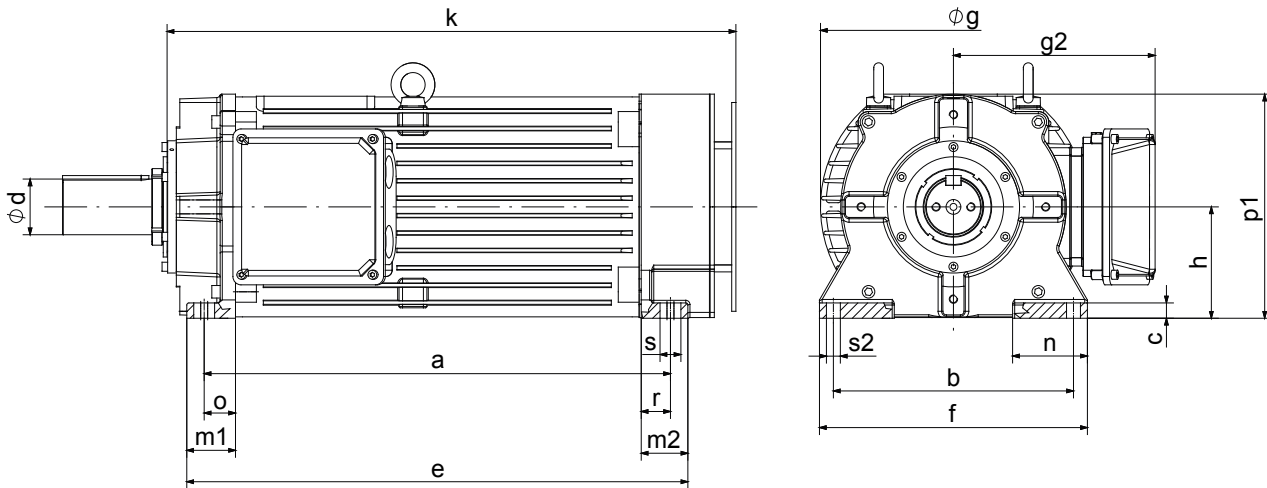
Shaft height	i	k	m1	m2	n	o	p1	r	s	v	x	SW
75	40	520	50	60	45	35	149	35	11	83	140	52
75	40	540	50	60	45	35	149	35	11	83	140	52
75	40	580	50	60	45	35	149	35	11	83	140	52
75	40	610	50	60	45	35	149	35	11	83	140	52

90	61	542	50	60	60	35	179	35	15	107	160	56
90	61	682	50	60	60	35	179	35	15	107	160	56
90	61	722	50	60	60	35	179	35	15	107	160	56



# Drawings - Line K2F (S6-60 % ED)

## Iron cast housing, mounting IM B3



Shaft height	P [kW]	a	b	c	d max	e	f	g	g2	h	k	m1
104	20	495	180	13	45	536	223	263	193	104	591	70
104	25	595	180	13	45	636	223	263	193	104	691	70

125	25/37	674	220	22	60	722	274	306	203	125	722	80
125	45	774	220	22	60	822	274	306	203	125	822	80
125	55	874	220	22	60	922	274	306	203	125	922	80

160	65	670	345	22	80	720	390	382	273	160	824	70
160	75	830	345	22	80	880	390	382	273	160	984	70

190	90	815	390	24	100	895	448	456	326	190	1007	100
190	120	1120	390	24	100	1200	448	456	326	190	1452	100

212	140/170	1265	460	27	100	1357	530	520	363	212	1657	133
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Shaft height	m2	n	o	p1	r	s	s2
104	66	61,5	55	213	40	15	-
104	66	61,5	55	213	40	15	-

Note: Possible terminal box positions at the drive end, at the non-drive end, on the right or on the left side

Left-handed or right-handed thread (d2) is possible

Smaller types of flat-frame motors with brakes are available on request

125	125	80	67	256	127	18	-
125	125	80	67	256	127	18	-
125	125	80	67	256	127	18	-

160	70	110	45	332	45	30	20
160	70	110	45	332	45	30	20

190	100	101	60	380	60	36	26
190	100	101	60	380	60	36	26

212	133	100	92	432	82	36	26
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