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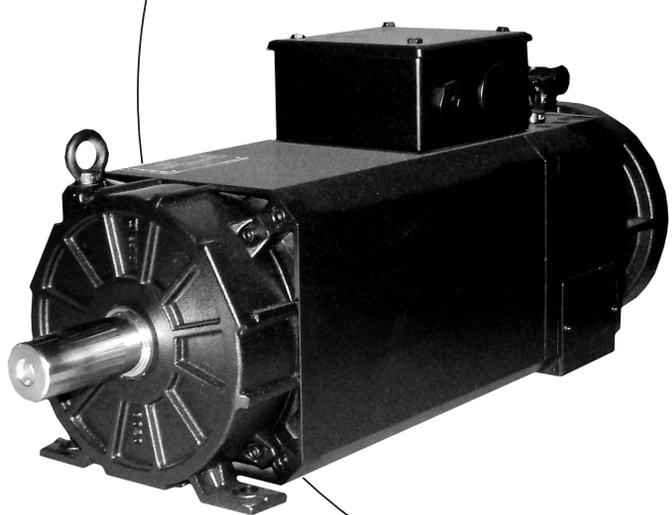

be in motion be in motion

AC Asynchronous Motors

DA 100 – 280

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1. Three-phase asynchronous motor DA 100-280

With their very high power density and high dynamic response, the motors in this series are ideal for sophisticated applications in mechanical engineering.

The motors have high speed setting ranges and feature roller bearings to cope with high lateral force loads.

These durable, compact motors are also largely maintenance-free, which helps ensure efficient operation.

The use of liquid cooling makes for a highly compact design and also reduces noise emissions.

1.1. General technical data

Version	IM B3, B5	Version 100 / 132 / 160
	IM B3, B35	Version 180 / 225
	IM B3	Version 280[1)]
Connection	Main connection	U V W (Terminal box)
	Control connection	12-pin connector, 17-pin connector with ENDAT interface
	Thermal sensor	in the main connection
	Brake	Axial ventilation: 8-pin connector
		Radial ventilation or water cooling: Terminal design
Thermal sensor	Linear thermal sensor	for evaluation in the controller
Temperature rise	$\Delta\vartheta \leq 105K$	Insulation class F acc. to EN 60034
Storage	-30°C...+85°C	Cooling water should be drained at temperatures < 3°C.
Balance quality	A, optional B	Acc. to DIN EN 60034-14 (VDE 0530 Part 14): 2004-09
Flange	acc. to IEC standard	
shaft end	cylindrical	according to DIN 748 without key
		Centering with internal thread acc. to DIN 332 form D
		Also available with key DIN 6885 as an option (consider torque)
Bearing	D-end:	standard = ball bearing; option = roller bearing
	B-side	locating bearing
Paint	black matt	RAL 9005
Actual speed encoder	2-pin resolver	
	Option: Sincos Encoder	
	Other encoders on request	
Brake	Disk brakes from Baumüller	B-side mounting as a module, other brands on request
UL design	Approval for DA100-225	

[1)] DA280 only on request

Technical data for air-cooled motors

Type of protection/cooling method	IP23/ IC06	Internally ventilated with fan
	IP54/ IC0641	Surface-cooled with fan
DA 100	Axial fan on N-end; integrated fan[2)]	Air conduction D-end to N-end, lateral air outlet at N-end
DA 132-225	Standard: Standard fan motor for axial ventilation on the N-end:	Air conduction from D-end to N-end, lateral air outlet at N-end
	option: Axially integrated fan on the N-end;	Air conduction from D-end to N-end, lateral air outlet at N-end
	option: Standard fan motor for radial ventilation on the N-end	Air conduction from N-end to D-end, lateral air outlet at D-end
DA280	Radial fan at N-end; mounted standard motor	Air conduction from N-end to D-end, lateral air outlet at D-end
Fan motor connection	Mounted standard motor	Terminal box of standard motor
	Integrated fan motor	6-pin connector
Vibration-resistant DA100	Radial 0.5 g / axial 0.5 g	10 Hz - 150 Hz acc. to EN 60068-2-6
Vibration-resistant DA132 – DA280	Radial 3 g / axial 1 g	10 Hz - 55 Hz acc. to EN 60068-2-6
Terminal box	N-end; top,	
	left- or right-hand side	
Termperature range	0 to +40° C	

[2)] Not for flammable, explosive, chemically aggressive or electrically conductive dusts

Technical data for liquid-cooled motors

Type of protection/cooling method	IP54/ IC3W7	Water-cooled machine
Vibration-resistant DA100 – DA280	Radial 3 g / axial 1 g	10 Hz - 55 Hz acc. to EN 60068-2-6
Terminal box	N-end; top	
Coolant input temperature	10°C to 35°C	Consider how ambient temperature/humidity can affect the accumulation of condensed water, and how this phenomenon can be avoided.
Water connection	D-end; lateral	

1.2. Ratings definition for ventilated machines

The power, torque, speed, current and voltage ratings for S1 operation apply for a maximum permissible ambient temperature of 40°C and an altitude of the motor below 1000 m a.m.s.l.

If motors are to be operated in an ambient temperature of more than 40 °C or altitudes above 1000 m a.m.s.l., the required list nominal power P_L (list nominal torque M_n) results from the product of the factors k_1, k_2 specified in the table and the required power P (torque M).

Ambient temperature	40 °C	45°C	50 °C	55°C	60°C
Correction factor k_1	1	1.06	1.13	1.22	1.34
Altitude a.m.s.l. up to	1.000m	2.000m	3.000m	4.000m	5.000m
Correction factor k_2	1	1.07	1.16	1.27	1.55

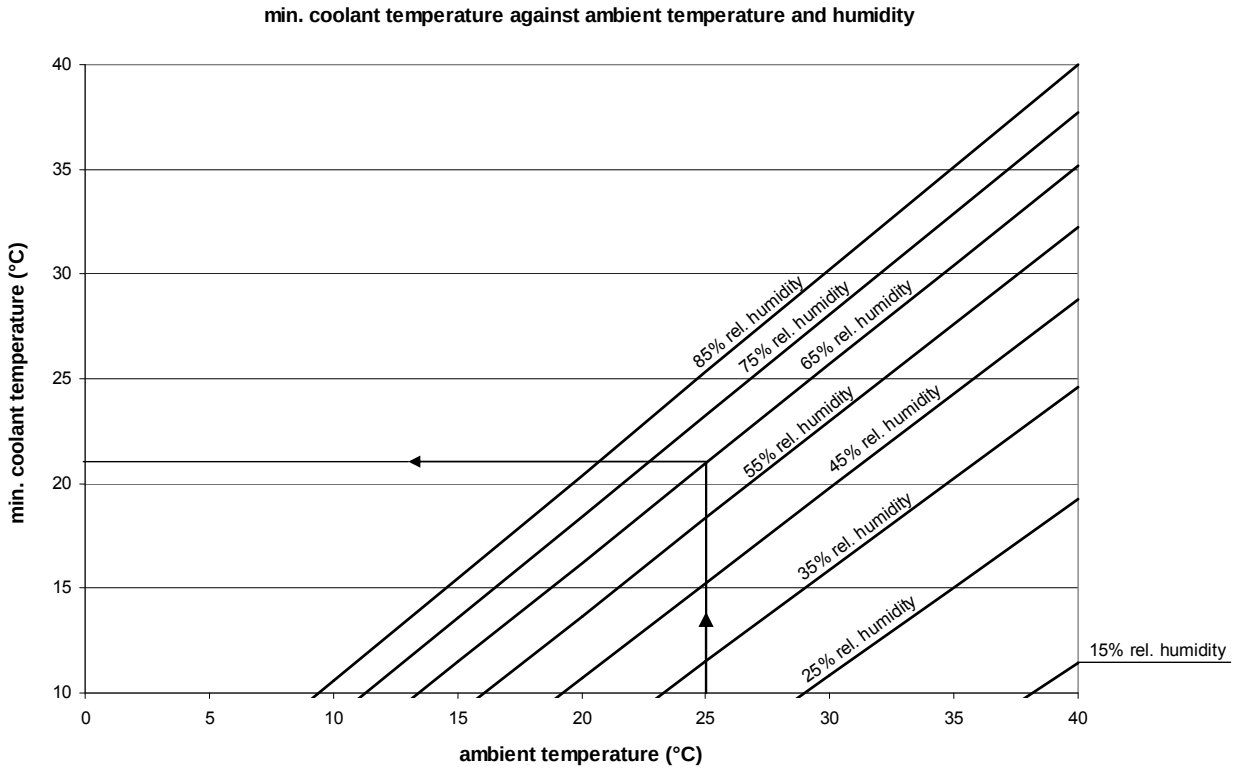
For ambient temperatures above 40 °C and enclosed installation of motors, it is absolutely necessary to contact the manufacturer, because design changes may be necessary.

If, with increasing site altitude above 1000 m, the ambient temperature decreases by approx. 10 °C per 1000 m increase in altitude, no power correction is necessary.

1.3. Cooling circuit requirements for water-cooled motors

Conditions	Unit	Value
Maximum permissible system pressure	bar	6
Coolant temperature - For Motor	°C	10 to 35 See diagram
pH value (at 20° C)	---	6.5 to 9
Overall hardness	mmol/l	1.43 to 2.5
Chloride - Cl^-	mg/l	< 200
Sulfate - SO_4^{2-}	mg/l	< 200
Oil	mg/l	< 1
Permissible particle size Solid foreign bodies, particles (e.g., sand)	mm	< 0.1

- $T_{min\ for\ the\ coolant} \geq T_{Ambient}$ (but max. coolant temperature of 35°C)
- Depending on the relative humidity, the coolant temperature may be lower than the ambient temperature. The permissible coolant temperature (see diagram) depends on the relative humidity (during operation) and the ambient temperature.
  Values of 15% to 85% relative atmospheric humidity (non-condensing) are permissible.
  For example, ambient temperature 25°C → relative humidity 65%
  → coolant input temperature ≥ 21°C (see diagram)



- The coolant should take the form of clear, clean water that is free of suspended matter.

Details relating to the amounts of coolant required

DA size	100	132	160	180	225	280
Min. flow rate [l/min]	7 (5)	9 (6.5)	11 (9)	12 (10)	13 (11)	17 (14.5)
Pressure drop [bar]	0.29 ±10%	0.33 ±10%	1.05 ±10%	1.35 ±10%	2.55 ±10%	2.55 ±10%
Max. temperature rise [K]	6 (9)	7 (10)	8 (10)	10 (12)	11 (13)	11 (13)
Max. coolant pressure [bar]	5	5	5	5	5	6

1.4. Winding isolation and temperature rise

All machines of this series are designed in insulation class F according to EN 60034 for a permissible winding temperature of 105 K. The insulation is resistant against gases and vapors of combustible materials and it meets the requirements placed on a moisture-proof and tropical insulation.

In the case of converters with a DC link voltage > 500 V, the cables between the converter and the motor must not be longer than 20 meters. For longer cables, additional measures (e.g. motor filters) must be provided. The maximum permissible terminal voltage is 1000 V.

1.5. Explanation of the motor data

n_N	Nominal speed (min^{-1})
P_N	Nominal power (kW) with nominal speed n_N in continuous operation (S1)
M_N	Nominal torque (kW) with nominal speed n_N in continuous operation (S1)
I_N	Nominal r.m.s. current (A) at nominal speed n_r in continuous operation (S1); T_A= 40°C
U_N	Nominal voltage (V)
n_1	Limit speed for field weakening (constant power) (min^{-1})
n_{max}	mechanically permissible operating speed (min^{-1})
cos φ	Power factor
I_μ	Magnetizing current (A)
η_N	Efficiency
f_N	Nominal frequency (Hz)
$M_{0, max,}$	Maximum standstill torque (Nm) at maximum current (A) at speed = 0
J	Rotor inertia incl. resolver without holding brake (kg m²)
m	Weight (kg)

The specified ratings are achieved in inverter operation (field-oriented control) with a clock frequency of 4 kHz in the power stage. A chopping frequency of $>$ 6 kHz is recommended.

1.6. Noise intensity

The ventilated motors do not exceed the limit values specified in EN 60034.
A converter clock frequency of > 6 kHz is recommended.

Noise level

Motor frame size	Type of protection IP 23	Type of protection IP 54, surface-cooled	Type of protection IP 54, water-cooled
DA 100	-	73 ± 3 dBA	71 ± 3 dBA
DA 132	75 ± 3 dBA	74 ± 3 dBA	72 ± 3 dBA
DA 160	77 ± 3 dBA	76 ± 3 dBA	74 ± 3 dBA
DA 180	79 ± 3 dBA	78 ± 3 dBA	75 ± 3 dBA
DA 225	82 ± 3 dBA	80 ± 3 dBA	76 ± 3 dBA
DA 280	85 ± 3 dBA	-	-

1.7. Type key

DA	FF	G	225	M	54	A	17	5	UL

approval	UL	Motor with UL approval
DC link voltage:	5	540V
	6	640V
Nominal speed	17	1750 min^{-1}
Cooling method	W	Water cooling
	A	Axially mounted separate fan
	R	Radially mounted separate fan
Type of protection	54	IP54
	23	IP23
Length:	K	
	M	
	L	
	B	
Frame size	100	
	132	
	160	
	180	
	225	
	280	
Brake	G	Brake
Design	F	Flange-mounting
	FF	Foot-flange mounting
Motor type	DA	Three-phase asynchronous motor

2. Technical data

2.1. DA 100

2.1.1. DA 100..54 A.. (IP 54 surface-cooled)

Mains voltage 3 AC 400 V for converters with uncontrolled supply

Nom. speed	Motor type	Nom. power		Nom. torque		Nom. current	Nom. voltage	Limit speed with field weaken-ing	Max. operat. speed	Power factor	Magne-tizing current	Effi-ciency	Nom. Fre-quency
n_N min^{-1}		P_N kW	P_N hp	M_N Nm	M_N lbf ft	I_N A	U_N V	n_1 min^{-1}	n_{max} min^{-1}	cos φ	I_μ A	η_N	f_N Hz
1000	DA100K54A10-5	3.5	4.7	33	24	9.0	345	2400	8000	0.82	5.2	0.790	35.5
	DA100M54A10-5	5.0	6.7	48	35	13.2	330	3000	8000	0.81	7.8	0.810	35.3
	DA100L54A10-5	6.0	8.0	57	42	15.0	345	2400	8000	0.81	8.5	0.824	35.3
	DA100B54A10-5	7.0	9.4	67	49	18.0	345	2400	8000	0.79	11.1	0.830	35.1
1750	DA100K54A17-5	5.8	7.8	32	24	14.5	335	3500	8000	0.80	7.5	0.849	60.6
	DA100M54A17-5	7.8	10.5	43	32	18.3	350	2600	8000	0.80	9.3	0.866	60.5
	DA100L54A17-5	9.5	12.7	52	38	23.0	345	3000	8000	0.79	12.1	0.874	60.4
	DA100B54A17-5	11.0	14.8	60	44	27.8	335	3500	8000	0.78	15.2	0.878	60.3
2300	DA100K54A23-5	7.2	9.7	30	22	17.0	350	3400	8000	0.81	8.0	0.871	79.0
	DA100M54A23-5	9.6	12.9	40	30	22.2	350	3400	8000	0.80	11.1	0.886	78.7
	DA100L54A23-5	11.0	14.8	46	34	25.5	350	3400	8000	0.80	13.0	0.893	78.6
	DA100B54A23-5	13.0	17.4	54	40	29.0	355	3000	8000	0.82	13.5	0.897	78.7
3000	DA100K54A30-5	8.0	10.7	25	18	19.0	345	4500	8000	0.80	9.3	0.882	102.1
	DA100M54A30-5	11.0	14.8	35	26	25.0	350	4500	8000	0.81	11.9	0.898	102.1
	DA100L54A30-5	13.0	17.4	41	30	31.0	345	5100	8000	0.78	16.4	0.902	101.8
	DA100B54A30-5	15.0	20.1	47	35	35.3	345	5100	8000	0.78	19.0	0.906	101.8

Mains voltage 3 AC 480 V for converters with uncontrolled supply

Nom. speed	Motor type	Nom. power		Nom. torque		Nom. current	Nom. voltage	Limit speed with field weaken -ing	Max. operat. speed	Power factor	Magne-tizing current	Effi-ciency	Nom. Fre-quency
n_N min^{-1}		P_N kW	P_N hp	M_N Nm	M_N lbf ft	I_N A	U_N V	n_1 min^{-1}	n_{max} min^{-1}	cos φ	I_μ A	η_N	f_N Hz
1000	DA100K54A10-6	3.5	4.7	33	24	7.1	445	2500	4000	0.80	4.1	0.800	35.4
	DA100M54A10-6	5.0	6.7	48	35	10.4	435	3200	4000	0.79	6.1	0.820	35.3
	DA100L54A10-6	6.0	8.0	57	42	11.6	445	2700	4000	0.80	6.6	0.830	35.2
	DA100B54A10-6	7.0	9.4	67	49	14.0	440	3200	4000	0.78	8.4	0.840	35.1
1750	DA100K54A17-6	5.8	7.8	32	24	11.5	440	3300	8000	0.77	5.9	0.860	60.5
	DA100M54A17-6	7.8	10.5	43	32	15.0	450	3300	8000	0.79	7.3	0.880	60.4
	DA100L54A17-6	9.5	12.7	52	38	18.0	435	3700	8000	0.78	9.3	0.880	60.3
	DA100B54A17-6	11.0	14.8	60	44	22.0	420	4800	8000	0.77	11.7	0.890	60.2
2300	DA100K54A23-6	7.2	9.7	30	22	13.0	435	4800	8000	0.81	6.3	0.870	78.9
	DA100M54A23-6	9.6	12.9	40	30	19.0	430	5100	8000	0.78	9.0	0.900	78.7
	DA100L54A23-6	11.0	14.8	46	34	20.0	440	4400	8000	0.78	10.0	0.900	78.6
	DA100B54A23-6	13.0	17.4	54	40	23.0	440	4400	8000	0.80	10.7	0.900	78.7
3000	DA100K54A30-6	8.0	10.7	25	18	16.0	430	6400	8000	0.77	7.6	0.890	102.0
	DA100M54A30-6	11.0	14.8	35	26	20.0	440	5800	8000	0.78	9.3	0.910	102.0
	DA100L54A30-6	13.0	17.4	41	30	24.0	445	5200	8000	0.75	13.0	0.910	101.7
	DA100B54A30-6	15.0	20.1	47	35	29.0	435	6400	8000	0.75	16.0	0.900	101.7

Motor type	Maximum standstill torque $M_{0\ max}$ [Nm]	$M_{0\ max}$ [lbf ft]	Inertia J [kgm^2]	J [lb ft^2]	Weight m [kg]	m [lb]
DA100K54A	66	49	0.017	0.403	42	93
DA100M54A	96	71	0.023	0.546	53	117
DA100L54A	114	84	0.029	0.688	62	137
DA100B54A	134	99	0.034	0.807	70	154

2.1.2. DA 100..54 W.. (IP 54 water-cooled)

Mains voltage 3 AC 400 V for converters with uncontrolled supply

Nom. speed	Motor type	Nom. power		Nom. torque		Nom. current	Nom. voltage	Limit speed with field weaken-ing	Max. operat. speed	Power factor	Magne-tizing current	Effi-ciency	Nom. Fre-quency
n_N min^{-1}		P_N kW	P_N hp	M_N Nm	M_N lbf ft	I_N A	U_N V	n_1 min^{-1}	n_{max} min^{-1}	cos φ	I_μ A	η_N	f_N Hz
1000	DA100K54W10-5	4.5	6.0	43	32	12.4	330	3000	8000	0.83	6.5	0.755	35.8
	DA100M54W10-5	6.5	8.7	62	46	17.2	335	3000	8000	0.84	8.9	0.776	35.8
	DA100L54W10-5	7.8	10.5	74	55	21.0	330	3000	8000	0.81	11.7	0.794	35.5
	DA100B54W10-5	9.0	12.1	86	63	23.5	340	2700	8000	0.80	13.5	0.805	35.4
1500	DA100K54W15-5	6.5	8.7	41	30	16.5	340	2800	8000	0.82	7.4	0.805	52.7
	DA100M54W15-5	9.0	12.1	57	42	23.5	335	3000	8000	0.79	11.9	0.826	52.4
	DA100L54W15-5	11.0	14.8	70	52	28.0	335	3000	8000	0.79	14.3	0.839	52.3
	DA100B54W15-5	13.0	17.4	83	61	32.5	345	2500	8000	0.79	16.8	0.847	52.3
2000	DA100K54W20-5	8.5	11.4	41	30	22.0	330	4000	8000	0.81	10.0	0.835	69.3
	DA100M54W20-5	12.0	16.1	57	42	30.0	330	4000	8000	0.81	13.4	0.853	69.2
	DA100L54W20-5	15.0	20.1	72	53	37.0	340	3800	8000	0.80	17.5	0.863	69.1
	DA100B54W20-5	17.5	23.5	84	62	41.0	350	3000	8000	0.81	18.5	0.870	69.1
2500	DA100K54W25-5	10.0	13.4	38	28	24.5	340	4700	8000	0.81	10.3	0.854	86.0
	DA100M54W25-5	15.0	20.1	57	42	37.0	335	5000	8000	0.80	16.7	0.867	85.9
	DA100L54W25-5	18.5	24.8	71	52	44.0	340	4700	8000	0.81	18.7	0.877	85.9
	DA100B54W25-5	22.0	29.5	84	62	55.0	330	5000	8000	0.80	25.5	0.883	85.7
3000	DA100K54W30-5	11.5	15.4	37	27	28.0	340	5700	8000	0.80	12.0	0.865	102.6
	DA100M54W30-5	17.0	22.8	54	40	40.0	340	5700	8000	0.81	16.2	0.879	102.6
	DA100L54W30-5	21.0	28.2	67	49	49.0	345	5100	8000	0.80	21.5	0.887	102.4
	DA100B54W30-5	25.0	33.5	80	59	57.0	350	4500	8000	0.80	25.5	0.893	102.3

Motor type	Maximum standstill torque $M_{0\ max}$ [Nm]	$M_{0\ max}$ [lbf ft]	Inertia J [kgm^2]	J [lb ft^2]	Weight m [kg]	m [lb]
DA100K54W	69	51	0.017	0.403	41	90
DA100M54W	99	73	0.023	0.546	51	112
DA100L54W	118	87	0.029	0.688	60	132
DA100B54W	138	102	0.034	0.807	68	150

2.2. DA 132

2.2.1. DA 132..23 A(R).. (IP 23 internally ventilated)

Mains voltage 3 AC 400 V for converters with uncontrolled supply

Nom. speed	Motor type	Nom. power		Nom. torque		Nom. current	Nom. voltage	Limit speed with field weaken-ing	Max. operat. speed	Power factor	Magne-tizing current	Effi-ciency	Nom. Fre-quency
n_N min^{-1}		P_N kW	P_N hp	M_N Nm	M_N lbf ft	I_N A	U_N V	n_1 r min^{-1}	n_{max} min^{-1}	cos φ	I_μ A	η_N	f_N Hz
1000	DA132K23A.10-5	15.0	20.1	143	105	38.0	335	2600	5000	0.82	18.6	0.835	35.0
	DA132M23A10-5	18.0	24.1	172	127	42.0	340	2400	5000	0.85	18.6	0.847	35.1
	DA132L23A10-5	20.0	26.8	191	141	48.0	345	2200	5000	0.82	23.9	0.862	34.8
	DA132B23A10-5	22.5	30.2	215	159	57.0	325	3000	5000	0.81	29.7	0.867	34.8
1500	DA132K23A15-5	22.0	29.5	140	103	51.0	350	2300	5000	0.83	20.2	0.869	51.9
	DA132M23A15-5	26.0	34.9	166	122	60.0	350	2300	5000	0.82	25.3	0.882	51.7
	DA132L23A15-5	29.0	38.9	185	136	65.0	350	2300	5000	0.83	25.5	0.889	51.7
	DA132B23A15-5	33.0	44.3	210	155	78.0	335	3000	5000	0.81	33.8	0.895	51.5
2000	DA132K23A20-5	28.0	37.5	134	99	68.0	335	4000	5000	0.80	29.5	0.890	68.4
	DA132M23A20-5	33.0	44.3	158	117	75.0	350	3000	5000	0.82	30.0	0.900	68.4
	DA132L23A20-5	37.0	49.6	177	131	84.0	345	3400	5000	0.82	33.8	0.906	68.3
	DA132B23A20-5	41.0	55.0	196	145	97.0	330	4000	5000	0.82	39.7	0.910	68.1
3000	DA132K23A30-5	36.0	48.3	115	85	82.0	345	5000	5000	0.81	30.5	0.910	101.7
	DA132M23A30-5	42.0	56.3	134	99	94.0	350	4500	5000	0.80	37.0	0.916	101.6
	DA132L23A30-5	45.0	60.3	143	105	98.0	355	4000	5000	0.82	36.0	0.922	101.5
	DA132B23A30-5	50.0	67.1	159	117	108.0	350	4500	5000	0.83	38.2	0.925	101.5

Mains voltage 3 AC 480 V for converters with uncontrolled supply

Nom. speed	Motor type	Nom. power		Nom. torque		Nom. current	Nom. voltage	Limit speed with field weaken -ing	Max. operat. speed	Power factor	Magne-tizing current	Effi-ciency	Nom. Fre-quency
n_N min^{-1}		P_N kW	P_N hp	M_N Nm	M_N lbf ft	I_N A	U_N V	n_1 min^{-1}	n_{max} min^{-1}	cos φ	I_μ A	η_N	f_N Hz
1000	DA132K23A.10-6	15.0	20.1	143	105	29.0	435	2100	4000	0.82	14.5	0.830	35.1
	DA132M23A10-6	18.0	24.1	172	127	33.0	440	1750	4000	0.86	14.0	0.850	35.1
	DA132L23A10-6	20.0	26.8	191	141	38.0	435	2500	4000	0.82	18.5	0.860	34.8
	DA132B23A10-6	22.5	30.2	215	159	43.0	430	2700	4000	0.81	22.0	0.860	34.8
1500	DA132K23A15-6	22.0	29.5	140	103	40.0	445	2350	5000	0.82	16.0	0.870	51.9
	DA132M23A15-6	26.0	34.9	166	122	48.0	440	2350	5000	0.81	20.0	0.880	51.8
	DA132L23A15-6	29.0	38.9	185	136	52.0	440	2800	5000	0.82	21.0	0.890	51.7
	DA132B23A15-6	33.0	44.3	210	155	61.0	435	2800	5000	0.81	26.0	0.890	51.6
2000	DA132K23A20-6	28.0	37.5	134	99	52.0	445	3100	5000	0.78	24.0	0.890	68.4
	DA132M23A20-6	33.0	44.3	158	117	60.0	445	3000	5000	0.81	24.0	0.900	68.4
	DA132L23A20-6	37.0	49.6	177	131	68.0	435	3500	5000	0.80	29.0	0.900	68.2
	DA132B23A20-6	41.0	55.0	196	145	76.0	425	3850	5000	0.81	31.0	0.910	68.2
3000	DA132K23A30-6	36.0	48.3	115	85	65.0	430	5000	5000	0.81	25.0	0.910	101.7
	DA132M23A30-6	42.0	56.3	134	99	73.0	450	4000	5000	0.81	28.0	0.920	101.6
	DA132L23A30-6	45.0	60.3	143	105	80.0	430	5000	5000	0.82	30.0	0.920	101.5
	DA132B23A30-6	50.0	67.1	159	117	85.0	440	5000	5000	0.83	31.0	0.920	101.5

Motor type	Maximum standstill torque $M_{0\ max}$ [Nm]	$M_{0\ max}$ [lbf ft]	Inertia J [kgm^2]	J [lb ft²]	Weight m [kg]	m [lb]
DA132K23A/R	229	169	0.074	1.756	126	278
DA132M23A/R	275	203	0.090	2.136	141	311
DA132L23A/R	306	226	0.105	2.492	156	344
DA132B23A/R	344	254	0.120	2.848	171	377

2.2.2. DA 132..54 A(R).. (IP 54 surface-cooled)

Mains voltage 3 AC 400 V for converters with uncontrolled supply

Nom. speed	Motor type	Nom. power		Nom. torque		Nom. current	Nom. voltage	Limit speed with field weaken-ing	Max. operat. speed	Power factor	Magne-tizing current	Effi-ciency	Nom. Fre-quency
n_N min^{-1}		P_N kW	P_N hp	M_N Nm	M_N lbf ft	I_N A	U_N V	n_1 min^{-1}	n_{max} min^{-1}	cos φ	I_μ A	η_N	f_N Hz
1000	DA132K54A10-5	10.0	13.4	96	71	26.0	335	2600	5000	0.79	14.6	0.859	34.6
	DA132M54A10-5	12.0	16.1	115	85	29.0	340	2400	5000	0.82	15.0	0.868	34.6
	DA132L54A10-5	14.0	18.8	134	99	33.0	340	2400	5000	0.82	17.0	0.877	34.5
	DA132B54A10-5	16.5	22.1	158	117	40.0	340	2400	5000	0.80	22.3	0.879	34.5
1750	DA132K54A17-5	16.0	21.5	87	64	39.0	335	3500	5000	0.79	18.4	0.896	59.7
	DA132M54A17-5	20.0	26.8	109	80	49.5	330	3500	5000	0.79	23.9	0.901	59.6
	DA132L54A17-5	23.5	31.5	128	94	56.0	335	3500	5000	0.80	26.0	0.907	59.6
	DA132B54A17-5	26.5	35.5	145	107	64.0	335	3500	5000	0.79	31.5	0.910	59.5
2300	DA132K54A23-5	20.0	26.8	83	61	47.0	340	4400	5000	0.80	21.3	0.907	78.0
	DA132M54A23-5	24.0	32.2	100	74	62.0	320	4600	5000	0.78	30.7	0.911	77.8
	DA132L54A23-5	29.0	38.9	120	89	68.0	340	4400	5000	0.79	32.0	0.917	77.8
	DA132B54A23-5	32.0	42.9	133	98	73.0	345	4000	5000	0.80	32.3	0.921	77.8
3000	DA132K54A30-5	23.0	30.8	73	54	58.0	330	5000	5000	0.77	28.2	0.912	101.2
	DA132M54A30-5	27.0	36.2	86	63	68.0	330	5000	5000	0.77	33.8	0.918	101.1
	DA132L54A30-5	33.0	44.3	105	77	77.0	340	5000	5000	0.79	34.8	0.925	101.1
	DA132B54A30-5	37.0	49.6	118	87	85.0	345	5000	5000	0.79	38.3	0.928	101.1

Mains voltage 3 AC 480 V for converters with uncontrolled supply

Nom. speed	Motor type	Nom. power		Nom. torque		Nom. current	Nom. voltage	Limit speed with field weaken-ing	Max. operat. speed	Power factor	Magne-tizing current	Effi-ciency	Nom. Fre-quency
n_N min^{-1}		P_N kW	P_N hp	M_N Nm	M_N lbf ft	I_N A	U_N V	n_1 min^{-1}	n_{max} min^{-1}	cos φ	I_μ A	η_N	f_N Hz
1000	DA132K54A10-6	10.0	13.4	96	71	20.0	430	2000	4000	0.79	9.8	0.850	34.7
	DA132M54A10-6	12.0	16.1	115	85	23.0	440	2100	4000	0.81	12.0	0.870	34.6
	DA132L54A10-6	14.0	18.8	134	99	26.0	440	1500	4000	0.81	12.0	0.870	34.6
	DA132B54A10-6	16.5	22.1	158	117	31.0	435	2700	4000	0.80	17.0	0.880	34.5
1750	DA132K54A17-6	16.0	21.5	87	64	30.0	435	4100	5000	0.79	14.0	0.890	59.7
	DA132M54A17-6	20.0	26.8	109	80	38.0	435	3500	5000	0.78	18.5	0.900	59.6
	DA132L54A17-6	23.0	30.8	126	93	41.0	440	3200	5000	0.82	17.0	0.900	59.7
	DA132B54A17-6	26.5	35.5	145	107	50.0	440	3100	5000	0.79	24.0	0.910	59.5
2300	DA132K54A23-6	20.0	26.8	83	61	36.0	440	3900	5000	0.79	16.0	0.910	78.0
	DA132M54A23-6	24.0	32.2	100	74	44.0	445	3600	5000	0.78	21.5	0.910	77.8
	DA132L54A23-6	29.0	38.9	120	89	54.0	430	5000	5000	0.78	26.0	0.920	77.9
	DA132B54A23-6	32.0	42.9	133	98	57.0	440	4300	5000	0.81	24.0	0.920	78.0
3000	DA132K54A30-6	23.0	30.8	73	54	44.0	435	5000	5000	0.77	21.0	0.910	101.2
	DA132M54A30-6	27.0	36.2	86	63	52.0	425	5000	5000	0.76	26.0	0.920	101.1
	DA132L54A30-6	33.0	44.3	105	77	63.0	425	5000	5000	0.78	30.0	0.920	101.1
	DA132B54A30-6	37.0	49.6	118	87	68.0	435	5000	5000	0.79	31.0	0.930	101.1

Motor type	Maximum standstill torque $M_{0\ max}$ [Nm]	$M_{0\ max}$ [lbf ft]	Inertia J [kgm^2]	J [lb ft²]	Weight m [kg]	m [lb]
DA132K54A/R	192	142	0.074	1.756	126	278
DA132M54A/R	230	170	0.090	2.136	141	311
DA132L54A/R	268	198	0.105	2.492	156	344
DA132B54A/R	316	233	0.120	2.848	171	377

2.2.3. DA 132..54 W.. (IP 54 water-cooled)

Mains voltage 3 AC 400 V for converters with uncontrolled supply

Nom. speed	Motor type	Nom. power		Nom. torque		Nom. current	Nom. voltage	Limit speed with field weaken-ing	Max. operat. speed	Power factor	Magne-tizing current	Effi-ciency	Nom. Fre-quency
n_N min^{-1}		P_N kW	P_N hp	M_N Nm	M_N lbf ft	I_N A	U_N V	n_1 min^{-1}	n_{max} min^{-1}	cos φ	I_μ A	η_N	f_N Hz
1000	DA132K54W10-5	11.5	15.4	110	81	30.1	335	2600	5000	0.78	17.0	0.832	34.8
	DA132M54W10-5	13.7	18.4	131	97	36.0	330	3000	5000	0.78	20.7	0.846	34.7
	DA132L54W10-5	16.2	21.7	155	114	43.5	335	2600	5000	0.76	26.5	0.852	34.6
	DA132B54W10-5	18.3	24.5	175	129	45.5	340	2400	5000	0.79	25.5	0.864	34.6
1500	DA132K54W15-5	16.5	22.1	105	77	42.0	320	3000	5000	0.81	18.5	0.869	51.6
	DA132M54W15-5	20.0	26.8	127	94	48.5	340	2800	5000	0.79	22.5	0.879	51.5
	DA132L54W15-5	24.0	32.2	153	113	58.0	340	2800	5000	0.79	28.0	0.885	51.4
	DA132B54W15-5	27.5	36.9	175	129	66.0	345	2500	5000	0.78	33.0	0.890	51.4
2000	DA132K54W20-5	21.5	28.8	103	76	51.0	340	3800	5000	0.80	21.5	0.889	68.3
	DA132M54W20-5	26.5	35.5	127	94	66.0	335	4000	5000	0.77	32.5	0.894	68.1
	DA132L54W20-5	31.0	41.6	148	109	76.0	335	4000	5000	0.78	36.5	0.900	68.1
	DA132B54W20-5	36.0	48.3	172	127	83.0	345	3400	5000	0.80	36.5	0.904	68.1
2500	DA132K54W25-5	25.5	34.2	97	72	59.0	345	4200	5000	0.80	24.5	0.900	84.9
	DA132M54W25-5	31.0	41.6	118	87	73.0	335	5000	5000	0.80	31.5	0.905	84.8
	DA132L54W25-5	37.0	49.6	141	104	89.0	335	5000	5000	0.78	40.5	0.909	84.7
	DA132B54W25-5	43.0	57.7	164	121	99.0	345	4200	5000	0.79	44.0	0.913	84.7
3000	DA132K54W30-5	29.0	38.9	92	68	66.0	350	4500	5000	0.80	26.0	0.906	101.5
	DA132M54W30-5	36.0	48.3	115	85	86.0	335	5000	5000	0.79	36.0	0.911	101.4
	DA132L54W30-5	43.0	57.7	137	101	97.0	345	5000	5000	0.81	38.0	0.915	101.4
	DA132B54W30-5	50.0	67.1	159	117	109.0	355	4000	5000	0.81	44.0	0.919	101.4

Motor type	Maximum standstill torque $M_{0\,max}$ [Nm]	$M_{0\,max}$ [lbf ft]	Inertia J [kgm^2]	J [lb ft^2]	Weight m [kg]	m [lb]
DA132K54W	220	162	0.074	1.756	115	254
DA132M54W	262	193	0.090	2.136	130	287
DA132L54W	310	229	0.105	2.492	145	320
DA132B54W	350	258	0.120	2.848	160	353

2.3. DA 160

2.3.1. DA 160..23 A(R).. (IP 23 internally ventilated)

Mains voltage 3 AC 400 V for converters with uncontrolled supply

Nom. speed	Motor type	Nom. power		Nom. torque		Nom. current	Nom. voltage	Limit speed with field weaken-ing	Max. operat. speed	Power factor	Magne-tizing current	Effi-ciency	Nom. Fre-quency
n_N min^{-1}		P_N kW	P_N hp	M_N Nm	M_N lbf ft	I_N A	U_N V	n_1 min^{-1}	n_{max} min^{-1}	cos φ	I_μ A	η_N	f_N Hz
400	DA160K23A04-5	17.0	22.8	406	299	43.0	345	1000	4500	0.87	19.2	0.745	14.7
	DA160M23A04-5	21.0	28.2	501	370	54.0	340	1200	4500	0.87	25.2	0.762	14.6
	DA160L23A04-5	24.0	32.2	573	423	65.0	325	1200	4500	0.86	31.5	0.769	14.5
1000	DA160K23A10-5	40.0	53.6	382	282	90.0	345	2500	4500	0.85	38.0	0.870	34.7
	DA160M23A10-5	48.0	64.4	458	338	111.0	335	3000	4500	0.85	49.0	0.882	34.5
	DA160L23A10-5	56.0	75.1	535	395	123.0	345	2500	4500	0.87	50.0	0.885	34.6
1500	DA160K23A15-5	55.0	73.8	350	258	120.0	350	2300	4500	0.85	41.5	0.900	51.5
	DA160M23A15-5	67.0	89.8	427	315	147.0	345	2400	4500	0.83	55.0	0.908	51.3
	DA160L23A15-5	78.0	104.6	497	367	170.0	345	2400	4500	0.85	60.0	0.911	51.3
2000	DA160K23A20-5	70.0	93.9	334	246	148.0	350	3000	4500	0.85	46.0	0.915	68.2
	DA160M23A20-5	85.0	114.0	406	299	192.0	330	4000	4500	0.84	66.0	0.922	68.0
	DA160L23A20-5	97.0	130.1	463	341	227.0	322	4000	4500	0.83	86.0	0.925	67.9
3000	DA160K23A30-5	87.0	116.7	277	204	182.0	350	4500	4500	0.86	47.0	0.929	101.6
	DA160M23A30-5	103.0	138.1	328	242	212.0	350	4500	4500	0.85	55.0	0.934	101.5
	DA160L23A30-5	120.0	160.9	382	282	255.0	345	4500	4500	0.84	82.0	0.938	101.2

Mains voltage 3 AC 480 V for converters with uncontrolled supply

Nom. speed	Motor type	Nom. power		Nom. torque		Nom. current	Nom. voltage	Limit speed with field weaken -ing	Max. operat. speed	Power factor	Magne-tizing current	Effi-ciency	Nom. Fre-quency
n_N min^{-1}		P_N kW	P_N hp	M_N Nm	M_N lbf ft	I_N A	U_N V	n_1 min^{-1}	n_{max} min^{-1}	cos φ	I_μ A	η_N	f_N Hz
400	DA160K23A04-6	17.0	22.8	406	299	36.0	425	1200	2000	0.88	15.5	0.740	14.7
	DA160M23A04-6	21.0	28.2	501	370	43.0	435	1100	2000	0.86	21.0	0.760	14.6
	DA160L23A04-6	24.0	32.2	573	423	50.0	420	1200	2000	0.85	24.0	0.770	14.5
1000	DA160K23A10-6	40.0	53.6	382	282	70.0	440	2100	4500	0.85	30.0	0.870	34.7
	DA160M23A10-6	48.0	64.4	458	338	88.0	425	3000	4500	0.84	40.0	0.880	34.6
	DA160L23A10-6	56.0	75.1	535	395	103.0	410	3400	4500	0.86	41.5	0.890	34.6
1500	DA160K23A15-6	55.0	73.8	350	258	93.0	445	2200	4500	0.86	31.0	0.910	51.5
	DA160M23A15-6	67.0	89.8	427	315	120.0	430	3100	4500	0.83	45.0	0.910	51.3
	DA160L23A15-6	78.0	104.6	497	367	135.0	440	2800	4500	0.84	47.0	0.910	51.4
2000	DA160K23A20-6	70.0	93.9	334	246	120.0	440	3200	4500	0.85	37.0	0.910	68.2
	DA160M23A20-6	85.0	114.0	406	299	145.0	440	3400	4500	0.84	51.0	0.920	68.0
	DA160L23A20-6	97.0	130.1	463	341	165.0	440	3400	4500	0.84	57.0	0.930	68.0
3000	DA160K23A30-6	87.0	116.7	277	204	153.0	410	4500	4500	0.86	41.0	0.930	101.5
	DA160M23A30-6	103.0	138.1	328	242	175.0	425	4500	4500	0.86	46.0	0.930	101.4
	DA160L23A30-6	120.0	160.9	382	282	205.0	435	4500	4500	0.84	65.0	0.940	101.2

Motor type	Maximum standstill torque $M_{0\ max}$ [Nm]	$M_{0\ max}$ [lbf ft]	Inertia J [kgm^2]	J [lb ft²]	Weight m [kg]	m [lb]
DA160K23A/R	650	479	0.245	5.814	235	518
DA160M23A/R	802	592	0.303	7.190	270	595
DA160L23A/R	917	676	0.346	8.211	305	672

2.3.2. DA 160..54 A(R).. (IP 54 surface-cooled)

Mains voltage 3 AC 400 V for converters with uncontrolled supply

Nom. speed	Motor type	Nom. power		Nom. torque		Nom. current	Nom. voltage	Limit speed with field weaken -ing	Max. operat. speed	Power factor	Magne-tizing current	Effi-ciency	Nom. Fre-quency
n_N min^{-1}		P_N kW	P_N hp	M_N Nm	M_N lbf ft	I_N A	U_N V	n_1 min^{-1}	n_{max} min^{-1}	cos φ	I_μ A	η_N	f_N Hz
400	DA160K54A04-5	9.7	13.0	232	171	25.0	345	1000	4500	0.81	14.2	0.801	14.2
	DA160M54A04-5	11.7	15.7	279	206	31.8	320	1200	4500	0.81	18.3	0.818	14.2
	DA160L54A04-5	13.5	18.1	322	237	34.0	335	1200	4500	0.82	18.8	0.829	14.2
1000	DA160K54A10-5	24.0	32.2	229	169	56.0	340	2800	4500	0.81	29.5	0.895	34.3
	DA160M54A10-5	29.0	38.9	277	204	70.0	345	2500	4500	0.77	41.0	0.902	34.2
	DA160L54A10-5	33.0	44.3	315	232	73.0	345	2500	4500	0.83	36.0	0.909	34.2
1350	DA160K54A13-5	30.0	40.2	212	156	67.0	350	2100	4500	0.81	30.0	0.912	46.0
	DA160M54A13-5	37.0	49.6	262	193	89.0	330	2700	4500	0.80	42.6	0.917	45.9
	DA160L54A13-5	44.0	59.0	311	229	102.0	335	2500	4500	0.81	46.2	0.921	45.9
1750	DA160K54A17-5	38.0	51.0	207	153	89.0	335	3300	4500	0.81	39.4	0.921	59.3
	DA160M54A17-5	47.0	63.0	256	189	100.0	350	2700	4500	0.84	38.7	0.927	59.4
	DA160L54A17-5	53.0	71.1	289	213	113.0	350	2700	4500	0.84	43.0	0.930	59.4
2300	DA160K54A23-5	46.0	61.7	191	141	108.0	335	4300	4500	0.80	49.0	0.929	77.6
	DA160M54A23-5	57.0	76.4	237	175	127.0	345	3700	4500	0.81	55.0	0.934	77.6
	DA160L54A23-5	65.0	87.2	270	199	150.0	330	4500	4500	0.81	65.0	0.937	77.5
3000	DA160K54A30-5	55.0	73.8	175	129	121.0	350	4500	4500	0.81	50.5	0.935	101.0
	DA160M54A30-5	67.0	89.8	213	157	146.0	345	4500	4500	0.83	56.0	0.938	101.0
	DA160L54A30-5	75.0	100.6	239	176	175.0	335	4500	4500	0.80	79.0	0.939	100.8

Mains voltage 3 AC 480 V for converters with uncontrolled supply

Nom. speed	Motor type	Nom. power		Nom. torque		Nom. current	Nom. voltage	Limit speed with field weaken -ing	Max. operat. speed	Power factor	Magne-tizing current	Effi-ciency	Nom. Fre-quency
n_N min^{-1}		P_N kW	P_N hp	M_N Nm	M_N lbf ft	I_N A	U_N V	n_1 min^{-1}	n_{max} min^{-1}	cos φ	I_μ A	η_N	f_N Hz
400	DA160K54A04-6	9.7	13.0	232	171	19.0	445	1600	2000	0.81	11.2	0.800	14.2
	DA160M54A04-6	11.7	15.7	279	206	24.0	425	1500	2000	0.82	11.7	0.820	14.2
	DA160L54A04-6	13.5	18.1	322	237	27.0	430	1600	2000	0.82	14.4	0.830	14.2
1000	DA160K54A10-6	24.0	32.2	229	169	45.0	430	3000	4500	0.81	24.0	0.890	34.3
	DA160M54A10-6	29.0	38.9	277	204	56.0	425	4000	4500	0.78	32.0	0.900	34.2
	DA160L54A10-6	33.0	44.3	315	232	58.0	430	2900	4500	0.84	27.0	0.910	34.2
1350	DA160K54A13-6	30.0	40.2	212	156	53.0	440	2900	4500	0.81	24.0	0.910	46.0
	DA160M54A13-6	37.0	49.6	262	193	67.0	435	2900	4500	0.80	32.0	0.920	45.9
	DA160L54A13-6	44.0	59.0	311	229	82.0	415	3700	4500	0.81	36.0	0.920	46.0
1750	DA160K54A17-6	38.0	51.0	207	153	66.0	440	3000	4500	0.81	29.0	0.920	59.3
	DA160M54A17-6	47.0	63.0	256	189	80.0	435	3100	4500	0.84	31.0	0.930	59.4
	DA160L54A17-6	52.0	69.7	284	209	87.0	440	2900	4500	0.85	32.0	0.930	59.4
2300	DA160K54A23-6	46.0	61.7	191	141	83.0	430	4500	4500	0.79	38.0	0.930	77.6
	DA160M54A23-6	57.0	76.4	237	175	95.0	445	3400	4500	0.83	37.0	0.930	77.7
	DA160L54A23-6	65.0	87.2	270	199	110.0	445	3400	4500	0.83	41.0	0.940	77.6
3000	DA160K54A30-6	55.0	73.8	175	129	105.0	415	4500	4500	0.80	44.0	0.930	100.9
	DA160M54A30-6	67.0	89.8	213	157	120.0	420	4500	4500	0.83	46.0	0.940	101.0
	DA160L54A30-6	75.0	100.6	239	176	140.0	420	4500	4500	0.78	63.0	0.950	100.8

Motor type	Maximum standstill torque $M_{0\ max}$ [Nm]	$M_{0\ max}$ [lbf ft]	Inertia J [kgm^2]	J [lb ft²]	Weight m [kg]	m [lb]
DA160K54A/R	464	342	0.245	5.814	235	518
DA160M54A/R	558	412	0.303	7.190	270	595
DA160L54A/R	644	475	0.346	8.211	305	672

2.3.3. DA 160..54 W.. (IP 54 water-cooled)

Mains voltage 3 AC 400 V for converters with uncontrolled supply

Nom. speed	Motor type	Nom. power		Nom. torque		Nom. current	Nom. voltage	Limit speed with field weaken -ing	Max. operat. speed	Power factor	Magne-tizing current	Effi-ciency	Nom. Fre-quency
n_N min^{-1}		P_N kW	P_N hp	M_N Nm	M_N lbf ft	I_N A	U_N V	n_1 min^{-1}	n_{max} min^{-1}	cos φ	I_μ A	η_N	f_N Hz
1000	DA160K54W10-5	26.0	34.9	248	183	59.0	345	2500	4500	0.82	28.5	0.882	34.5
	DA160M54W10-5	32.0	42.9	306	226	72.0	345	2500	4500	0.83	35.0	0.892	34.4
	DA160L54W10-5	37.0	49.6	353	260	85.0	340	3000	4500	0.83	42.0	0.896	34.4
1500	DA160K54W15-5	38.0	51.0	242	178	86.0	345	2400	4500	0.81	36.5	0.905	51.3
	DA160M54W15-5	47.0	63.0	299	221	105.0	345	2400	4500	0.83	43.5	0.912	51.2
	DA160L54W15-5	55.0	73.8	350	258	118.0	355	2200	4500	0.82	49.5	0.915	51.2
2000	DA160K54W20-5	48.0	64.4	229	169	100.0	350	3000	4500	0.85	36.0	0.920	68.0
	DA160M54W20-5	60.0	80.5	287	212	131.0	345	3500	4500	0.83	54.0	0.925	67.9
	DA160L54W20-5	70.0	93.9	334	246	153.0	350	3000	4500	0.82	66.0	0.928	67.8
2500	DA160K54W25-5	58.0	77.8	222	164	127.0	345	4500	4500	0.81	53.0	0.928	84.5
	DA160M54W25-5	72.0	96.6	275	203	149.0	355	3500	4500	0.84	56.0	0.932	84.5
	DA160L54W25-5	82.0	110.0	313	231	176.0	350	4000	4500	0.82	74.0	0.935	84.4
3000	DA160K54W30-5	65.0	87.2	207	153	141.0	345	4500	4500	0.82	58.0	0.933	101.2
	DA160M54W30-5	80.0	107.3	255	188	169.0	350	4500	4500	0.83	66.0	0.936	101.1
	DA160L54W30-5	92.0	123.4	293	216	210.0	325	4500	4500	0.83	85.0	0.938	101.1

Motor type	Maximum standstill torque $M_{0\ max}$ [Nm]	$M_{0\ max}$ [lbf ft]	Inertia J [kgm^2]	J [lb ft²]	Weight m [kg]	m [lb]
DA160K54W	496	366	0.245	5.814	235	518
DA160M54W	612	451	0.303	7.190	275	606
DA160L54W	706	521	0.346	8.211	310	683

2.4. DA 180

2.4.1. DA 180..23 A(R).. (IP 23 internally ventilated)

Mains voltage 3 AC 400 V for converters with uncontrolled supply

Nom. speed	Motor type	Nom. power		Nom. torque		Nom. current	Nom. voltage	Limit speed with field weaken -ing	Max. operat. speed	Power factor	Magne-tizing current	Effi-ciency	Nom. Fre-quency
n_N min^{-1}		P_N kW	P_N hp	M_N Nm	M_N lbf ft	I_N A	U_N V	n_1 min^{-1}	n_{max} min^{-1}	cos φ	I_μ A	η_N	f_N Hz
400	DA180M23A04-5	30.0	40.2	716	528	74.0	345	1200	4300	0.88	29.8	0.773	14.5
	DA180L23A04-5	40.0	53.6	955	704	101.0	335	1200	4300	0.86	46.5	0.795	14.4
1000	DA180M23A10-5	70.0	93.9	669	493	159.0	345	1700	4300	0.84	55.6	0.880	34.6
	DA180L23A10-5	90.0	120.7	860	634	219.0	330	2000	4300	0.81	94.0	0.894	34.4
1500	DA180M23A15-5	96.0	128.7	611	451	214.0	340	2900	4300	0.83	74.3	0.912	51.2
	DA180L23A15-5-	125.0	167.6	796	587	291.0	330	3000	4300	0.82	112.0	0.920	51.0
2000	DA180M23A20-5	120.0	160.9	573	423	288.0	330	4000	4300	0.82	105.0	0.927	67.8
	DA180L23A20-5	152.0	203.8	726	535	345.0	335	4000	4300	0.82	126.0	0.932	67.7
3000	DA180M23A30-5	155.0	207.9	493	364	330.0	350	4300	4300	0.82	104.0	0.942	101.1
	DA180L23A30-5	200.0	268.2	637	470	425.0	350	4300	4300	0.82	142.0	0.946	101.0

Mains voltage 3 AC 480 V for converters with uncontrolled supply

Nom. speed	Motor type	Nom. power		Nom. torque		Nom. current	Nom. voltage	Limit speed with field weaken -ing	Max. operat. speed	Power factor	Magne-tizing current	Effi-ciency	Nom. Fre-quency
n_N min^{-1}		P_N kW	P_N hp	M_N Nm	M_N lbf ft	I_N A	U_N V	n_1 min^{-1}	n_{max} min^{-1}	cos φ	I_μ A	η_N	f_N Hz
400	DA180M23A04-6	30.0	40.2	716	528	60.0	420	1100	2000	0.91	24.0	0.750	14.6
	DA180L23A04-6	40.0	53.6	955	704	80.0	420	1200	2000	0.85	38.0	0.790	14.4
1000	DA180M23A10-6	70.0	93.9	669	493	125.0	445	2200	4300	0.83	44.0	0.880	34.6
	DA180L23A10-6	90.0	120.7	860	634	170.0	420	2400	4300	0.81	72.0	0.900	34.4
1500	DA180M23A15-6	96.0	128.7	611	451	167.0	440	2500	4300	0.83	58.0	0.830	51.2
	DA180L23A15-6	125.0	167.6	796	587	210.0	450	2900	4300	0.84	72.0	0.920	51.1
2000	DA180M23A20-6	120.0	160.9	573	423	205.0	445	3000	4300	0.81	75.0	0.930	67.8
	DA180L23A20-6	152.0	203.8	726	535	275.0	415	4300	4300	0.82	98.0	0.930	67.7
3000	DA180M23A3065	155.0	207.9	493	364	440.0	440	4300	4300	0.83	85.0	0.940	101.1
	DA180L23A30-6	200.0	268.2	637	470	425.0	445	4300	4300	0.85	91.0	0.940	101.1

Motor type	Maximum standstill torque $M_{0\ max}$ [Nm]	$M_{0\ max}$ [lbf ft]	Inertia J [kgm^2]	J [lb ft^2]	Weight m [kg]	m [lb]
DA180M23A/R	1146	845	0.515	12.221	350	772
DA180L23A/R	1528	1127	0.676	16.041	430	948

2.4.2. DA 180..54 A(R).. (IP 54 surface-cooled)

Mains voltage 3 AC 400 V for converters with uncontrolled supply

Nom. speed	Motor type	Nom. power		Nom. torque		Nom. current	Nom. voltage	Limit speed with field weaken -ing	Max. operat. speed	Power factor	Magne-tizing current	Effi-ciency	Nom. Fre-quency
n_N min^{-1}		P_N kW	P_N hp	M_N Nm	M_N lbf ft	I_N A	U_N V	n_1 min^{-1}	n_{max} min^{-1}	cos φ	I_μ A	η_N	f_N Hz
400	DA180M54A04-5	16.0	21.5	382	282	39.5	335	1200	4300	0.84	20.0	0.830	14.1
	DA180L54A04-5	20.0	26.8	478	353	49.5	340	1200	4300	0.81	27.0	0.852	14.0
1000	DA180M54A10-5	38.0	51.0	363	268	89.0	335	2000	4300	0.82	39.0	0.907	34.2
	DA180L54A10-5	50.0	67.1	478	353	107.0	350	1500	4300	0.84	42.0	0.915	34.2
1350	DA180M54A13-5	52.0	69.7	368	271	125.0	335	2700	4300	0.79	60.0	0.921	45.8
	DA180L54A13-5	68.0	91.2	481	355	142.0	350	2100	4300	0.86	49.0	0.925	45.9
1750	DA180M54A17-5	63.0	84.5	344	254	137.0	345	3000	4300	0.83	52.0	0.932	59.2
	DA180L54A17-5	85.0	114.0	464	342	192.0	330	3500	4300	0.82	78.0	0.936	59.1
2300	DA180M54A23-5	75.0	100.6	311	229	179.0	320	4300	4300	0.80	76.0	0.938	77.4
	DA180L54A23-5	100.0	134.1	415	306	224.0	335	4300	4300	0.82	92.0	0.942	77.4
3000	DA180M54A30-5	87.0	116.7	277	204	210.0	320	4300	4300	0.80	88.0	0.940	100.7
	DA180L54A30-5	105.0	140.8	334	246	261.0	315	4300	4300	0.80	115.0	0.940	100.6

Mains voltage 3 AC 480 V for converters with uncontrolled supply

Nom. speed	Motor type	Nom. power		Nom. torque		Nom. current	Nom. voltage	Limit speed with field weaken -ing	Max. operat. speed	Power factor	Magne-tizing current	Effi-ciency	Nom. Fre-quency
n_N min^{-1}		P_N kW	P_N hp	M_N Nm	M_N lbf ft	I_N A	U_N V	n_1 min^{-1}	n_{max} min^{-1}	cos φ	I_μ A	η_N	f_N Hz
400	DA180M54A04-6	16.0	21.5	382	282	31.0	430	1400	2000	0.83	16.0	0.840	14.1
	DA180L54A04-6	20.0	26.8	478	353	39.0	425	1800	2000	0.80	22.0	0.860	14.0
1000	DA180M54A10-6	38.0	51.0	363	268	70.0	430	2200	4300	0.80	31.0	0.910	34.2
	DA180L54A10-6	50.0	67.1	478	353	88.0	435	2000	4300	0.83	35.0	0.920	34.2
1350	DA180M54A13-6	52.0	69.7	368	271	100.0	420	3500	4300	0.77	49.0	0.930	45.8
	DA180L54A13-6	68.0	91.2	481	355	110.0	445	2100	4300	0.85	36.0	0.930	46.0
1750	DA180M54A17-6	63.0	84.5	344	254	107.0	440	2800	4300	0.82	40.0	0.940	59.2
	DA180L54A17-6	82.0	110.0	447	330	135.0	450	2500	4300	0.83	50.0	0.940	59.2
2300	DA180M54A23-6	75.0	100.6	311	229	128.0	450	3300	4300	0.80	53.0	0.940	77.5
	DA180L54A23-6	100.0	134.1	415	306	180.0	425	4300	4300	0.80	73.0	0.950	77.4
3000	DA180M54A30-6	87.0	116.7	277	204	165.0	410	4300	4300	0.78	72.0	0.950	100.7
	DA180L54A30-6	105.0	140.8	334	246	195.0	425	4300	4300	0.79	85.0	0.950	100.6

Motor type	Maximum standstill torque $M_{0\,max}$ [Nm]	$M_{0\,max}$ [lbf ft]	Inertia J [kgm^2]	J [lb ft²]	Weight m [kg]	m [lb]
DA180M54A/R	764	563	0.515	12.221	330	728
DA180L54A/R	956	705	0.676	16.041	425	937

2.4.3. DA 180..54 W.. (IP 54 water-cooled)

Mains voltage 3 AC 400 V for converters with uncontrolled supply

Nom. speed	Motor type	Nom. power		Nom. torque		Nom. current	Nom. voltage	Limit speed with field weaken -ing	Max. operat. speed	Power factor	Magne-tizing current	Effi-ciency	Nom. Fre-quency
n_N min^{-1}		P_N kW	P_N hp	M_N Nm	M_N lbf ft	I_N A	U_N V	n_1 min^{-1}	n_{max} min^{-1}	cos φ	I_μ A	η_N	f_N Hz
1000	DA180M54W10-5	40.0	53.6	382	282	92.0	335	2000	4300	0.82	44.0	0.909	34.1
	DA180L54W10-5	57.0	76.4	544	401	132.0	335	2000	4300	0.82	66.0	0.913	34.1
1500	DA180M54W15-5	60.0	80.5	382	282	130.0	350	2300	4300	0.83	49.0	0.924	51.0
	DA180L54W15-5	84.0	112.6	535	395	180.0	350	2300	4300	0.84	66.0	0.928	50.9
2000	DA180M54W20-5	76.0	101.9	363	268	166.0	350	3000	4300	0.81	71.0	0.932	67.5
	DA180L54W20-5	105.0	140.8	501	370	255.0	315	4000	4300	0.80	113.0	0.935	67.5
2500	DA180M54W25-5	92.0	123.4	351	259	197.0	355	3500	4300	0.81	81.0	0.937	84.2
	DA180L54W25-5	122.0	163.6	466	344	248.0	360	3000	4300	0.83	89.0	0.940	84.2
3000	DA180MW30-5	102.0	136.8	325	240	235.0	340	4300	4300	0.79	103.0	0.937	100.8
	DA180L54W30-5	135.0	181.0	430	317	312.0	340	4300	4300	0.79	141.0	0.940	100.7

Motor type	Maximum standstill torque $M_{0\ max}$ [Nm]	$M_{0\ max}$ [lbf ft]	Inertia J [kgm^2]	J [lb ft^2]	Weight m [kg]	m [lb]
DA180M54W	764	563	0.515	12.221	330	728
DA180L54W	1088	802	0.676	16.041	435	959

2.5. DA 225

2.5.1. DA 225..23 A(R).. (IP 23 internally ventilated)

Mains voltage 3 AC 400 V for converters with uncontrolled supply

Nom. speed	Motor type	Nom. power		Nom. torque		Nom. current	Nom. voltage	Limit speed with field weaken -ing	Max. operat. speed	Power factor	Magne-tizing current	Effi-ciency	Nom. Fre-quency
n_N min^{-1}		P_N kW	P_N hp	M_N Nm	M_N lbf ft	I_N A	U_N V	n_1 min^{-1}	n_{max} min^{-1}	cos φ	I_μ A	η_N	f_N Hz
400	DA225K23A04-5	50.0	67.1	1194	881	118.0	340	1200	3800	0.86	49.5	0.830	14.0
	DA225M23A04-5	65.0	87.2	1552	1145	153.0	340	1200	3800	0.85	69.0	0.847	14.0
	DA225L23A04-5	78.0	104.6	1862	1373	179.0	340	1200	3800	0.86	74.0	0.856	13.9
1000	DA225K23A10-5	115.0	154.2	1098	810	243.0	350	1500	3800	0.86	74.0	0.908	34.2
	DA225M23A10-5	147.0	197.1	1404	1036	315.0	345	1700	3800	0.85	105.0	0.919	34.0
	DA225L23A10-5	176.0	236.0	1681	1240	373.0	350	1500	3800	0.84	128.0	0.925	34.0
1500	DA225K23A15-5	160.0	214.6	1019	752	371.0	325	3000	3800	0.83	129.0	0.930	50.7
	DA225M23A15-5	205.0	274.9	1305	963	449.0	340	2800	3800	0.83	163.0	0.937	50.6
1750	DA225K23A17-5	176.0	236.0	960	708	366.0	350	2700	3800	0.85	102.0	0.933	59.2
	DA225M23A17-5	217.0	291.0	1184	873	446.0	345	3000	3800	0.87	106.0	0.938	59.1
	DA225L23A17-5	265.0	355.4	1446	1067	567.0	345	3000	3800	0.83	205.0	0.946	58.9
2000	DA225K23A20-5	195.0	261.5	931	687	436.0	335	3800	3800	0.82	153.0	0.939	67.4
	DA225M23A20-5	240.0	321.8	1146	845	558.0	320	3800	3800	0.82	196.0	0.944	67.3
2500	DA225K23A25-5	220.0	295.0	840	620	541.0	315	3800	3800	0.80	224.0	0.942	84.0
	DA225M23A25-5	260.0	348.7	993	732	529.0	345	3800	3800	0.87	132.0	0.947	84.1
3000	DA225K23A30-5	240.0	321.8	764	563	508.0	345	3800	3800	0.84	170.0	0.946	100.7

Mains voltage 3 AC 480 V for converters with uncontrolled supply

Nom. speed	Motor type	Nom. power		Nom. torque		Nom. current	Nom. voltage	Limit speed with field weaken-ing	Max. operat. speed	Power factor	Magne-tizing current	Effi-ciency	Nom. Fre-quency
n_N min^{-1}		P_N kW	P_N hp	M_N Nm	M_N lbf ft	I_N A	U_N V	n_1 min^{-1}	n_{max} min^{-1}	cos φ	I_μ A	η_N	f_N Hz
400	DA225K23A04-6	50.0	67.1	1194	881	92.0	440	900	2000	0.87	37.0	0.830	14.1
	DA225M23A04-6	65.0	87.2	1552	1145	120.0	445	900	2000	0.85	51.0	0.850	14.0
	DA225L23A04-6	78.0	104.6	1862	1373	142.0	435	1000	2000	0.86	58.0	0.860	13.9
1000	DA225K23A10-6	115.0	154.2	1098	810	200.0	440	1500	3800	0.85	60.0	0.910	34.2
	DA225M23A10-6	147.0	197.1	1404	1036	270.0	405	2400	3800	0.84	93.0	0.920	34.0
	DA225L23A10-6	176.0	236.0	1681	1240	315.0	420	2200	3800	0.84	108.0	0.930	34.0
1500	DA225K23A15-6	160.0	214.6	1019	752	265.0	450	2000	3800	0.83	88.0	0.930	50.8
	DA225M23A15-6	205.0	274.9	1305	963	360.0	425	3200	3800	0.82	130.0	0.940	50.7
1750	DA225K23A17-6	176.0	236.0	960	708	295.0	440	2800	3800	0.83	100.0	0.940	59.1
	DA225M23A17-6	217.0	291.0	1184	873	355.0	435	2900	3800	0.87	85.0	0.940	59.1
	DA225L23A17-6	265.0	355.4	1446	1067	430.0	450	2200	3800	0.85	134.0	0.940	59.0
2000	DA225K23A20-6	195.0	261.5	931	687	350.0	430	3800	3800	0.80	135.0	0.940	67.4
	DA225M23A20-6	240.0	321.8	1146	845	415.0	440	3500	3800	0.81	162.0	0.950	67.3
2500	DA225K23A25-6	220.0	295.0	840	620	410.0	420	3800	3800	0.79	168.0	0.950	84.0
	DA225M23A25-6	260.0	348.7	993	732	405.0	455	3000	3800	0.87	91.0	0.950	84.1
3000	DA225K23A30-6	240.0	321.8	764	563	385.0	455	3700	3800	0.84	119.0	0.950	100.7

Motor type	Maximum standstill torque $M_{0\ max}$ [Nm]	$M_{0\ max}$ [lbf ft]	Inertia J [kgm^2]	J [lb ft²]	Weight m [kg]	m [lb]
DA225K23A/R	1910	1409	1.313	31.157	610	1345
DA225M23A/R	2483	1831	1.710	40.578	710	1565
DA225L23A/R	2979	2197	2.063	48.955	800	1764

2.5.2. DA 225..54 A(R).. (IP 54 surface-cooled)

Mains voltage 3 AC 400 V for converters with uncontrolled supply

Nom. speed	Motor type	Nom. power		Nom. torque		Nom. current	Nom. voltage	Limit speed with field weaken -ing	Max. operat. speed	Power factor	Magne-tizing current	Effi-ciency	Nom. Fre-quency
n_N min^{-1}		P_N kW	P_N hp	M_N Nm	M_N lbf ft	I_N A	U_N V	n_1 min^{-1}	n_{max} min^{-1}	cos φ	I_μ A	η_N	f_N Hz
400	DA225K54A04-5	27.0	36.2	645	476	70.0	325	1200	3800	0.79	40.0	0.867	13.8
	DA225M54A04-5	36.0	48.3	860	634	90.0	330	1200	3800	0.80	51.0	0.882	13.8
	DA225L54A04-5	43.0	57.7	1027	757	103.0	335	1200	3800	0.80	57.0	0.891	13.7
1000	DA225K54A10-5	64.0	85.8	611	451	150.0	330	2000	3800	0.80	70.0	0.929	33.8
	DA225M54A10-5	87.0	116.7	831	613	205.0	325	2000	3800	0.81	92.0	0.935	33.8
	DA225L54A10-5	107.0	143.5	1022	754	250.0	325	2000	3800	0.82	107.0	0.938	33.8
1350	DA225K54A13-5	85.0	114.0	580	428	193.0	330	2700	3800	0.80	88.0	0.941	45.5
	DA225M54A13-5	110.0	147.5	778	574	236.0	345	2300	3800	0.83	96.0	0.945	45.5
	DA225L54A13-5	135.0	181.0	955	704	299.0	340	2600	3800	0.81	128.0	0.947	45.4
1750	DA225K54A17-5	98.0	131.4	535	395	221.0	335	3500	3800	0.81	95.0	0.946	58.8
	DA225M54A17-5	130.0	174.3	709	523	280.0	345	3000	3800	0.82	112.0	0.950	58.8
	DA225L54A17-5	157.0	210.5	857	632	375.0	315	3500	3800	0.81	161.0	0.952	58.7
2300	DA225K54A23-5	112.0	150.2	465	343	257.0	330	3800	3800	0.81	107.0	0.948	77.1
	DA225M54A23-5	143.0	191.8	594	438	333.0	325	3800	3800	0.80	144.0	0.951	77.1
	DA225L54A23-5	175.0	234.7	727	536	362.0	340	3800	3800	0.86	110.0	0.954	77.2
3000	DA225K54A30-5	122.0	163.6	388	286	252.0	350	3800	3800	0.85	73.0	0.952	100.6
	DA225M54A30-5	155.0	207.9	493	364	328.0	335	3800	3800	0.86	98.0	0.952	100.5

Mains voltage 3 AC 480 V for converters with uncontrolled supply

Nom. speed	Motor type	Nom. power		Nom. torque		Nom. current	Nom. voltage	Limit speed with field weaken -ing	Max. operat. speed	Power factor	Magne-tizing current	Effi-ciency	Nom. Fre-quency
n_N min^{-1}		P_N kW	P_N hp	M_N Nm	M_N lbf ft	I_N A	U_N V	n_1 min^{-1}	n_{max} min^{-1}	cos φ	I_μ A	η_N	f_N Hz
400	DA225K54A04-6	27.0	36.2	645	476	55.0	420	1600	2000	0.78	33.0	0.870	13.8
	DA225M54A04-6	36.0	48.3	860	634	70.0	430	1500	2000	0.78	41.0	0.880	13.8
	DA225L54A04-6	43.0	57.7	1027	757	77.0	445	900	2000	0.82	40.0	0.890	13.8
1000	DA225K54A10-6	64.0	85.8	611	451	110.0	445	1500	3800	0.81	48.0	0.930	33.8
	DA225M54A10-6	87.0	116.7	831	613	155.0	435	2200	3800	0.80	71.0	0.930	33.8
	DA225L54A10-6	107.0	143.5	1022	754	180.0	445	1700	3800	0.83	72.0	0.940	33.8
1350	DA225K54A13-6	85.0	114.0	601	443	150.0	440	2600	3800	0.79	70.0	0.940	45.5
	DA225M54A13-6	110.0	147.5	778	574	200.0	430	3100	3800	0.78	95.0	0.940	45.4
	DA225L54A13-6	135.0	181.0	955	704	240.0	435	3300	3800	0.79	110.0	0.950	45.4
1750	DA225K54A17-6	95.0	127.4	518	382	220.0	445	2800	3800	0.83	59.0	0.940	58.8
	DA225M54A17-6	130.0	174.3	709	523	225.0	430	3800	3800	0.82	89.0	0.950	58.8
	DA225L54A17-6	157.0	210.5	857	632	280.0	425	3800	3800	0.80	123.0	0.950	58.7
2300	DA225K54A23-6	112.0	150.2	465	343	205.0	440	3800	3800	0.76	102.0	0.950	77.1
	DA225M54A23-6	143.0	191.8	594	438	250.0	440	3800	3800	0.79	111.0	0.950	77.1
	DA225L54A23-6	175.0	234.7	727	536	270.0	455	3100	3800	0.86	78.0	0.950	77.2
3000	DA225K54A30-6	122.0	163.6	388	286	200.0	435	3800	3800	0.86	57.0	0.950	100.6
	DA225M54A30-6	155.0	207.9	493	364	245.0	450	3800	3800	0.86	71.0	0.950	100.5

Motor type	Maximum standstill torque $M_{0\ max}$ [Nm]	$M_{0\ max}$ [lbf ft]	Inertia J [kgm^2]	J [lb ft^2]	Weight m [kg]	m [lb]
DA225K54A/R	1290	951	1.313	31.157	610	1345
DA225M54A/R	1720	1269	1.710	40.578	710	1565
DA225L54A/R	2054	1515	2.063	48.955	800	1764

2.5.3. DA 225..54 W.. (IP 54 water-cooled)

Mains voltage 3 AC 400 V for converters with uncontrolled supply

Nom. speed	Motor type	Nom. power		Nom. torque		Nom. current	Nom. voltage	Limit speed with field weaken -ing	Max. operat. speed	Power factor	Magne-tizing current	Effi-ciency	Nom. Fre-quency
n_N min^{-1}		P_N kW	P_N hp	M_N Nm	M_N lbf ft	I_N A	U_N V	n_1 min^{-1}	n_{max} min^{-1}	cos φ	I_μ A	η_N	f_N Hz
1000	DA225K54W10-5	68.0	91.2	649	479	161.0	325	2000	3800	0.81	71.0	0.926	33.9
	DA225M54W10-5	95.0	127.4	907	669	223.0	330	2000	3800	0.80	100.0	0.932	33.8
	DA225L54W10-5	120.0	160.9	1146	845	278.0	330	2000	3800	0.80	123.0	0.935	33.8
1500	DA225K54W15-5	97.0	130.1	618	456	208.0	350	2300	3800	0.81	85.0	0.940	50.6
	DA225M54W15-5	135.0	181.0	860	634	326.0	320	3000	3800	0.80	146.0	0.944	50.5
1750	DA225K54W17-5	108.0	144.8	589	434	244.0	340	3200	3800	0.80	107.0	0.943	58.9
	DA225M54W17-5	148.0	198.5	808	596	313.0	360	2300	3800	0.80	133.0	0.948	58.8
	DA225L54W17-5	185.0	248.1	1010	745	430.0	330	3500	3800	0.79	194.0	0.948	58.8
2000	DA225K54W20-5	120.0	160.9	573	423	300.0	310	3800	3800	0.79	137.0	0.943	67.2
	DA225M54W20-5	162.0	217.2	774	571	410.0	310	3800	3800	0.78	196.0	0.947	67.1
	DA225L54W20-5	205.0	274.9	979	722	423.0	355	3000	3800	0.82	162.0	0.952	67.2
2500	DA225K54W25-5	135.0	181.0	516	381	280.0	360	3200	3800	0.82	108.0	0.948	83.8
	DA225M54W25-5	185.0	248.1	707	521	388.0	355	3500	3800	0.81	153.0	0.951	83.8
3000	DA225K54W30-5	150.0	201.2	478	353	360.0	330	3800	3800	0.78	164.0	0.946	100.4

Motor type	Maximum standstill torque $M_{0\ max}$ [Nm]	$M_{0\ max}$ [lbf ft]	Inertia J [kgm^2]	J [lb ft²]	Weight m [kg]	m [lb]
DA225K54W	1298	957	1.313	31.157	600	1323
DA225M54W	1796	1325	1.710	40.578	710	1565
DA225L54W	2292	1690	2.063	48.955	810	1786

2.6. DA 280

2.6.1. DA 280..23 R.. (IP 23 internally ventilated)

Mains voltage 3 AC 400 V for converters with uncontrolled supply

Nom. speed	Motor type	Nom. power		Nom. torque		Nom. current	Nom. voltage	Limit speed with field weaken -ing	Max. operat. speed	Power factor	Magne-tizing current	Effi-ciency	Nom. Fre-quency
n_N min^{-1}		P_N kW	P_N hp	M_N Nm	M_N lbf ft	I_N A	U_N V	n_1 min^{-1}	n_{max} min^{-1}	cos φ	I_μ A	η_N	f_N Hz
750	DA280K23R07-5	158.0	211.9	2012	1484	340.0	350	1250	3000	0.84	120.6	0.923	25.5
700	DA280M23R07-5	193.0	258.8	2633	1942	395.0	365	700	3000	0.83	145.6	0.930	23.8
650	DA280L23R07-5	222.0	297.7	3262	2406	475.0	350	1150	3000	0.83	178.0	0.929	22.1
1050	DA280K23R10-5	235.0	315.1	2137	1576	500.0	350	1750	3000	0.83	176.0	0.938	35.5
1050	DA280M23R10-5	290.0	388.9	2638	1946	600.0	355	1500	3000	0.83	218.6	0.945	35.5
1200	DA280L23R12-5	380.0	509.6	3024	2230	765.0	365	1200	3000	0.83	287.4	0.951	40.4
1350	DA280K23R15-5	290.0	388.9	2051	1513	610.0	350	2200	3000	0.83	216.1	0.947	45.5
1500	DA280M23R15-5	390.0	523.0	2483	1831	775.0	365	1500	3000	0.83	275.9	0.954	50.5
2000	DA280K23R20-5	400.0	536.4	1910	1409	775.0	380	3000	3000	0.82	283.2	0.959	67.1

Motor type	Maximum standstill torque $M_{0\ max}$ [Nm]	$M_{0\ max}$ [lbf ft]	Inertia J [kgm^2]	J [lb ft^2]	Weight m [kg]	m [lb]
DA280K23R	3200	2360	3.300	78.309	1170	2579
DA280M23R	4200	3098	4.200	99.666	1370	3020
DA280L23R	5200	3835	5.100	121.023	1570	3461

2.6.2. DA 280..54 W.. (IP 54 water-cooled)

Mains voltage 3 AC 400 V for converters with uncontrolled supply

Nom. speed	Motor type	Nom. power		Nom. torque		Nom. current	Nom. voltage	Limit speed with field weaken-ing	Max. operat. speed	Power factor	Magne-tizing current	Effi-cienc y	Nom. Fre-quency
n_N min^{-1}		P_N kW	P_N hp	M_N Nm	M_N lbf ft	I_N A	U_N V	n_1 min^{-1}	n_{max} min^{-1}	cos φ	I_μ A	η_N	f_N Hz
750	DA280K54W07-5	82.0	110.0	1044	770	160.0	365	750	3000	0.88	40.0	0.930	25.5
750	DA280M54W07-5	125.0	167.6	1592	1174	255.0	345	1200	3000	0.89	61.6	0.933	25.5
750	DA280L54W07-5	155.0	207.9	1974	1456	298.0	365	750	3000	0.89	72.8	0.937	25.5
1100	DA280K54W10-5	120.0	160.9	1042	769	230.0	365	1100	3000	0.88	56.6	0.946	37.1
1100	DA280M54W10-5	175.0	234.7	1519	1120	345.0	350	1500	3000	0.88	85.8	0.946	37.1
1150	DA280L54W10-5	230.0	308.4	1910	1409	445.0	360	1300	3000	0.88	107.3	0.950	38.8
1500	DA280K54W15-5	160.0	214.6	1019	752	310.0	360	1500	3000	0.87	84.6	0.953	50.4
1500	DA280M54W15-5	220.0	295.0	1401	1033	415.0	365	1500	3000	0.88	102.4	0.953	50.5
1600	DA280L54W15-5	295.0	395.6	1761	1299	560.0	360	1600	3000	0.88	142.8	0.956	53.8
2000	DA280K54W20-5	200.0	268.2	955	704	380.0	365	2000	3000	0.88	99.8	0.954	67.1
2000	DA280M54W20-5	280.0	375.5	1337	986	535.0	365	2000	3000	0.87	140.7	0.958	67.1
2600	DA280K54W25-5	255.0	342.0	937	691	495.0	360	3000	3000	0.87	138.2	0.955	87.1

Motor type	Maximum standstill torque $M_{0\,max}$ [Nm]	$M_{0\,max}$ [lbf ft]	Inertia J [kgm^2]	J [lb ft^2]	Weight m [kg]	m [lb]
DA280K54W	2100	1549	3.300	78.309	1250	2756
DA280M54W	3200	2360	4.200	99.666	1470	3241
DA280L54W	3950	2913	5.100	121.023	1700	3748

2.7. Bearings and shaft load

All machines are equipped with rolling-contact bearings. Normally, the non-locating bearing (ball bearing) is intended for the drive end and the locating bearing (ball bearing) for the non-drive end. Machines with roller bearings at the drive end are available for applications where increased radial forces can occur, for instance when using pulleys. Please specify radial forces in your order.

Ball bearing assignment for D-end

Frame size	D-end	N-end
100	6209 2ZRC3	6306 2ZRC3
132	6312 2ZRC3	6310 2ZRC3
160	6313 2ZRC3	6311 2ZRC3
180	6314 2ZRC3	6312 2ZRC3
225	6316 2ZRC3	6314 2ZRC3
280	6220 C3	6220 C3

Ball bearing assignment for D-end

Frame size	D-end	N-end
100	NU 209 E	6306 2ZRC3
132	NU 312 E	6310 2ZRC3
160	NU 313 E	6311 2ZRC3
180	NU 314 E	6312 2ZRC3
225	NU 316 E	6314 2ZRC3
280	NU 2220 E	6220 C3

Determination of radial forces F_R

When using pulleys, the radial load is calculated according to the following formula:

$$F_R = k\frac{2\cdot 10^7 \cdot P_N}{n\cdot D}\ [N]$$

P_N = Nominal power in kW

n = Nominal speed in min^{-1}

D = Pulley diameter in mm

The belt tightening factor k is approximately:
k = 1.8...2.5 for V-belt
k = 2.2..3.5 for flat belt
(Observe specifications of the belt manufacturer)

To ensure safe and reliable torque transmission, it is necessary to utilize the entire bearing length of the key. Otherwise, the key may be subjected to an excessive compressive load per unit area, which in turn can result in the failure of the motor.
The pulley must be mounted up to the shaft shoulder and only tightened to the following maximum tightening torques.

Gland	M5	M6	M8	M10	M12	M16	M20
Tightening torque	2.2 Nm	4.0 Nm	10.0 Nm	19.0 Nm	33.0 Nm	80 Nm	160 Nm

Permissible radial forces F_R at the shaft end

The ball bearings have been dimensioned for a calculated service life of approx. 20,000 operating hours [1)]. The load values specified below must not be exceeded. The specified permissible radial forces F_R are only valid for horizontal mounting of the motor without additional axial forces. If additional axial forces are involved, please consult the manufacturer.

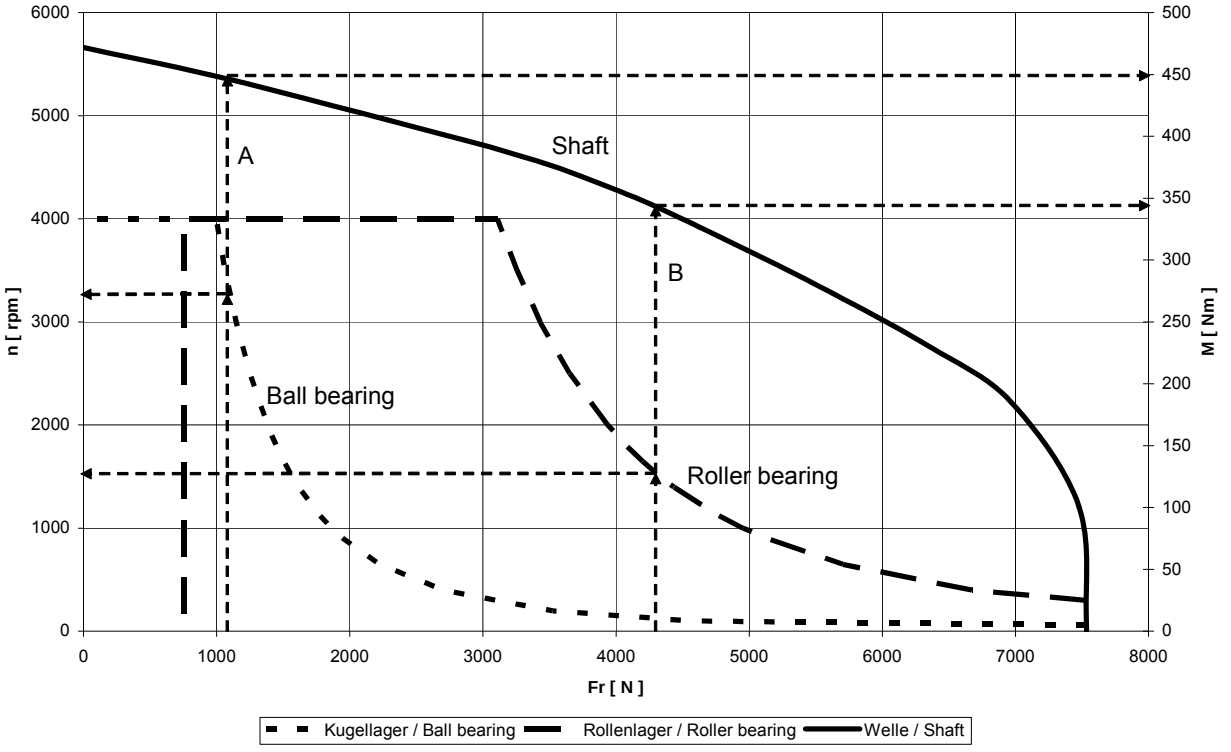
Axial load on the motor shaft

When mounting clutches, pulleys, etc. onto the motor shaft, axial forces must not occur! Therefore, use the internal thread of the shaft end as an assembly aid.

1) medium operating temperature < 90°C
medium operating speed < 2000 min^{-1} (DA 100 – DA 160), medium operating sped < 1500 min^{-1} (DA 180 – DA 280)

2.8. Radial force diagrams

Example



Explanation of the example diagram

Force acting on the end of the shaft end (for force acting on the middle of the shaft end Fr x 1.1)
Shaft end with keyway

Case A – Ball bearing:

The radial force Fr of the application is used to determine the possible maximum speed of the bearing in the “Ball bearing” characteristic.

Radial force 1.100 N => maximum speed 3.250 min^{-1}

The maximum transmittable torque is based on the “Shaft” characteristic.

Radial force 1.100 N => maximum transmittable torque 450 Nm

Case B – Roller bearing:

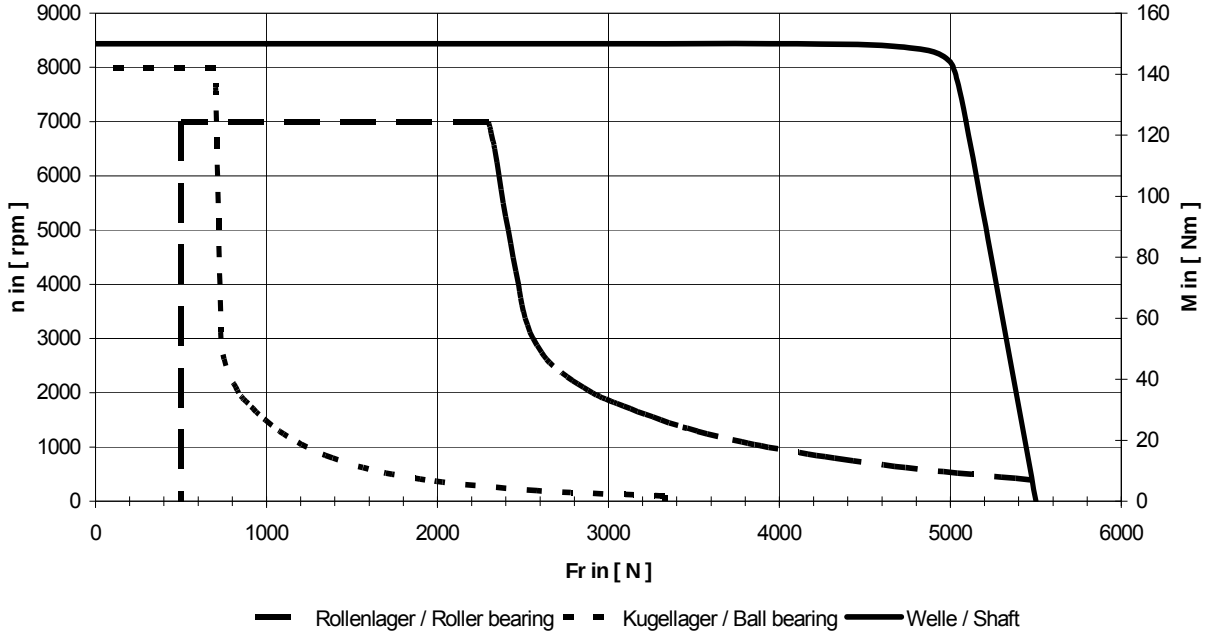
The radial force Fr of the application is used to determine the possible maximum speed of the bearing in the “Roller bearing” characteristic.

Radial force 4.300 N => maximum speed 1.500 min^{-1}

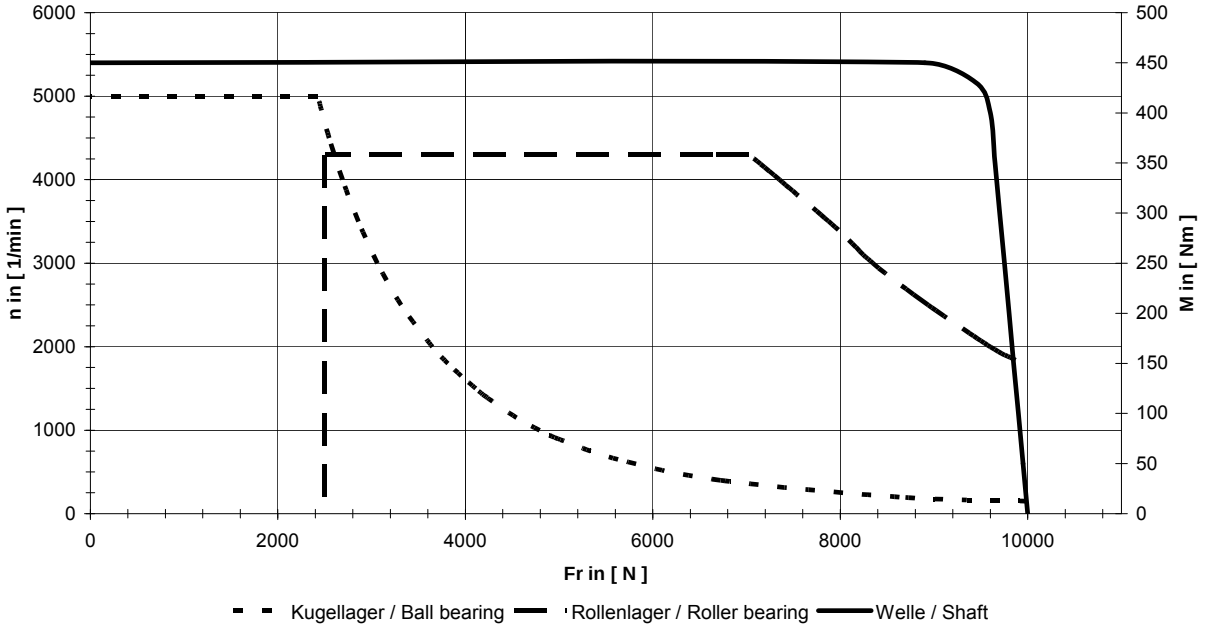
The maximum transmittable torque is based on the “Shaft” characteristic.

Radial force 4.300 N => maximum transmittable torque 345 Nm

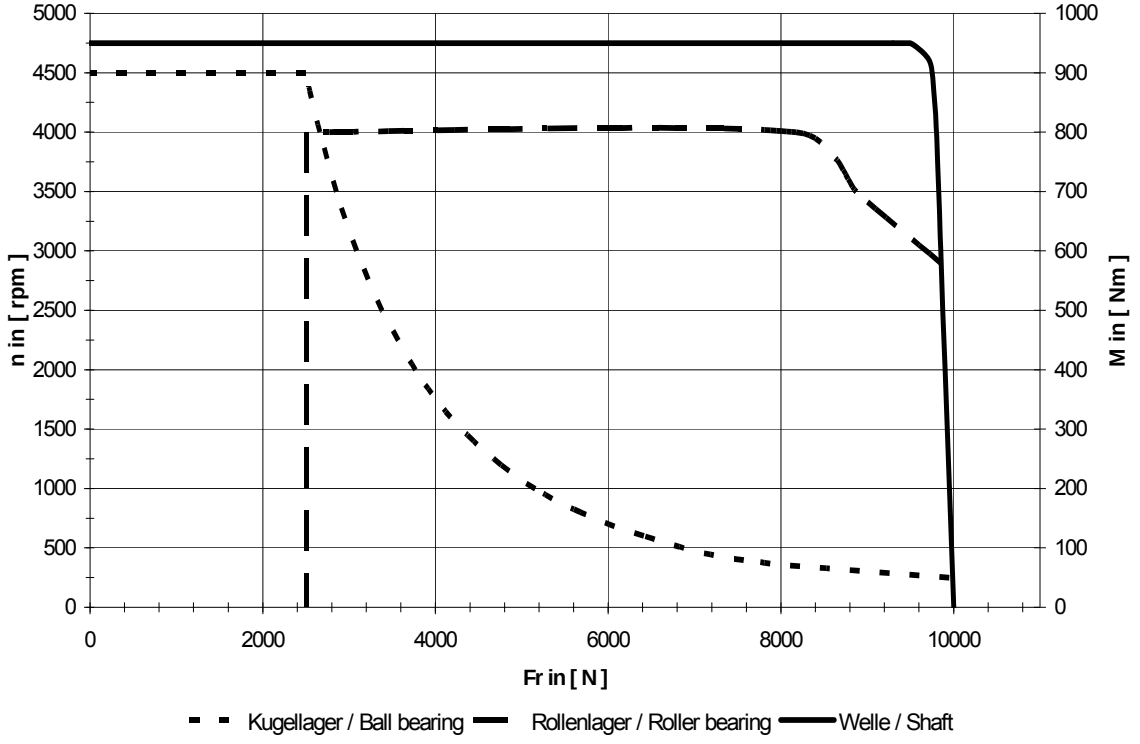
DA 100


n in [rpm]
M in [Nm]
Fr in [N]
Rollenlager / Roller bearing
Kugellager / Ball bearing
Welle / Shaft

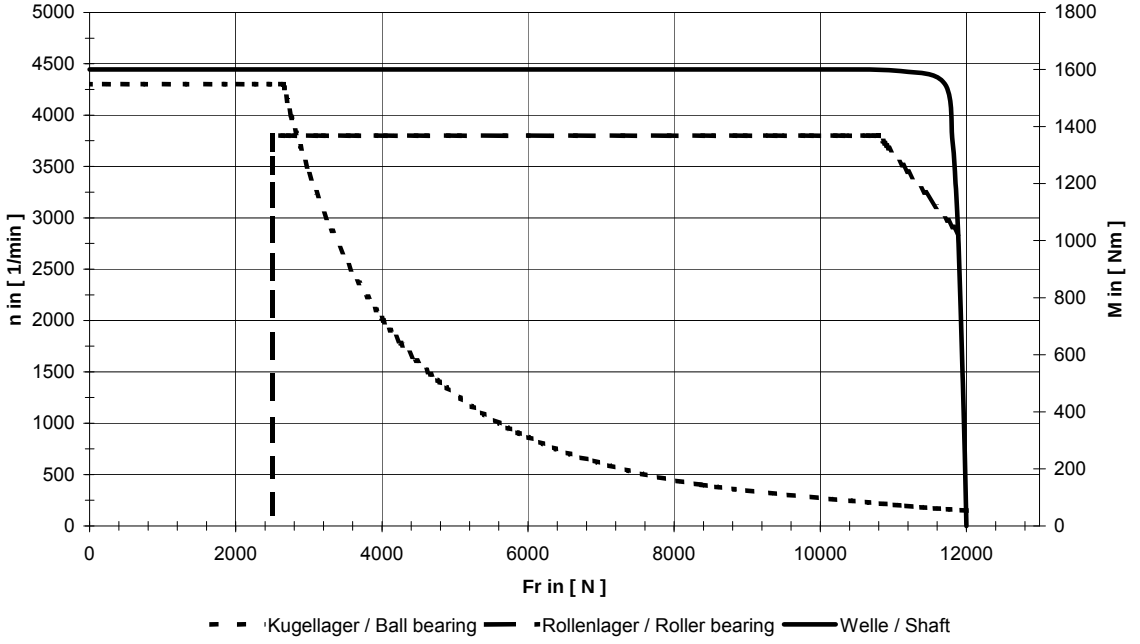
DA 132


n in [1/min]
M in [Nm]
Fr in [N]
Kugellager / Ball bearing
Rollenlager / Roller bearing
Welle / Shaft

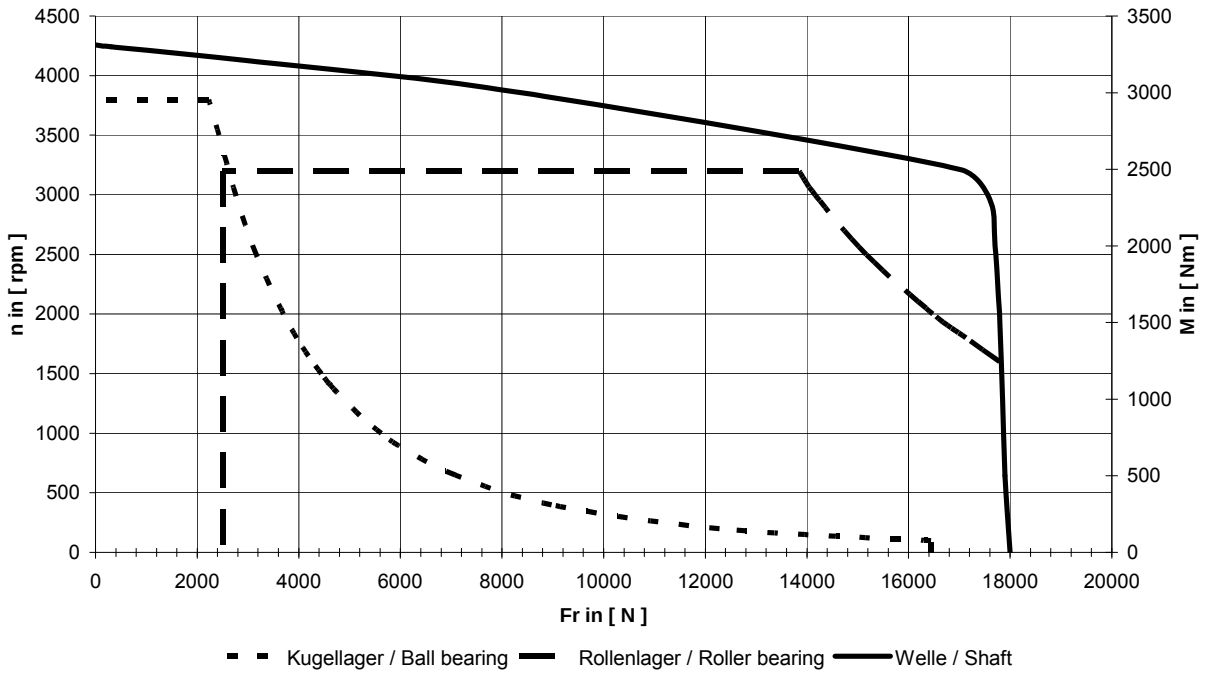
DA 160


n in [rpm]
M in [Nm]
Fr in [N]
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
0
100
200
300
400
500
600
700
800
900
1000
0
2000
4000
6000
8000
10000
Kugellager / Ball bearing
Rollenlager / Roller bearing
Welle / Shaft

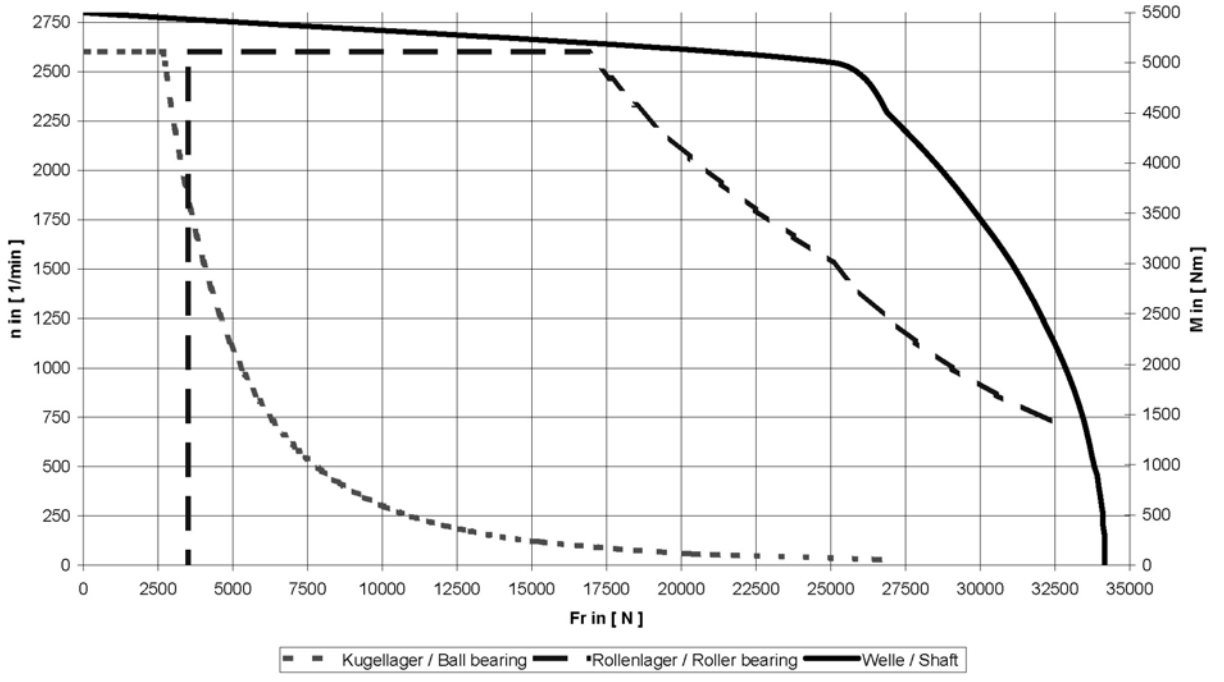
DA 180


n in [1/min]
M in [Nm]
Fr in [N]
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
0
200
400
600
800
1000
1200
1400
1600
1800
0
2000
4000
6000
8000
10000
12000
Kugellager / Ball bearing
Rollenlager / Roller bearing
Welle / Shaft

DA 225


n in [rpm]
M in [Nm]
Fr in [N]
Kugellager / Ball bearing
Rollenlager / Roller bearing
Welle / Shaft

DA 280


n in [1/min]
M in [Nm]
Fr in [N]
Kugellager / Ball bearing
Rollenlager / Roller bearing
Welle / Shaft

3. Motor components (options)

3.1. Holding brake

For motor type	Brake type	Brake torque M4 for holding brake [Nm)]	Input power [W]	Max. perm. switching energy Wperm. per switching operation [kJ]	Dis-engaging time [s]	Engaging time [s]	Inertia [kgm²]	Max. perm. speed [min^{-1}]	Weight [kg]
DAG 100…A	SB 50	50	96	10	0,120	0,160	0,0005	4000	5
DAG 100…W	SB100	100	106	18	0.180	0.250	0.0015	3500	9.5
DAG 132	SB 200	200	170	20	0.225	0.300	0.0040	3000	13
DAG 160	SB 360	360	190	30	0.350	0.300	0.0090	3000	29
DAG 180	On request								
DAG 225	On request								
DAG 280	On request								

For use as a **holding brake** the following must be observed:

- The brake has a considerably increased brake torque
- **3 emergency stops** (individual braking operations) per hour are possible if evenly distributed
- Switching times values are valid for switching on the AC side, in a cold state, with basic air gap and holding brake
- Disengaging time – Time until the brake has completely disengaged (brake without torque)
- Engaging time – Time until the brake torque is reached
- M4 ... static torque
- All information is valid for installation on a horizontal shaft.
- The supplier must be contacted before vertical installation.
- Requirements other than those indicated can be catered for on request

Brake time / Switching energy
It is necessary to check that the brake is suited for its application. For this, the switching energy must be determined.

Determination of the braking time [t_B]

t_B $\quad t_B = \dfrac{\sum J * \Delta n}{9{,}55 * (M_B \pm M_L)} + t_0$ in s

$\sum J$ Total moment of inertia in kgm² = J_{mot} + J_{add} (referred to motor shaft)
J_{mot} Motor moment of inertia in kgm²
J_{add} Additional moment of inertia in kgm² (referred to motor shaft)
Δn Motor speed in min^{-1}
M_B Brake torque in Nm
M_L Load torque in Nm (positively calculated if it decelerates, negatively calculated if it accelerates)
t_0 Time in s from the switching instant to the full extent of the braking torque (response time)
I Number of cycles per hour

Determining the switching energy [W_R]

$$W_R = \frac{\sum J \cdot \Delta n^2}{182.4} \cdot \frac{M_B}{(M_B \pm M_L)} \quad \text{in} \quad \frac{\text{joules}}{\text{switching operation}}$$

Determining the switching capacity [P_R]

$$P_R = \frac{W_R \cdot i}{1000} \quad \text{in} \quad \frac{kJ}{h}$$

$W_{Rperm} \leq$ value from table

In most cases, t_0 is negligible. If this is not the case and the time t_0 must be reduced, you can achieve this by interrupting the magnet circuit on the DC side.
However, this measure must be known before dimensioning the brake motor.

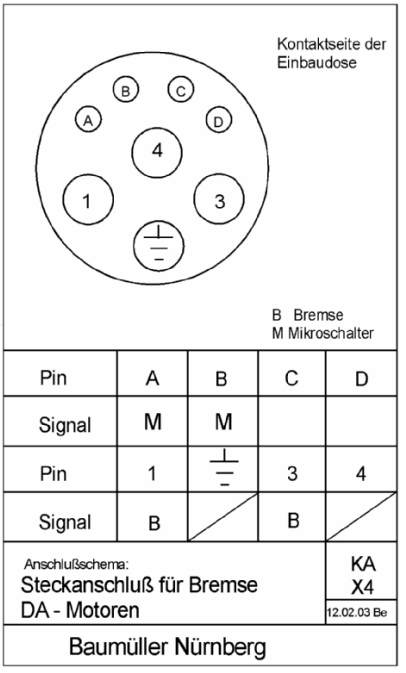
3.1.1. Brake supply

Normal voltage: 24 V DC supply using transformer and rectifier
Normal voltage: 96 - 120 and 176 V DC supply using brake supply device
The brake supply device must be ordered separately.
The brakes have a microswitch (NO contact). Switching capacity of microswitches:
Ohmic load up to 30 V DC - 5 A or 250 V AC - 5 A, inductive load up to 30 V DC - 3 A or 250 V AC - 2 A
The contact ratings apply to silver contacts. A mechanical release lever is available as an option.

3.1.2. Brake connection

DAG100 – 225 for axial forced ventilation

Connector:



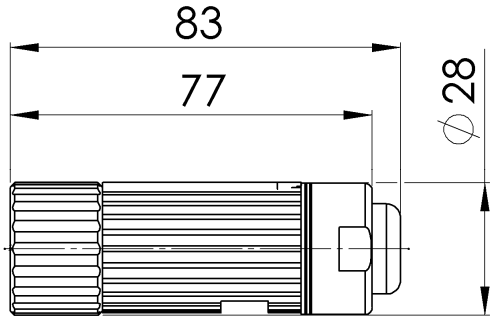
Pin	A	B	C	D
Signal	M	M		
Pin	1	⏚	3	4
Signal	B		B	

Anschlußschema:
Steckanschluß für Bremse
DA - Motoren

KA
X4
12.02.03 Be

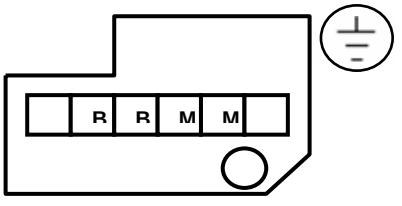
Baumüller Nürnberg

Mating plug size 1 for current levels I_0 to 20 A
Art. no. 00261740:



DAG132 – 280 for radial forced ventilation and water cooling

Terminal:



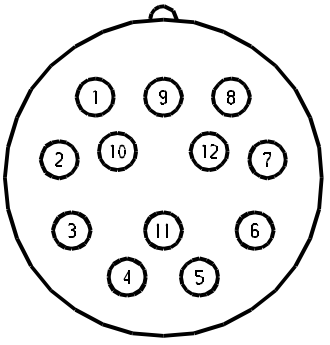
B - Brake
M - Microswitch

3.2. Encoder

3.2.1. Resolver

Pole pair number	1
Transmission ratio	0.5
Frequency	5 kHz
Nominal input voltage	4V
Active input power for no-load operation	112 mW
Current consumption for no-load operation	40mA
Max. output voltage for no-load operation	2 V r.m.s.
Voltage constant	-
Rotor resistance	44 Ω ± 10%
Stator resistance	28 Ω ± 10%
Rotor impedance for no-load operation	70 + j 74 Ω ± 15%
Rotor impedance at short-circuit	62 + j 66 Ω ± 15%
Stator impedance for no-load operation with min. coupling	108 + j 206 Ω ± 15%
Stator impedance at short-circuit with max. coupling	97 + j 183 Ω ± 15%
Phase shift	8°
Zero voltage	15 mV
Phase error referred to zero position	10’

Resolver connection



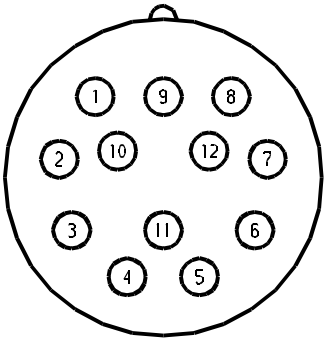
Pin	Signal
1	cos -
2	
3	
4	
5	sin –
6	sin +
7	
8	cos +
9	
10	Ref +
11	
12	Ref -

View of contact side of female connector

3.2.2. SINCOS SRS/SRM 50 (SICK|STEGMANN)

	SRS 50/SRM 50
Number of sine, cosine periods per revolution	1024
Number of increments per revolution	32,768
Number of absolute resolved revolutions	1 | 4096
Code type for the absolute value	Binary
Output frequency of sine, cosine signals (kHz)	0 ... 200
Error limits when evaluating 1,024 signals, integral non-linearity (arc seconds)	+/- 45
Non-linearity within a sine, cosine period; differential non-linearity (arc seconds)	+/- 7
Working speed up to which the absolute position can be formed (min^{-1})	6000
Maximum operating speed (min^{-1})	12.000
Output signals; 2 x 90° shifted sinusoidal signals (V_{pp})	1
Output signal	Serial RS 485, asynchronous, half-duplex
Operating voltage range (V)	7 ... 12
Operating current without load (mA)	80

SRS/SRM 50 connection



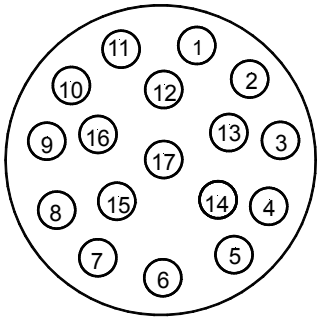
Pin	Signal
1	ref cos
2	+ 485
3	
4	
5	sin
6	ref sin
7	- 485
8	cos
9	Screening
10	Gnd
11	
12	+ U

View of contact side of female connector

3.2.3. ECN 1313/EQN 1325 (Heidenhain)

	ECN 1313/EQN 1325	
Number of sine, cosine periods per revolution	2048	
System accuracy in arc seconds	± 20	
Number of absolute resolved revolutions	1	4096 (12 bit)
Code type for the absolute value	EnDat 2.1	
Sampling limit frequency or limit frequency (kHz)	0 ... 200	
Position values / revolution	8192 (13 bit)	
Working speed up to which the absolute position can be formed (min^{-1})	12.000	
Maximum operating speed (min^{-1})	12.000	
Voltage supply (V)	5 V ± 5%	
Current consumption without load (mA)	≤ 150	≤ 250

ECN 1313 EQN 1325 connection



Pin	Signal
1	U_p
2	
3	
4	0V
5	
6	
7	U_p
8	Clock
9	Clock inv.
10	0V
11	
12	B+
13	B-
14	Data
15	A+
16	A-
17	Data inv.

View of contact side of female connector

3.3. Encoder cables

General

A fully preassembled encoder cable is used for all encoder systems. The connection on the motor side takes the form of a 12-pin round signal connector in the case of a resolver and SRS/SRM 50 or a 17-pin round signal connector in the case of the ECN 1313/EQN 1325. The connection on the converter side takes the form of a 15-pin SUB-D connector.

The encoder cables are available in 'trailing' or 'non-trailing' versions. The trailing cable is suitable for mobile use in trailing chains, for example. In contrast to the 'non-trailing' cable, which has a PVC sheath, the cable sheath for the trailing version consists of tougher PU for use in environments containing acids and bases (coolants). Cables can be supplied cut to lengths of complete meters (1 m, 2 m, 10 m) up to a maximum of 10 m. From a cable length of 10 m, the sections come in 5 m intervals (10 m, 15 m, etc.).

3.3.1. Technical data

1. Technical description – Non-trailing

- LiYCY, 5x (2x0.14 mm²) + 2 x 0.5 mm² stranded copper, twisted pair
- PVC sheath, gray
- 1st end: 12- or 17-pin round signal connector with 12 or 17 female contacts
- 2nd end: 15-pin SUB-D connector with male contacts and locking screws 4-40UNC
- Baumüller labeling, black
- Outer diameter 9.0 mm (+/- 0.3 mm)
- Bending radius: $r \geq 60$ mm (fixed installation), $r \geq 135$ mm (flexible use)
- Nominal voltage: 250 V_{AC}

2. Technical description – Trailing

- Li12YC11Y, 5x (2x0.14 mm²) + 2 x 0.5 mm² stranded copper, twisted pair
- PU sheath, black
- 1st end: 12- or 17-pin round signal connector with 12 or 17 female contacts
- 2nd end: 15-pin SUB-D connector with male contacts and locking screws 4-40UNC
- Baumüller labeling, white
- Outer diameter 9.0 mm (+/- 0.3 mm)
- Bending radius: $r \geq 70$ mm (fixed installation), $r \geq 100$ mm (flexible use)
- Nominal voltage: 300 V_{AC}

3.3.2. Application notes

- Operating temperature

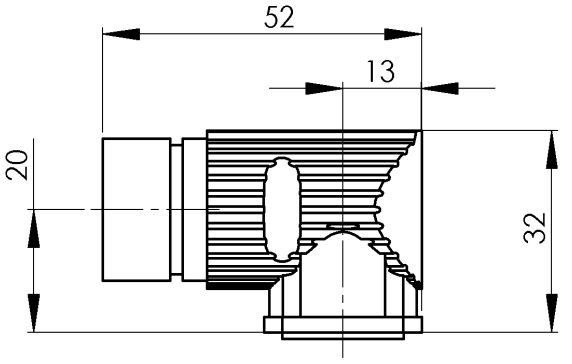
	Trailing	Non-trailing
Limit temperature	At the surface	At the surface
No/few movements	-40°C to +80°C	-30°C to +80°C
Continuous movements	-30°C to +80°C	-5°C to +70°C

- Cable laying at the motor

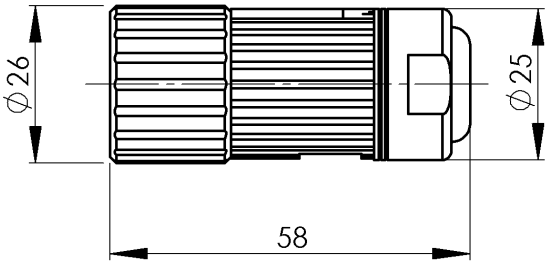
The cables must not touch the motor surface.

3.3.3. Dimension drawing of encoder boxes and connectors

Female connector:

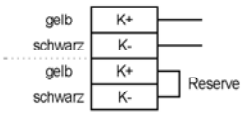


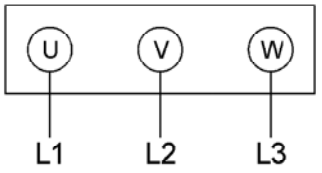
Mating plug:



3.4. Main connection – Terminal box

3.4.1. Terminal marking





Terminal marking
Connection diagram

U V W Power connection
K + K - Thermal sensor

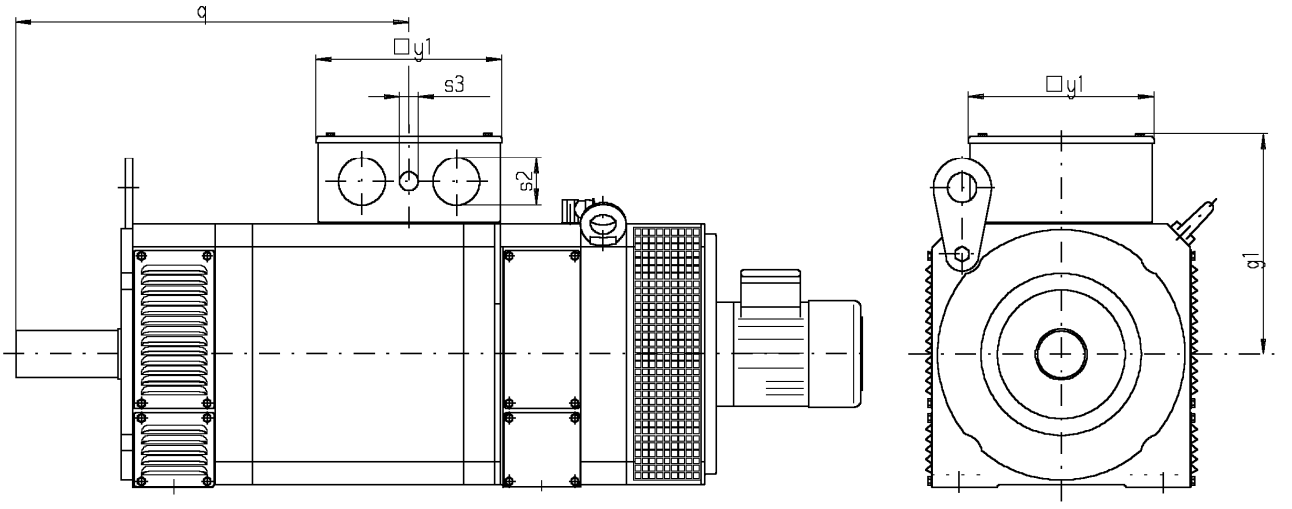
3.4.2. Terminal box version

The terminal box sizes can vary depending on the nominal motor current. An assignment of current – terminal box size – bore diameter for glands and connecting bolt size is listed
in the following section. EMC glands should be used.

Motor size	Nominal current up to [A]	Terminal box	Cable entry	Maximum possible cable dia. [mm]	Number of main connection terminals	Maximum cross-section per terminal [mm²]
100	70	Size 140	1 x M 40 + 1 x M 25	32	3x pluggable	1 x 25
132	70	Size 140	1 x M 40 + 1 x M 25	32	3x pluggable	1 x 25
	115	Size 210	2 x M 50 + 1 x M 25	38	3 x M 6	2 x 35
160	115	Size 210	2 x M 50 + 1 x M 25	38	3 x M 6	2 x 35
	200 IP 54 260 IP 23	Size 250	2 x M 63 + 1 x M 25	48	3 x M 10	2 x 120
180	300 IP 54 350 IP 23	Size 290	2 x M 63 + 1 x M 25	48	3 x M 12	2 x 185
	430	Size 290-II	2 x M 75 + 1 x M 25	63 [1)]	3 x M 16	2 x 240
225	300 IP 54 350 IP 23	Size 290	2 x M 63 + 1 x M 25	48	3 x M 12	2 x 185
	500	Size 360	2 x M 75 + 1 x M 25	63 [1)]	3 x M 16	2 x 240
	570 [2)]	Size 360-II	2 x M 75 + 1 x M 25	63 [1)]	3 x M 16	2 x 240
280	800	Size 360	3 x M 80 + 1 x M 20	63 [1)]	3 x M 16	2 x 240

[1)] Terminal box screen laid on terminal in the terminal box.
[2)] No UL approval for nominal current > 500 A

3.4.3. Dimensions of terminal boxes



Motor size	Terminal box	q				g1	y1	s2	s3
		K	M	L	B			Through-holes for	
100	Size 140	232	282	327	367	184	145	1 x M 40	1 x M 25
132	Size 140	376	416	456	496	220	145	1 x M 40	1 x M 25
	Size 210	341	381	421	461	240	215	2 x M 50	1 x M 25
160	Size 210	483	543	593	-	270	215	2 x M 50	1 x M 25
	Size 250	463	523	573	-	280	255	2 x M 63	1 x M 25
180	Size 290	-	519	619	-	308	295	2 x M 63	1 x M 25
	Size 290-II	-	519	619	-	345	295	2 x M 75	1 x M 25
225	Size 290	575	675	765	-	355	295	2 x M 63	1 x M 25
	Size 360	540	640	730	-	352	365	2 x M 75	1 x M 25
	Size 360-II	540	640	730	-	390	365	2 x M 75	1 x M 25
280	Size 360	775	885	995	-	441	365	3 x M 80	1 x M 20

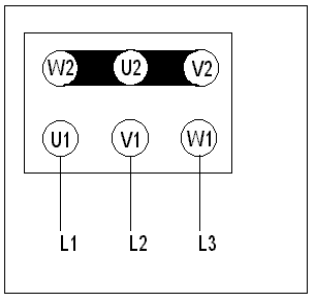
3.5. Fan data

The motors are available with the following types of fan:

- Standard fan motor for axial ventilation (standard for AH132 – 225, not available for AH280)
- Standard fan motor for radial ventilation (standard for AH280, not available for AH100)
- Axially integrated fan (standard for AH100, not available for AH280)

Fan connection for standard fan motor via terminal box

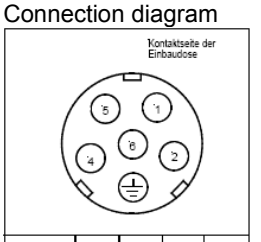
Connection diagram



U V W Power connection

Fan connection for axially integrated fan

Connection diagram



Pin	1	2	4	5
Signal	V	W		U
Pin	6	⏚		
Signal		⏚		

Standard fan motor for axial ventilation

∆/Y 200-265/345-460V 50//60 Hz

Frame size	Power [kW]	Nominal current [A]
132	0.08// 0.12	0.57/ 0.33
160	0.2// 0.3	1.4/ 0.8
180	1.1// 1.65	6.6/ 3.8
225	3.0// 3.6	14// 8.1

∆/Y 265-345/460-600 V 50//60 Hz

Frame size	Power [kW]	Nominal current [A]
132	0.08// 0.12	0.45/ 0.26
160	0.2// 0.3	1.1/ 0.6
180	1.1// 1.65	5.0/ 2.9
225	3.0// 3.6	10.7/ 6.2

∆/Y 240-280/420-480 V 50//60 Hz - with UL approval

Frame size	Power [kW]	Nominal current [A]
132	0.08// 0.12	0.48 / 0.28
160	0.25// 0.3	1.07 / 0.62
180	0.45// 0.6	1.8 / 1.05
225	1.1// 1.65	6.3 / 3.65

Nominal currents are maximum values.

Axially integrated fan

Y 400 50 Hz

Frame size	Power [kW]	Nom. current [A] with Y
100	0.043	0.13
132	0.15	0.27
160	0.47	0.7
180	0.78	1.3
225	1.1	2.1

Y 480 60 Hz

Frame size	Power [kW]	Nom. current [A] with Y
100	0.054	0.14

Y 460 60 Hz

Frame size	Power [kW]	Nom. current [A] with Y
160	0.54	0.75
180	0.91	1.3

Y 400 60 Hz

Frame size	Power [kW]	Nom. current [A] with Y
132	0.21	0.3

Nominal currents are maximum values.

Standard fan motor for radial ventilation

∆/Y 200-265/345-460 V 50//60 Hz

Frame size	Power [kW]	Nom. current [A] with Y
132	0.2// 0.3	1.4/ 0.8
160	0.45// 0.6	2.4/ 1.4
180	1.1// 1.65	6.6/ 3.8
225	3.0// 3.6	14/ 8.1

∆/Y 265-345/460-600 V 50//60 Hz

Frame size	Power [kW]	Nom. current [A] with Y
132	0.2// 0.3	1.1/ 0.6
160	0.45// 0.6	2.25/ 1.3
180	1.1// 1.65	5.0/ 2.9
225	3.0// 3.6	14/ 8.1

∆/Y 240-280/420-480 V 50//60 Hz – UL approved

Frame size	Power [kW]	Nom. current [A] with Y
132	0.25// 0.3	1.07/ 0.62
160	0.45// 0.6	1.8/ 1.05
180	1.1// 1.65	6.3/ 3.65
225	3 // 3.6	10/ 5.9

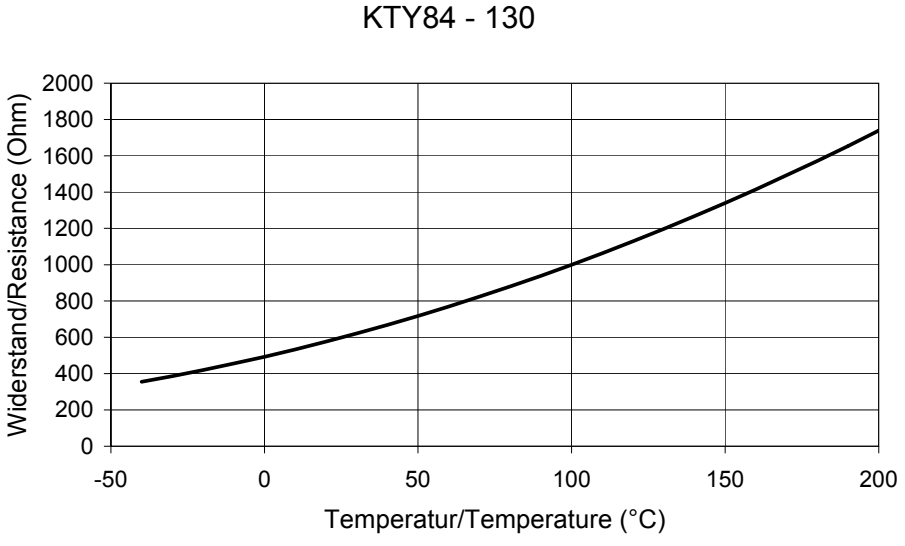
Y 345 – 460/ 480 V 50// 60 Hz

Frame size	Power [kW]	Nom. current [A] with Y
280	5.5// 6	13/ 10.5

Nominal currents are maximum values.

3.6. Thermal sensor

As standard, the motors are equipped with a thermal sensor in the stator winding, the data of which is evaluated in the motor controller. Additional PTCs or thermal sensors can be fitted on request. They are connected through the terminal box.

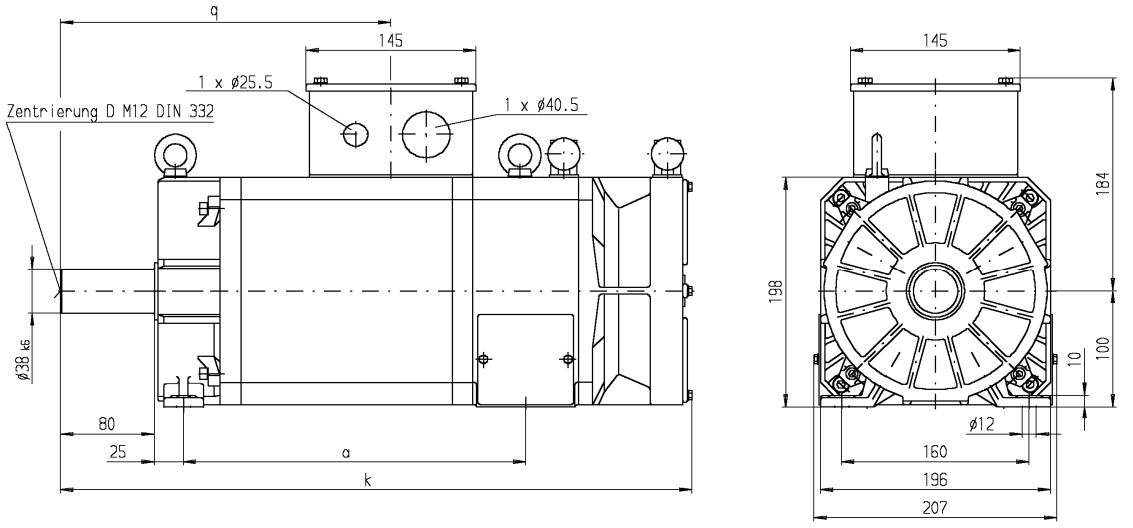


The motor temperature is continuously monitored using the thermal sensor type KTY84-130.
The resistance shown above results when the sensor is supplied with a measuring current of 2 mA.

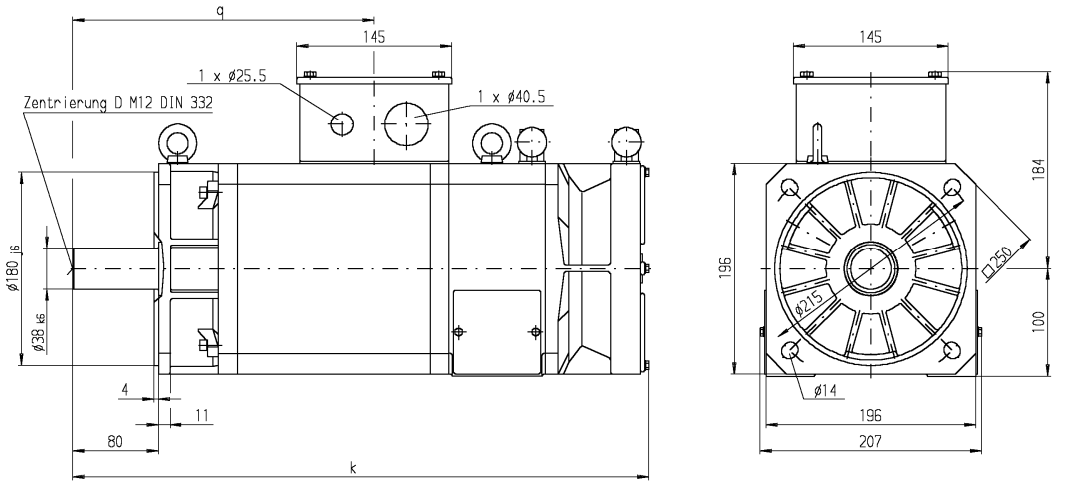
4. Dimension drawings

4.1. Dimension drawing DA 100

Version IMB3 standard
DA..100..A



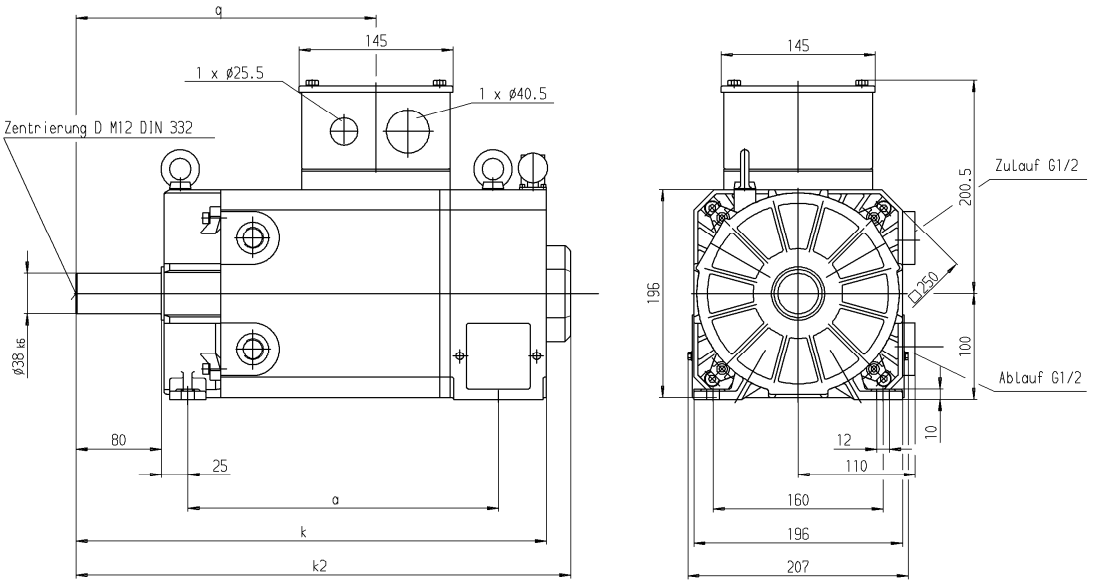
Version IMB5 standard
DAF..100..A



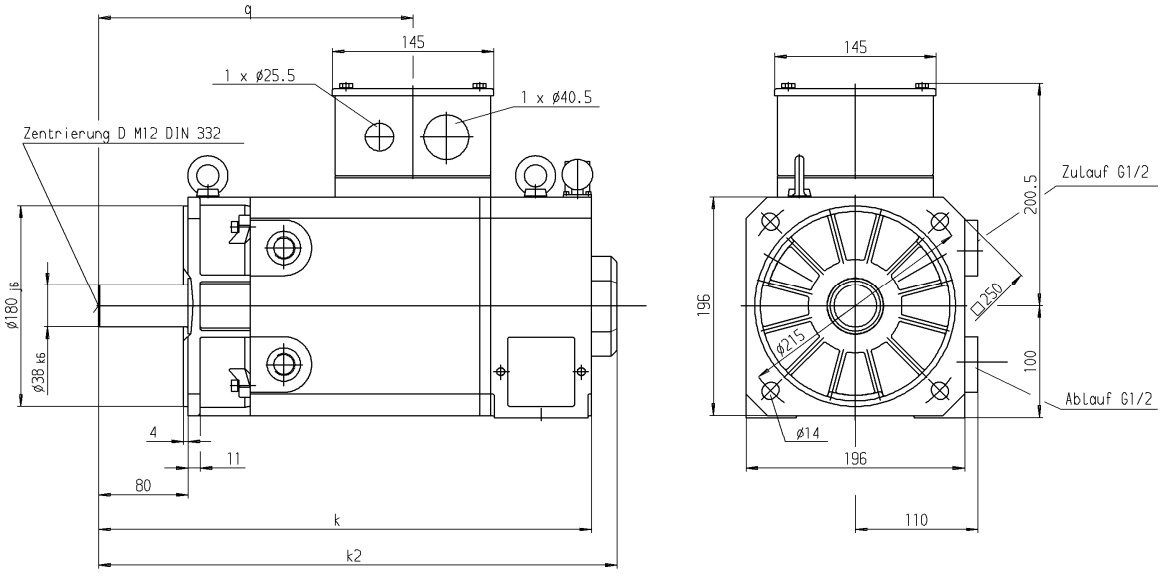
Type	a	k	q
DA 100 K...A..	242	489	232
DA 100 M..A..	292	539	282
DA 100 L..A..	337	584	327
DA 100 B..A..	377	624	367

When brake is attached: k +145 mm
For terminal box dimensions and gland sizes see pages 44 and 45

Version IMB3 standard
DA..100..54W..



Version IMB5 standard
DAF.100..54W..

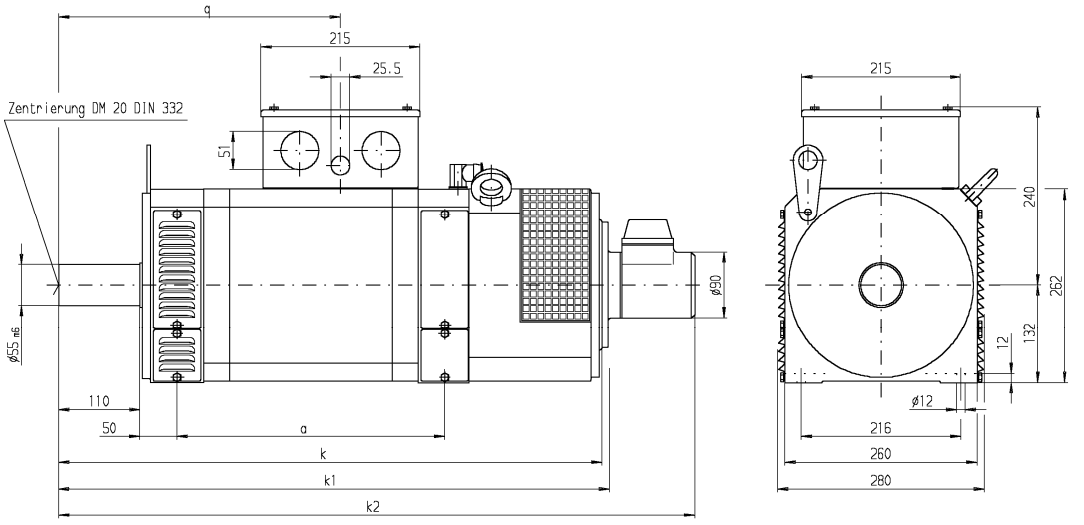


Type	a	k	k2	q
DA 100 K...W..	242	392	415	232
DA 100 M..W..	292	442	465	282
DA 100 L..W..	337	487	510	327
DA 100 B..W..	377	527	550	367

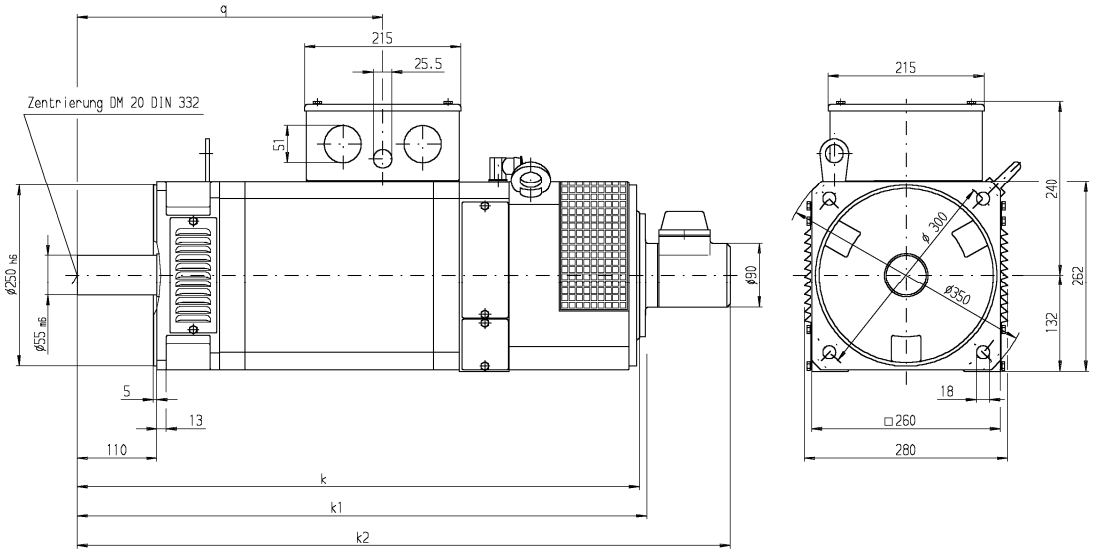
Brake k2 + 155 mm
For terminal box dimensions and gland sizes see pages 44 and 45

4.2. Dimension drawing DA 132

Version IMB3 standard
DA..132..A



Version IMB5 standard
DAF..132..A

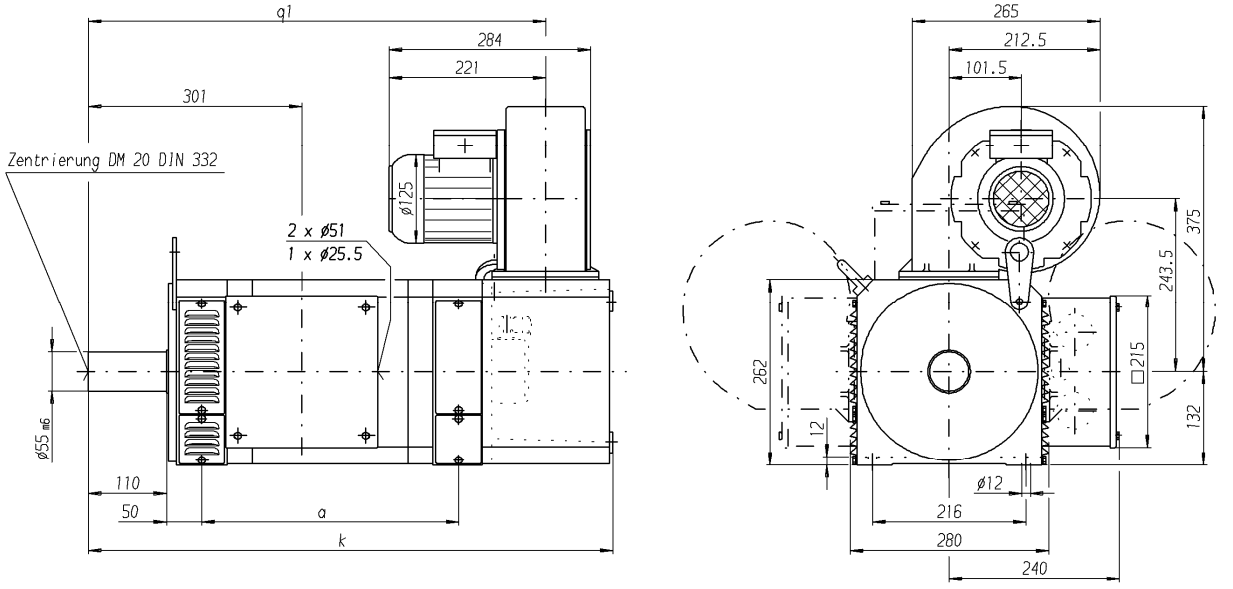


k2 standard with standard fan motor
k1 optional with integrated fan motor

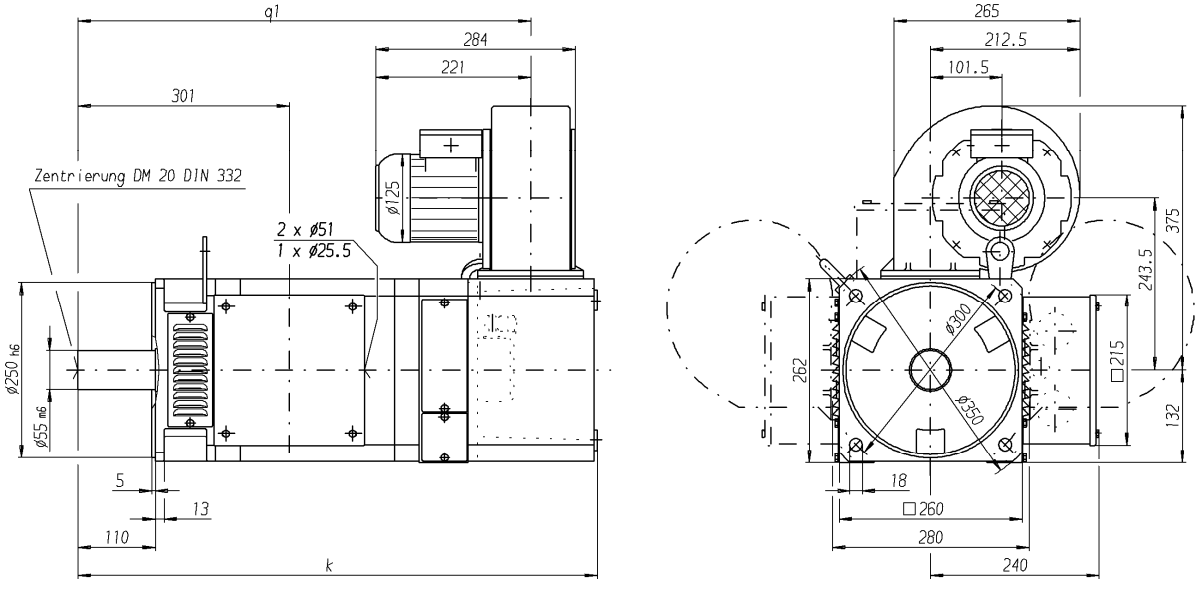
Type	A	k	k1	k2	q
DA 132 K...A..	322	695	705	820	341
DA 132 M..A..	362	735	745	860	381
DA 132 L..A..	402	775	785	900	421
DA 132 B..A..	442	815	825	940	461

When brake is attached: k1, k2 + 150 mm
For terminal box dimensions and gland sizes see pages 44 and 45

Version IMB3 with radial fan attached
DA..132..R



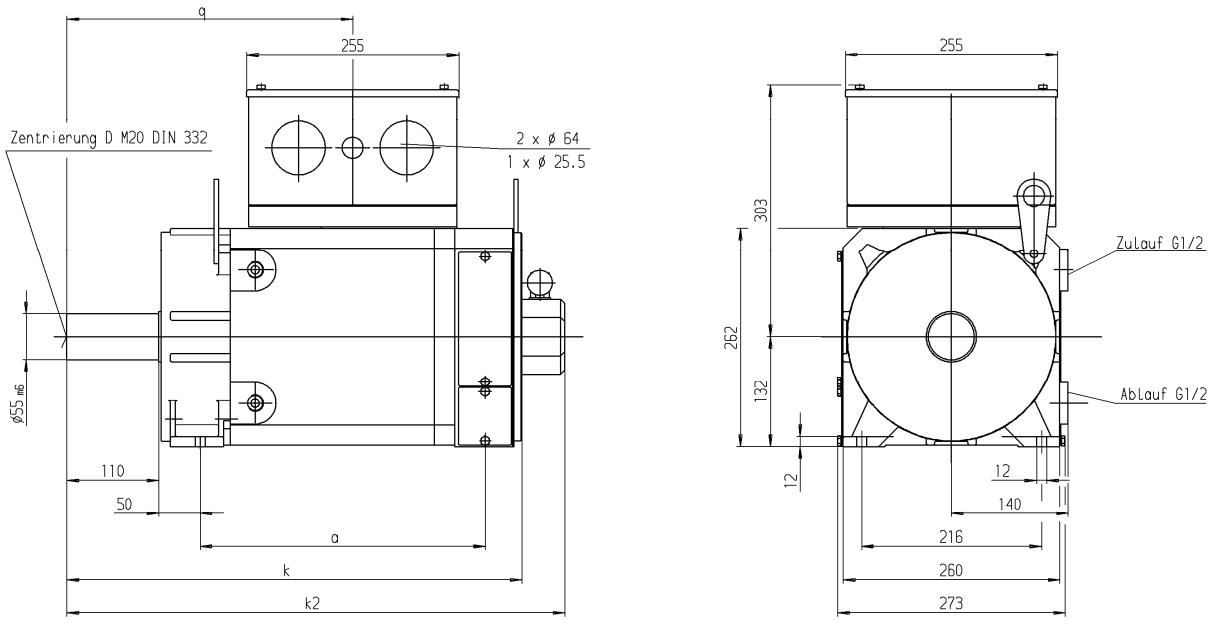
Version IMB3 with radial fan attached
DAF..132..R



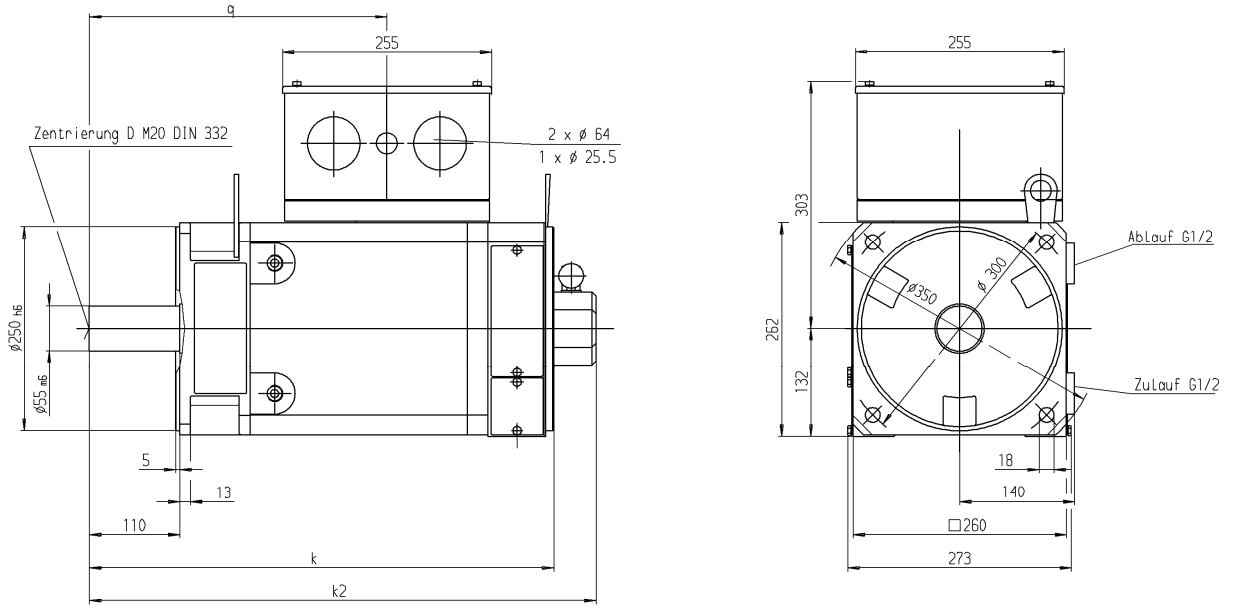
Type	a	k	q1
DA 132 K...R..	322	699	605
DA 132 M..R..	362	739	645
DA 132 L..R..	402	779	685
DA 132 B..R..	442	819	725

Brake attachment on request
For terminal box dimensions and gland sizes see pages 44 and 45

Version IMB3 standard
DA..132..54W..



Version IMB5 standard
DAF..132..54W..

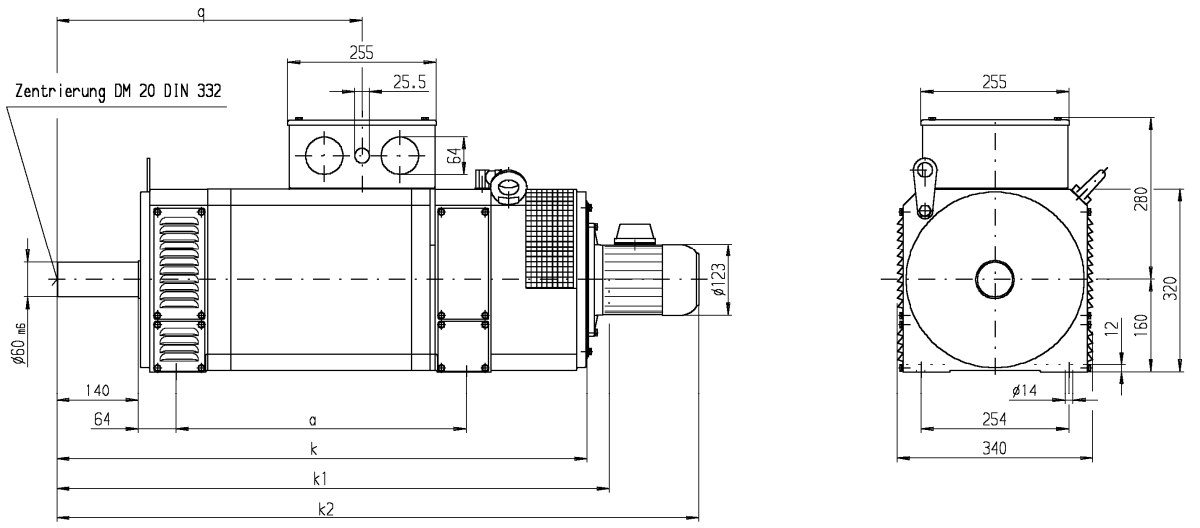


Type	a	k	k2	q
DA 132 K...W..	322	527	578	323
DA 132 M..W..	362	567	618	363
DA 132 L..W..	402	607	658	403
DA 132 B..W..	442	647	698	443

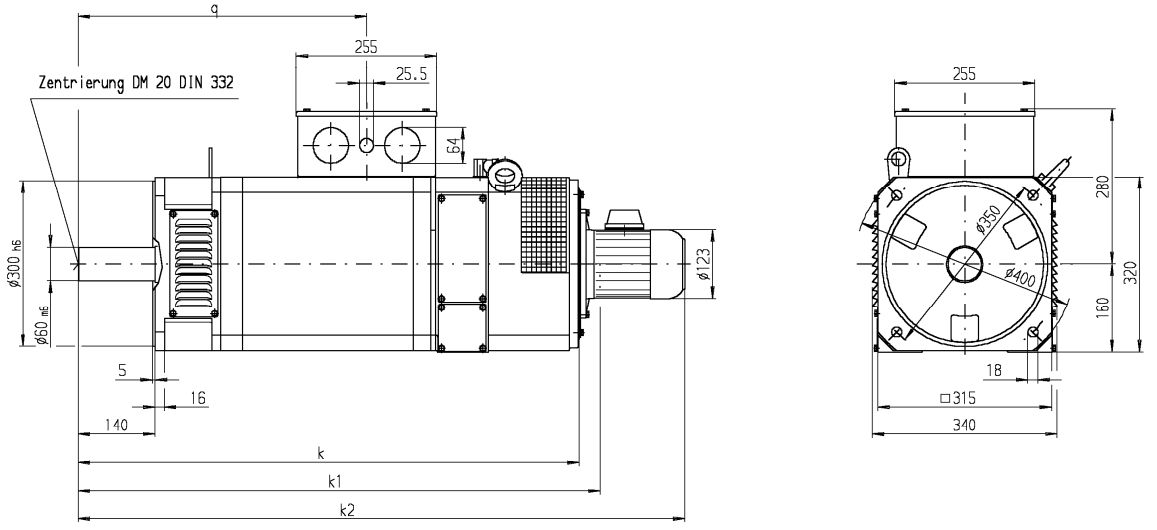
Brake k2 + 130 mm
For terminal box dimensions and gland sizes see pages 44 and 45

4.3. Dimension drawing DA 160

Version IMB3 standard
DA..160..A



Version IMB5 standard
DAF..160..A

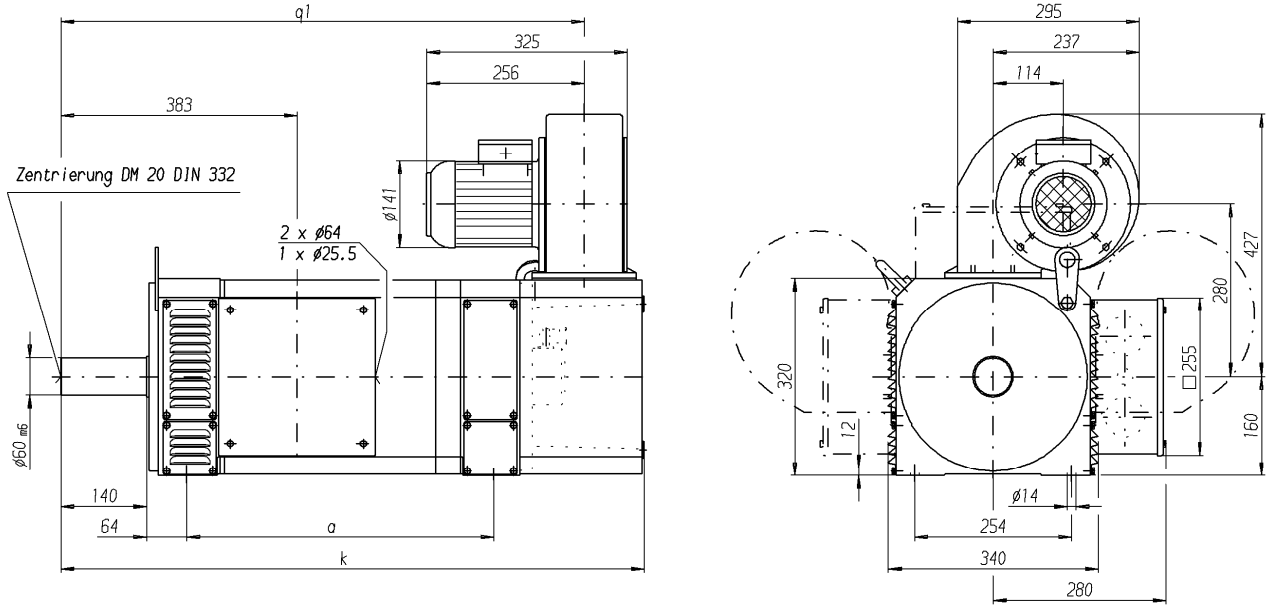


k2 standard with standard fan motor
k1 optional with integrated fan motor

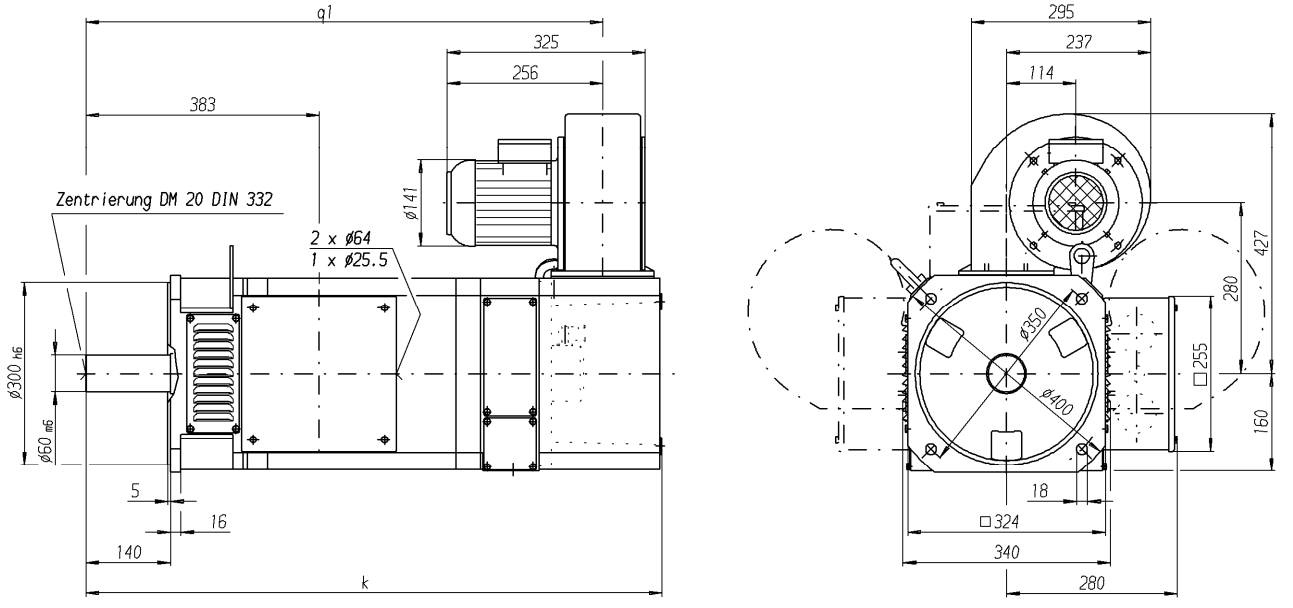
Type	a	K	k1	k2	q
DA 160 K..A..	438	885	907	1061	463
DA 160 M..A..	498	945	967	1121	523
DA 160 L..A..	548	995	1017	1171	573

When brake is attached: k1, k2 + 175 mm
For terminal box dimensions and gland sizes see pages 44 and 45

Version IMB3 with radial fan attached
DA..160..R



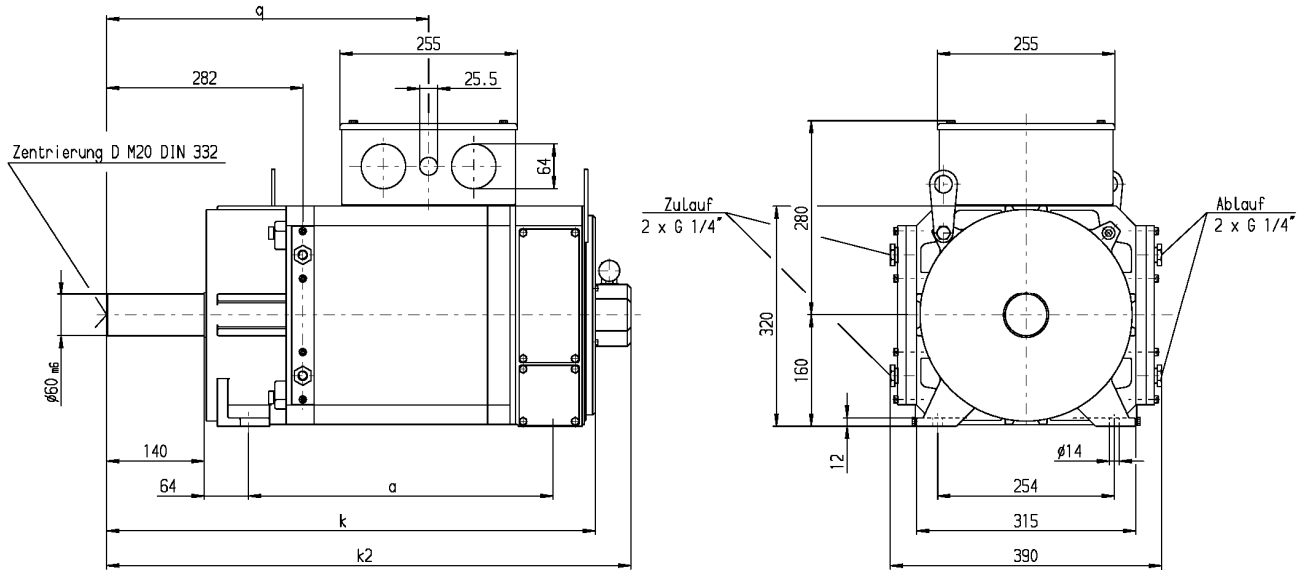
Version IMB5 with radial fan attached
DAF..160..R



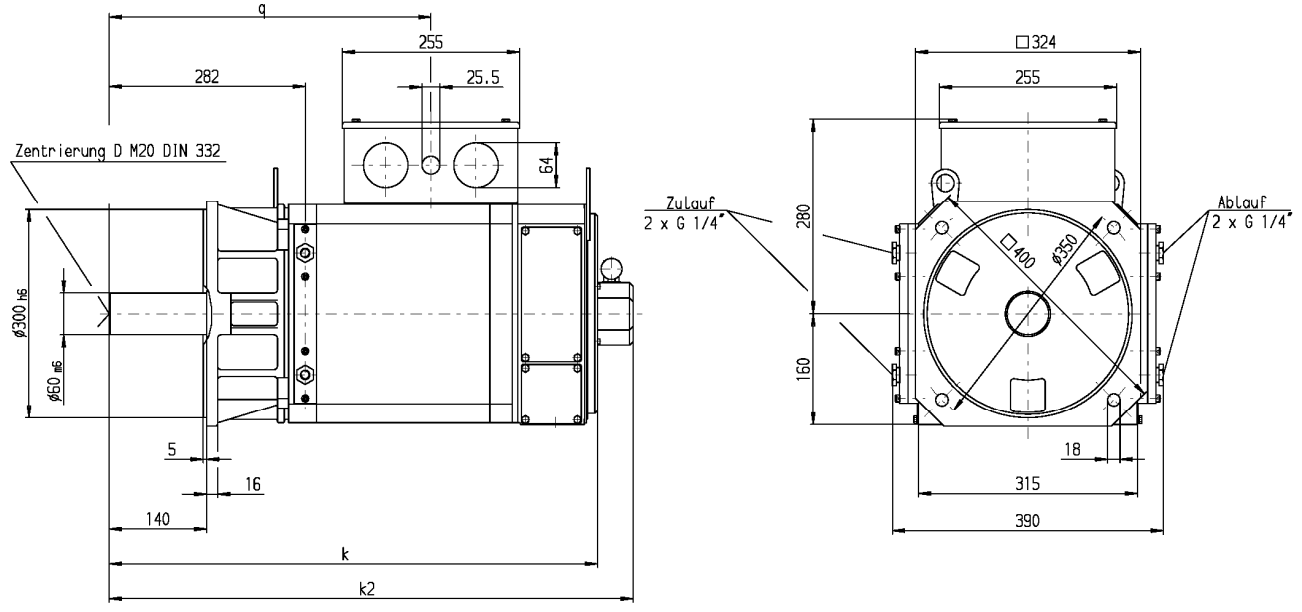
Type	a	K	q1
DA 160 K..R..	438	886	789
DA 160 M..R..	498	946	849
DA 160 L..R..	548	996	899

Brake attachment on request
For terminal box dimensions and gland sizes see pages 44 and 45

Version IMB3 standard
DA..160..54W..



Version IMB5 standard
DAF..160..54W.. .

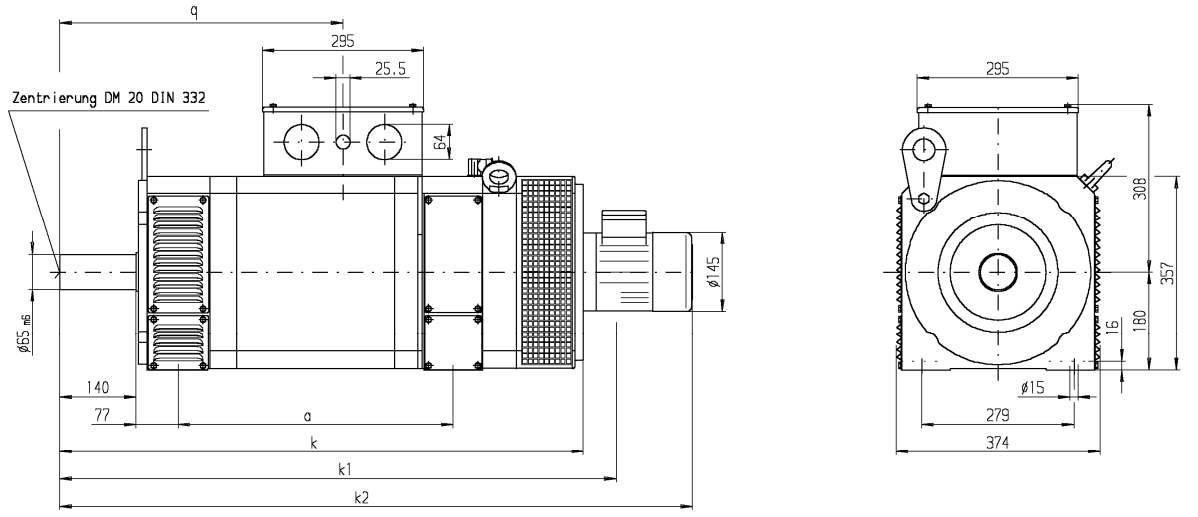


Type	a	k	k2	Q
DA 160 K...W..	438	703	754	463
DA 160 M..W..	498	763	814	523
DA 160 L..W..	548	813	864	573

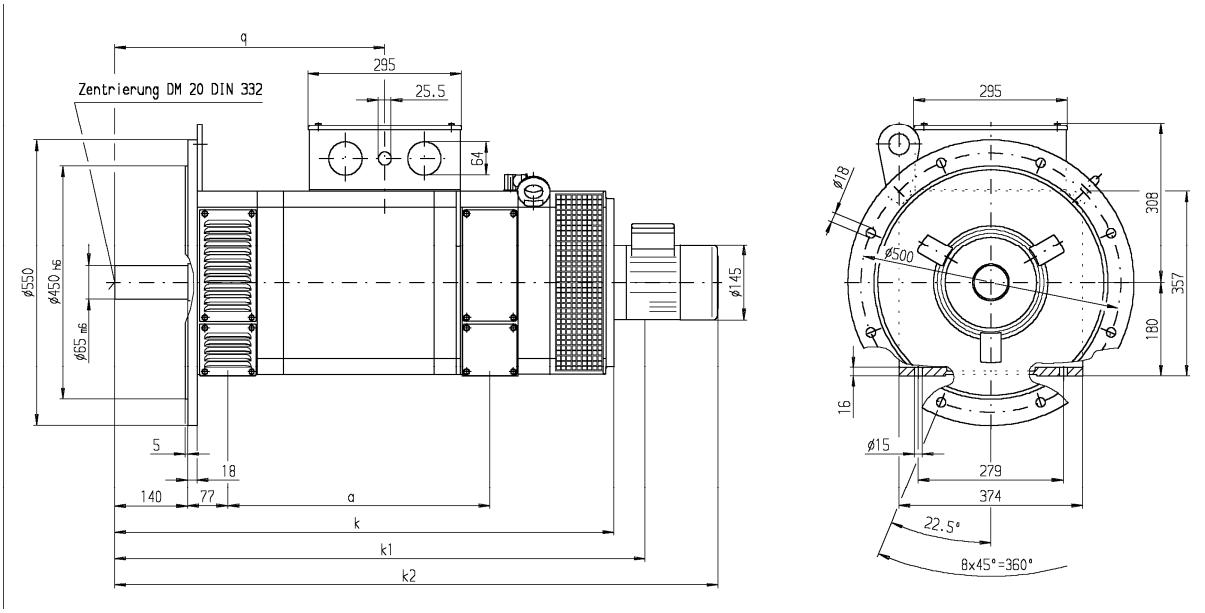
Brake k2 + 150 mm
For terminal box dimensions and gland sizes see pages 44 and 45

4.4. Dimension drawing DA 180

Version IMB3 standard
DA..180..A



Version IMB35 standard
DAFF..180..A

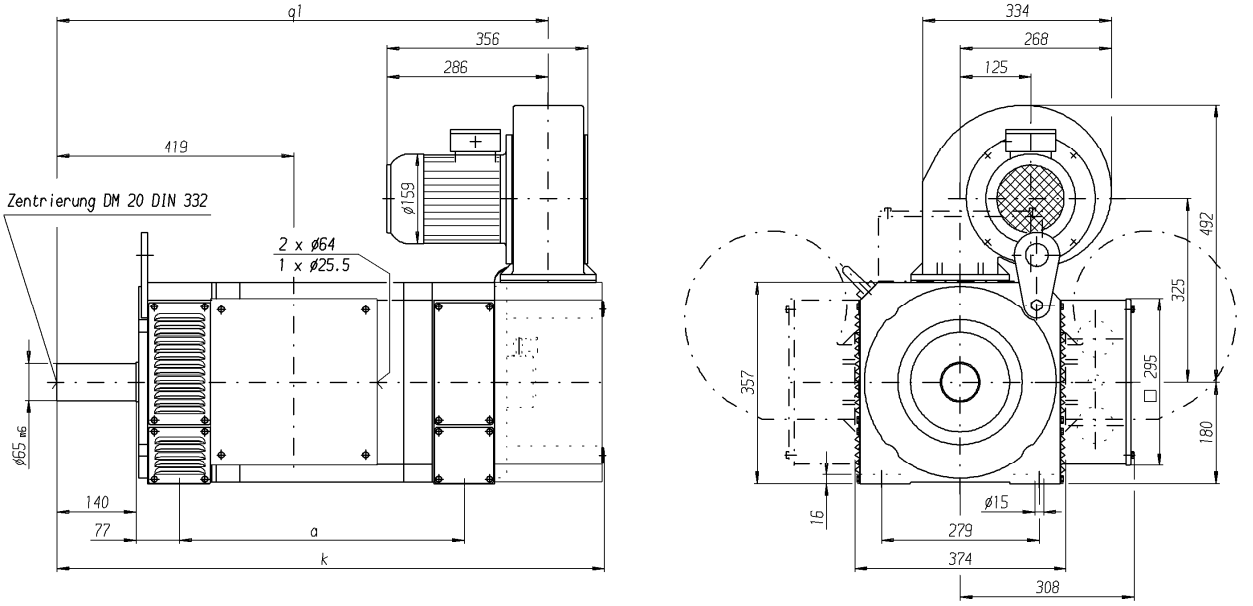


standard with standard fan motor
optional with integrated fan motor

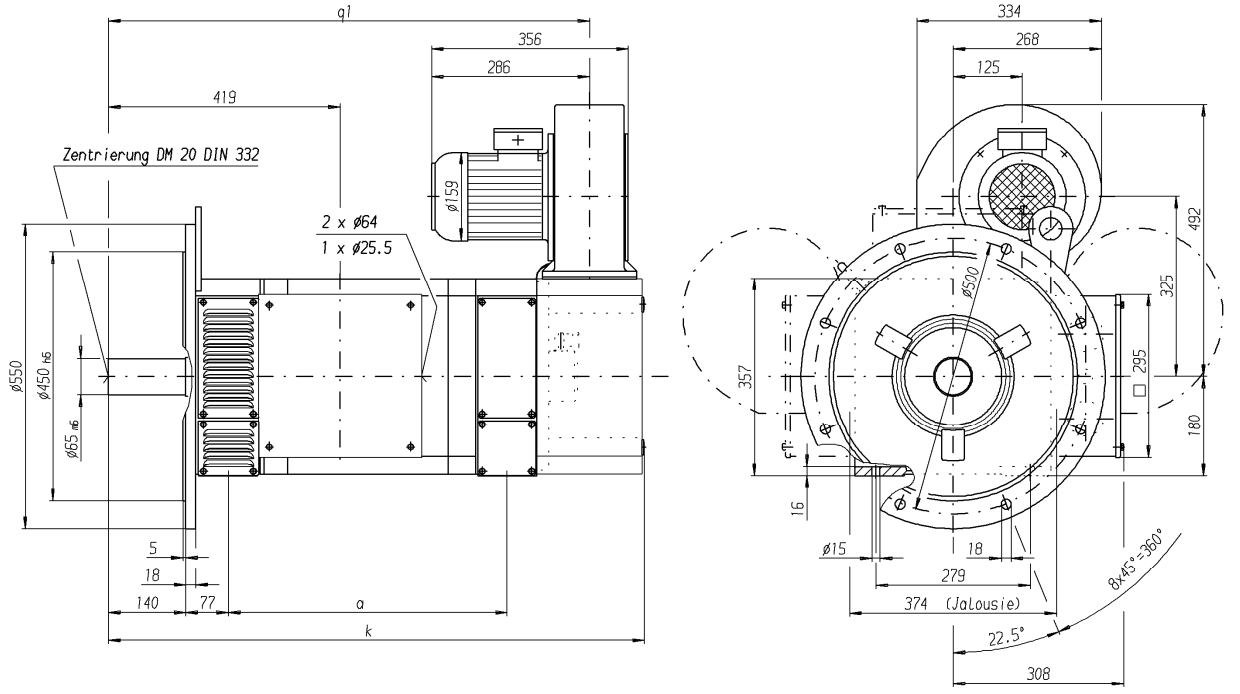
Type	a	k	k1	k2	q
DA 180 M..A..	504	960	1,020	1,160	519
DA 180 L..A..	604	1,060	1,120	1,260	619

For terminal box dimensions and gland sizes see pages 44 and 45

Version IMB3 with radial fan attached
DA..180..R



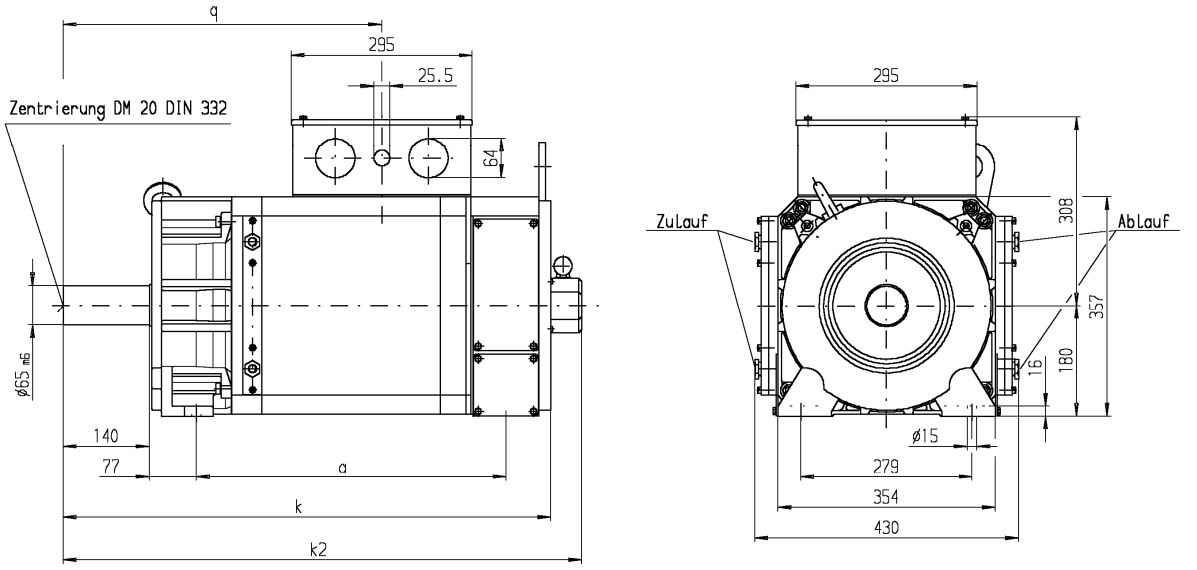
Version IMB35 with radial fan attached
DAFF..180..R



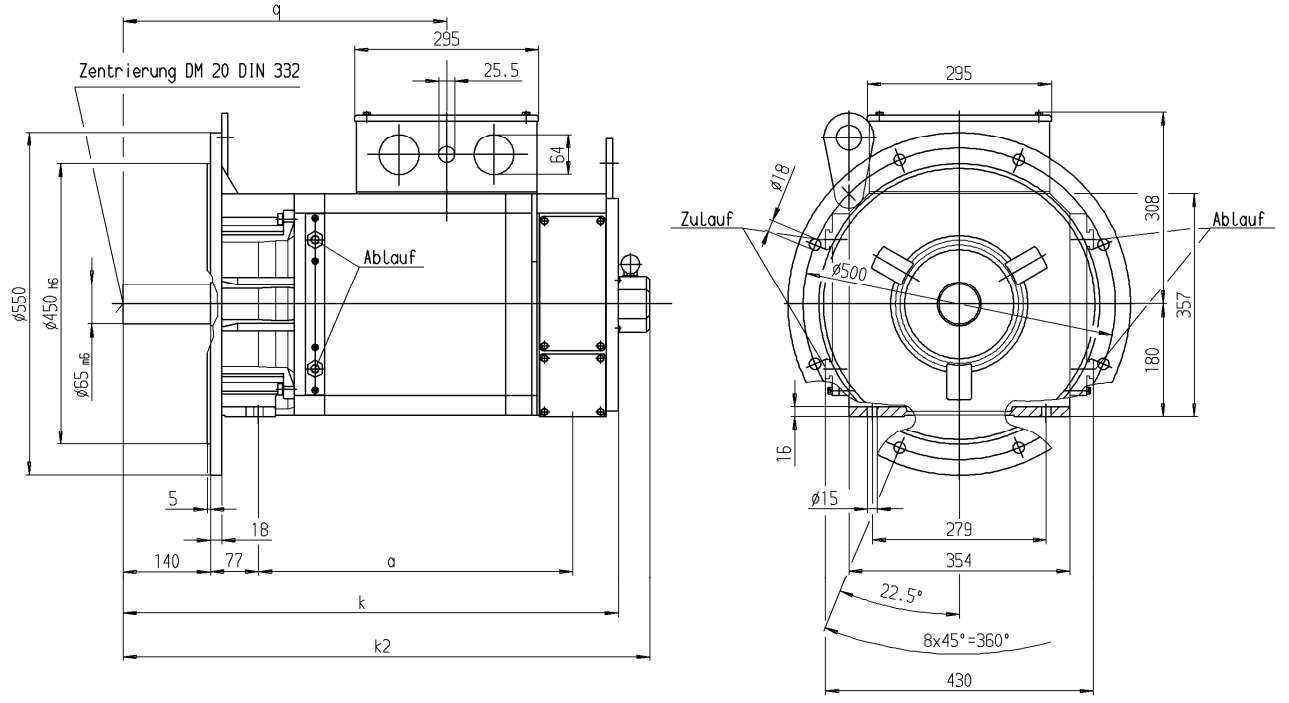
Type	a	k	q1
DA 180 M..R..	504	969	870
DA 180 L..R..	604	1069	970

For terminal box dimensions and gland sizes see pages 44 and 45

Version IMB3 standard
DA..180..54W..



Version IMB35 standard
DAFF..180..54W..

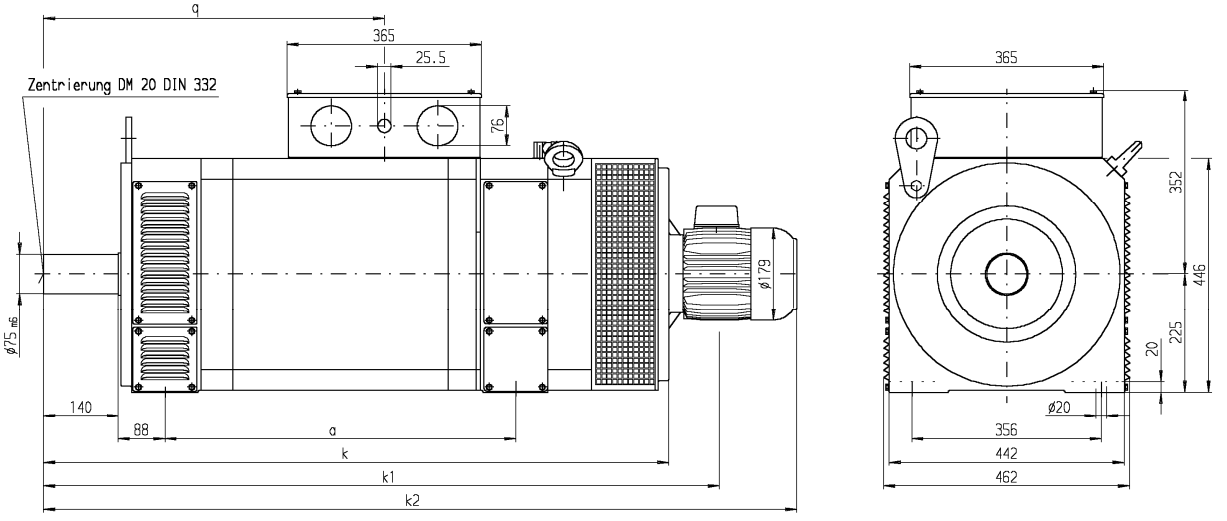


Type	a	k	k2	q
DA 180 M..W..	504	794	845	519
DA 180 L..W..	604	894	945	619

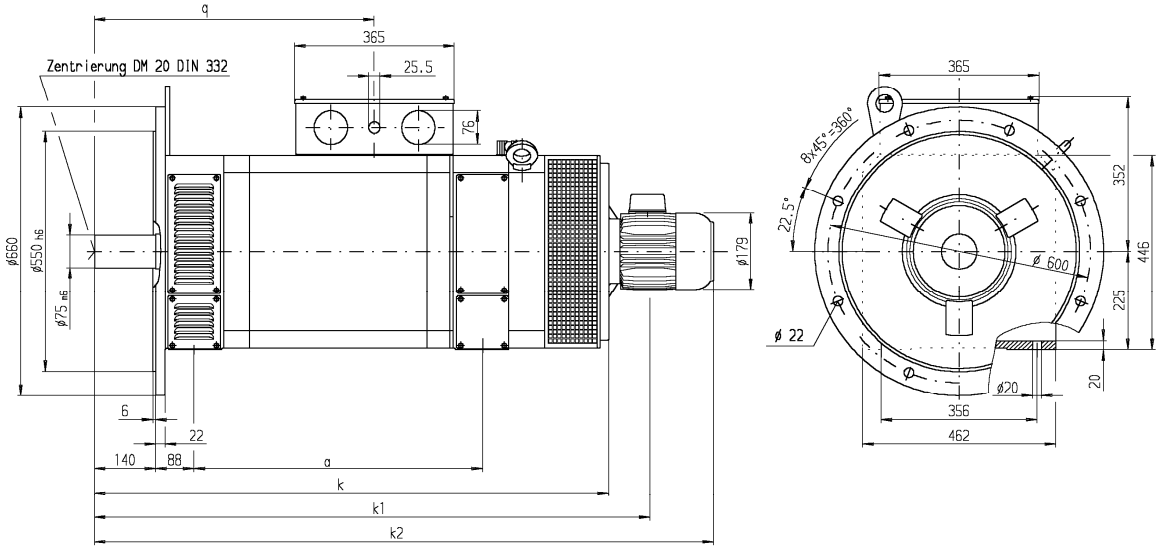
For terminal box dimensions and gland sizes see pages 44 and 45.

4.5. Dimension drawing DA 225

Version IMB3 standard
DA..225..A



Version IMB35 standard
DAFF..225..A

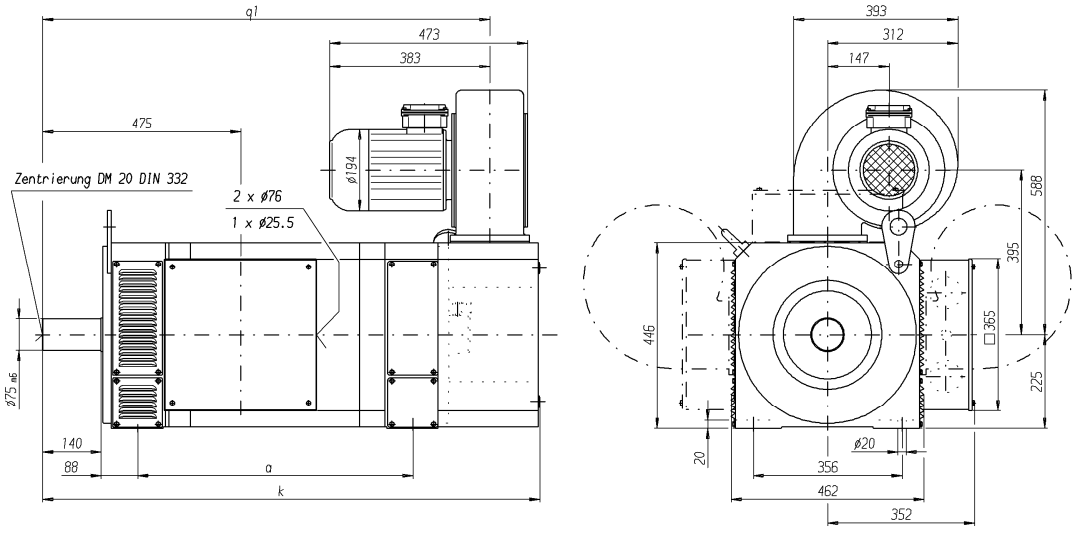


k2 standard with standard fan motor
k1 optional with integrated fan motor

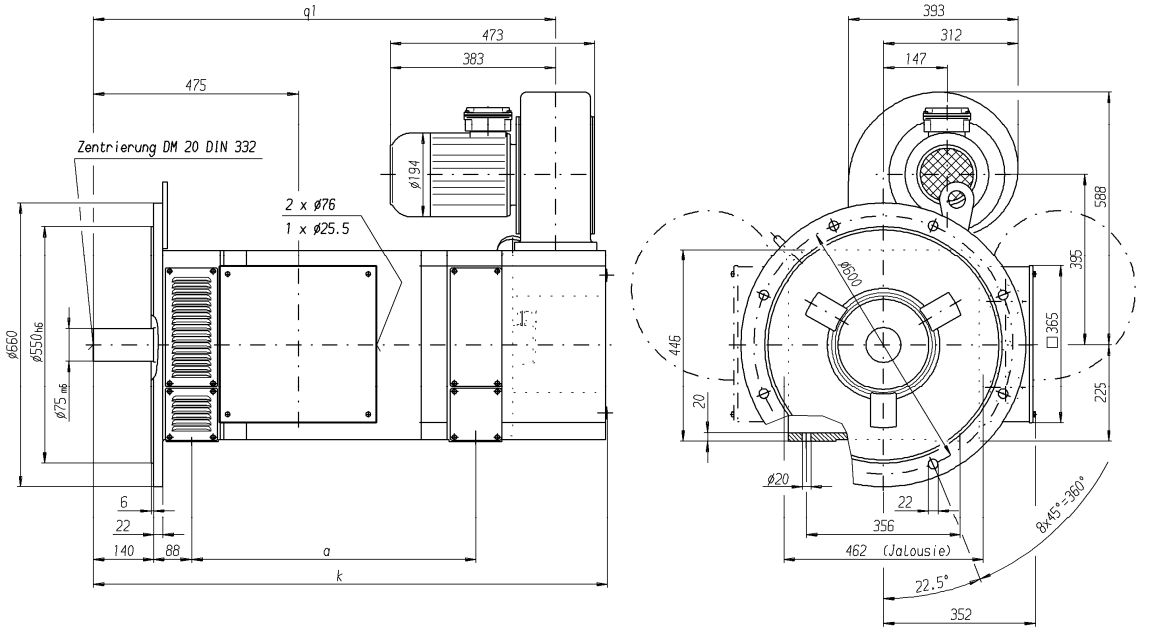
Type	a	k	k1	k2	q
DA 225 K..A..	559	1075	1170	1315	540
DA 225 M..A..	659	1175	1270	1415	640
DA 225 L..A..	749	1265	1360	1505	730

For terminal box dimensions and gland sizes see pages 44 and 45.

Version IMB3 with radial fan attached
DA..225..R



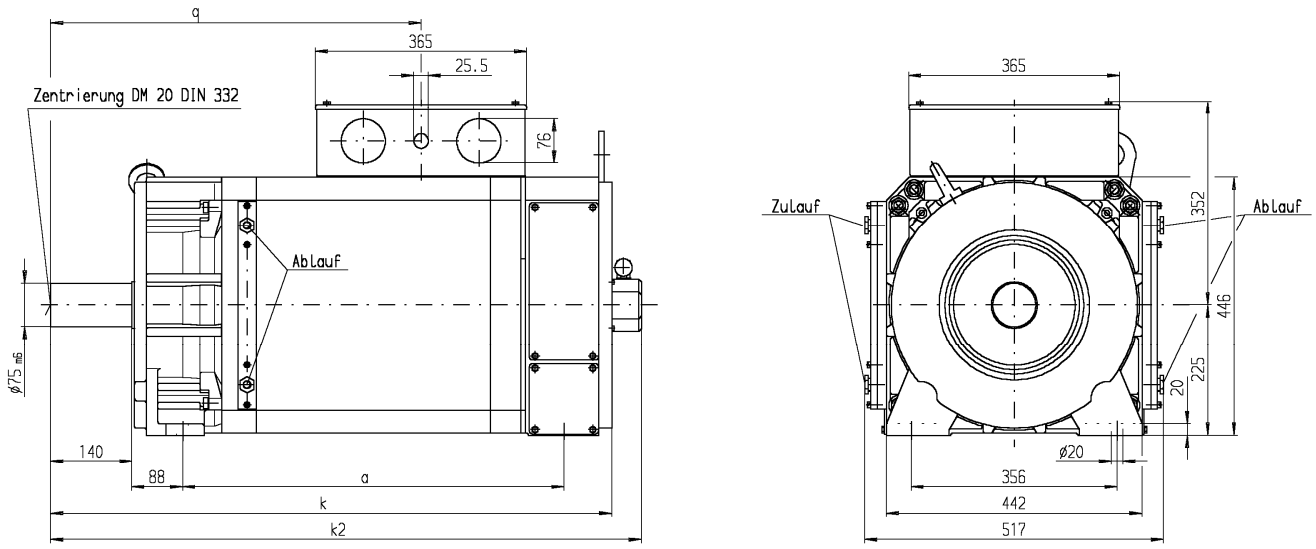
Version IMB35 with radial fan attached
DAFF..225..R



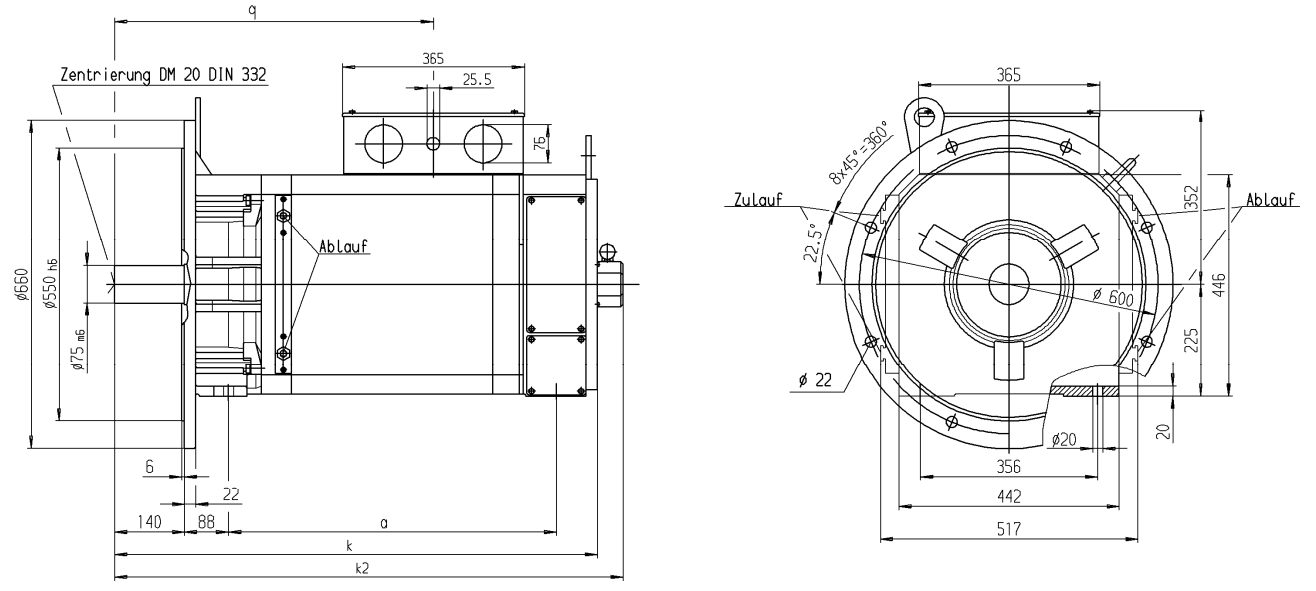
Type	a	k	q1
DA 225 K..R..	559	1091	972
DA 225 M..R..	659	1191	1072
DA 225 L..R..	749	1281	1162

For terminal box dimensions and gland sizes see pages 44 and 45.

Version IMB3 standard
DA..225..54W..



Version IMB35 standard
DAFF..225..54W..

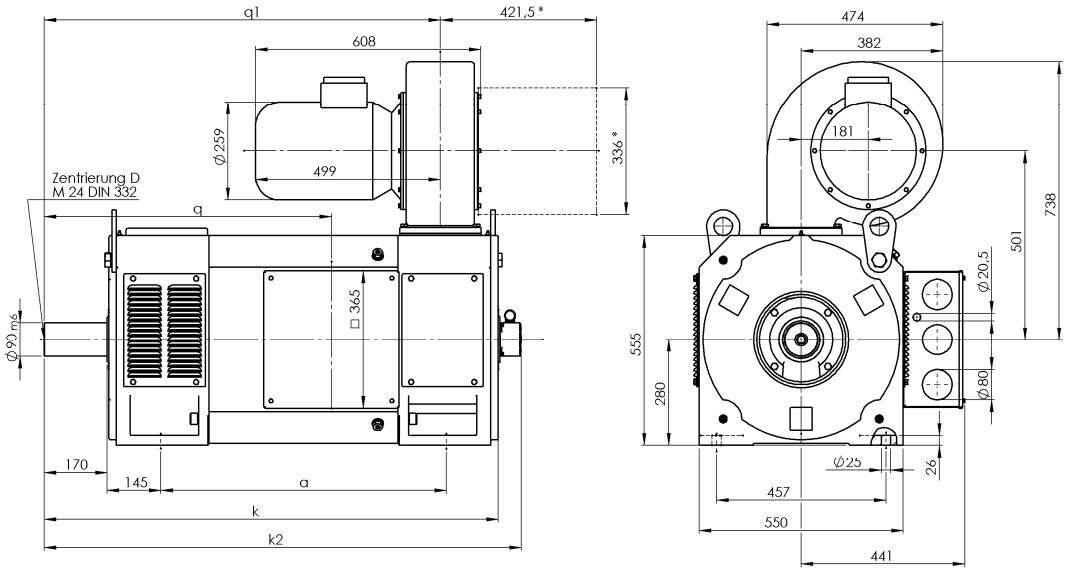


Type	a	k	k2	q
DA 225 K..W..	559	870	921	540
DA 225 M..W..	659	970	1021	640
DA 225 L..W..	749	1060	1111	730

For terminal box dimensions and gland sizes see pages 44 and 45.

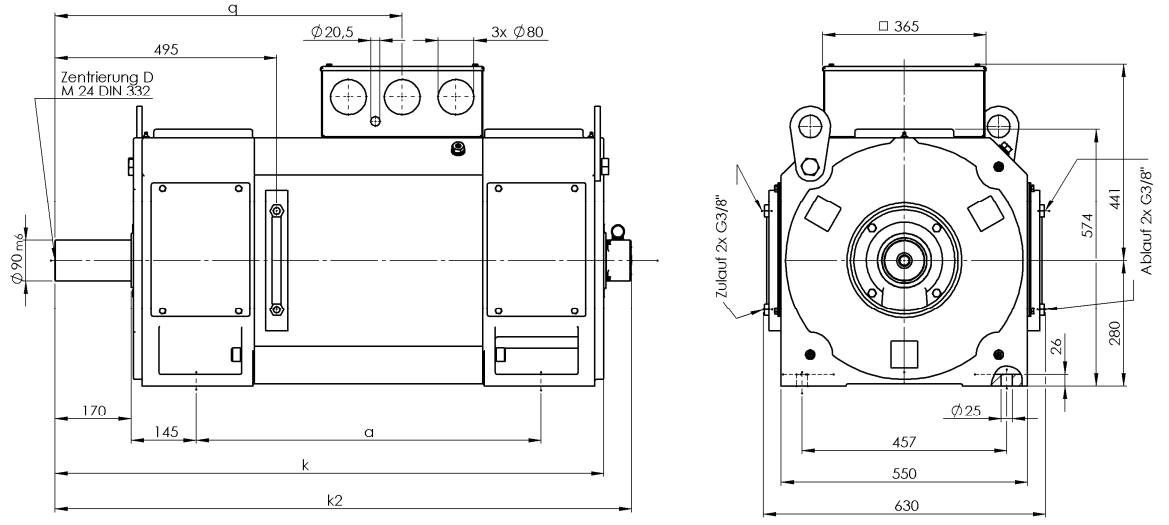
4.6. Dimension drawing DA 280

Version IMB3 standard with radial fan attached
DA 280..23R



Type	k	k2	a	q	q1
DA 280 K..23R..	1225	1287	770	775	1069
DA 280 M..23R..	1335	1397	880	885	1179
DA 280 L..23R..	1445	1507	990	995	1289

Version IMB3 standard
DA 280..54W..



Type	k	k2	a	q
DA 280 K..54W..	1225	1287	770	775
DA 280 M..54W..	1335	1397	880	885
DA 280 L..54W..	1445	1507	990	995

For terminal box dimensions and gland sizes see pages 44 and 45.

5. Commissioning and maintenance instructions

When commissioning water-cooled motors, please request the Commissioning and Maintenance Instructions numbered 00612. Ventilated motors are covered by the Commissioning and Maintenance Instructions numbered 00609.

6. Declaration of Conformity/Manufacturer's Declaration

In this section we give general information on EC directives, CE marking and on the Declaration of Conformity/Manufacturer's Declaration.

6.1. What is an EC directive

EC directives state requirements. The directives are compiled by the relevant authorities within the EU and are implemented in national law by all member states.
In this way, the EC directives safeguard free trade within the EU.

An EC directive contains only essential minimum requirements. You will find detailed requirements in standards that are referenced in the directive.

6.2. What does the CE mark signify?

a) CE marking certifies conformity with all the obligations that need to be met by the manufacturer in relation to a product, based on the community directives containing provisions relating to CE marking.

b) The CE mark applied to industrial products signifies that the natural or legal person who applies the mark or has the mark applied, has ensured that the product meets all Community directives on complete harmonization and has been subjected to all the conformity assessment procedures demanded by the regulations.

Decision 93/465/EEC of the Council, Annex I B. a) + c)

We apply the CE mark to the unit and to the documentation as soon as we have ascertained that we have met the requirements of the relevant directives.

As long as this Baumüller product is used correctly within your overall machine, you can assume that the product complies with the requirements of 2006/95/EC.

A key aspect for ensuring compliance with 89/336/EEC (EMC directive) is how this product is installed. Since you are performing the installation, you are also responsible for compliance with 89/336/EEC.

We provide you with support in the form of EMC instructions. This information can be found in the relevant technical instructions. If you have met all the requirements stated in this documentation and in the technical instructions, you can assume (standard: ”suppose”) that the product complies with the requirements of the EMC directive.

All national, local, and system-specific regulations must also be observed.

To operate your machine in the EU, the following must be available:

- Conformity mark (CE mark)
- Declaration(s) of Conformity in relation to the directive(s) relevant for the machine.

6.3. Declaration of Conformity, definition of term

Within the context of this documentation, a Declaration of Conformity is a declaration that the electrical equipment placed on the market complies with all applicable essential health and safety requirements.

With the Declaration of Conformity provided in this section, Baumüller Nürnberg GmbH declares that the product complies with the applicable essential health and safety requirements from the directives and standards that are listed in the Declaration of Conformity.

6.4. Manufacturer's Declaration, definition of term

Within the context of this documentation, a Manufacturer's Declaration is a declaration that the machinery/safety components placed on the market complies with all applicable essential health and safety requirements.

With the Manufacturer's Declaration provided in this section, Baumüller Nürnberg GmbH declares that the product complies with the applicable essential health and safety requirements from the directives and standards that are listed in the Manufacturer's Declaration.

The product from Baumüller Nürnberg GmbH is installed in a machine. For the health and safety of the user (and others), it is important that the overall machine complies with all applicable essential health and safety requirements.
For this reason Baumüller Nürnberg GmbH highlights in the Manufacturer's Declaration that the commissioning of the overall machine must be prohibited until it has been clarified that the machine complies with the stipulations of the Machinery Directive.

6.5. EU – Declaration of Conformity

EG - Konformitätserklärung

Hersteller: Baumüller Nürnberg GmbH
Ostendstr. 80 – 90
D-90482 Nürnberg
Deutschland

Produktbezeichnung: Drehstrom-Asynchron-Motor
Baureihe DA

Das bezeichnete Produkt stimmt mit den Vorschriften der EG-Niederspannungs-richtlinie 73/23 EWG überein:

Die Übereinstimmung des bezeichneten Produkts mit den Vorschriften dieser Richt-linie wird nachgewiesen durch die vollständige Einhaltung folgender harmonisierter Europäischer Normen:

Referenznummer	Ausgabedatum
EN 60034-1	September 2000 + A11 Mai 2002
EN 60034-5	Dezember 2001
EN 60034-9	Juni 1998

Nationale Normen (nach Maschinenrichtlinie Art.5 Abs. 1 Satz 2)

Referenznummer
VDE 0530

Das sichtbare Zeichen für die Konformität des bezeichneten Produktes mit dieser Richtlinie ist die Vergabe und Anbringung der

CE-Kennzeichnung

Ort, Datum: ..... Nürnberg, 03.07.02

Rechtsverbindliche Unterschrift: .....

Diese Erklärung bescheinigt die Übereinstimmung mit den genannten Richtlinien, beinhaltet jedoch keine Zusicherung von Eigenschaften. Die Sicherheitshinweise der mitgelieferten Produktdokumentation ist zu beachten.

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