



**DYNASYN**  
**DD servo motors.**

Dynamic. Compact. Energy-efficient.

**AMK**



**BENEFITS**

- Maximum dynamic response
- Increased energy efficiency
- High cost effectiveness
- Long service life
- Single-cable solution



## DYNASYN synchronous servo motors.

The DYNASYN DD series of synchronous servo motors features high torque density with very low moment of inertia and very good efficiency. The focus during development was especially on cost effectiveness, dynamic response, and energy efficiency.

The DYNASYN DD synchronous servo motors of AMK are developed and produced in house based on decades of experience and expertise. Knowledge from many years of producing motors in very large production lots for the automotive industry enables motors to be produced in Germany at internationally competitive prices.

The use of high-value materials and the optimized design, in addition to the use of innovative cooling concepts, have contributed to a longer achievable service life.

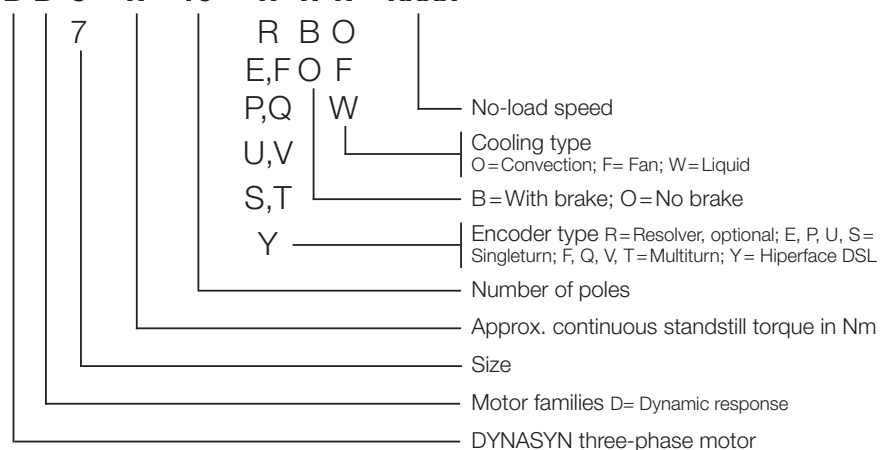
DD motors are available with convection, air, or liquid cooling, depending on the model. A single-cable version and a version with separate connectors for power and encoder connections are available.

The modular design of the DD motors not only makes faster delivery possible but also allows customized expansions of the motors problem-free. Cost-effectiveness is achieved by the high energy efficiency as well as by the long service life (rated at 40,000 hours).

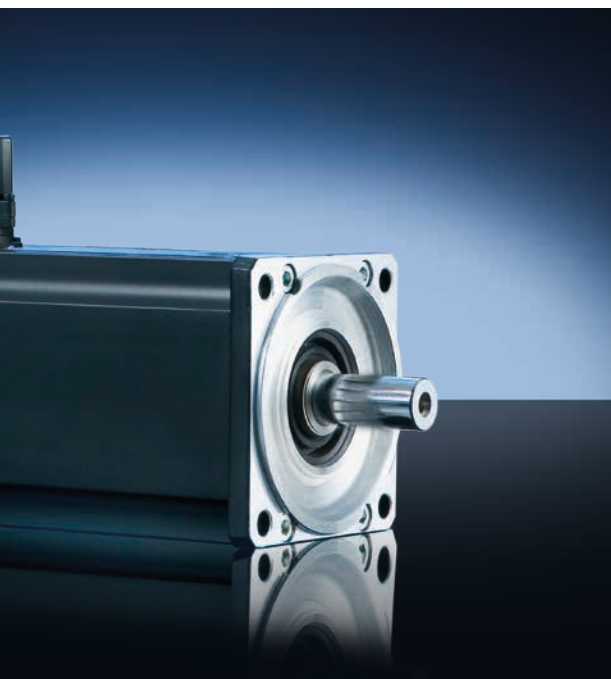
Based on its high dynamic response, the new motor series provides cross-sector advantages for motion tasks as a positioning drive and cycle drive. This applies in particular to the following sectors: packaging machines, plastics machines, woodworking machines, and robots. This represents a large potential for use. The energy efficiency of the motor series also makes it highly desirable for battery-operated mobile applications.

### Type key

**DD 5 - x - 10 - x x x - xxxx**



# DYNASYN DD 5 servo motors



## BENEFITS

- Maximum acceleration
- Excellent torque/inertia ratio
- Best values for energy efficiency
- Maximum service life

This size covers torques up to a maximum of 67 Nm. The DD5 motors are available in convection-cooled and liquid-cooled versions.

A single-cable version and a version with separate connectors for power and encoder cables are available.

## Applications

- Packaging machines
- Plastics machines
- Woodworking machines
- Robots
- Textile machines

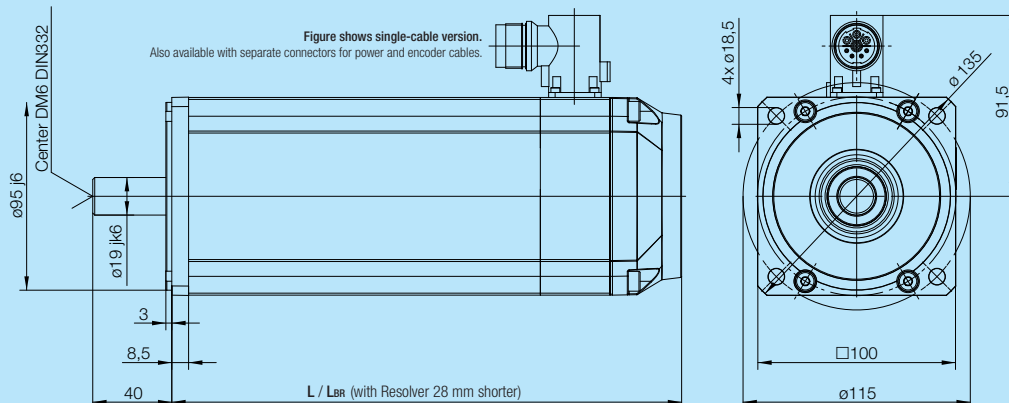
## Technical data

Motor type	Static data		Rating					Maximum data		Electrical data		Mechanical data				
	$M_0$ [Nm]	$I_0$ [A]	$M_N$ [Nm]	$P_N$ [kW]	$I_N$ [A]	$n_N$ [1/min]	$k_T$ [Nm/A]	$M_{max}$ [Nm]	$I_{max}$ [A]	$L_{tt}$ [mH]	$R_{tt}$ [Ω]	$n_{max}$ [1/min]	$J^*$ [kgcm <sup>2</sup> ]	$L$ [mm]	$L_{BR}$ [mm]	$m$ [kg]
<b>CONVECTION-COOLED</b>																
DD5-4-10-xx0-3400	3.9	2.5	3.3	0.86	2.3	2500	1.52	9.6	7.5	26	9.9	3400	1.4	163.5	196.5	3.65
DD5-4-10-xx0-6800	3.9	5.1	2.8	1.5	4.1	5000	0.8	9.6	15	6.6	2.5	6800	1.4	163.5	196.5	3.65
DD5-7-10-xx0-3100	7.3	4.4	6	1.6	3.8	2500	1.66	21	15	12	4.1	3100	2.8	195	228	4.9
DD5-7-10-xx0-6200	7.3	8.7	4.6	2.4	6.1	5000	0.84	21	30	3.1	1.0	6200	2.8	195	228	4.9
DD5-13-10-xx0-3200	13	7.8	10	2.6	6.5	2500	1.63	44	33	5.1	1.53	3200	5.4	258	291	7.4
DD5-13-10-xx0-5700	13	14	7.1	3.7	8.5	5000	0.92	44	58	1.6	0.49	5700	5.4	258	291	7.4
<b>LIQUID-COOLED</b>																
DD5-24-10-xxW-3200	25	15.4	23	4.8	15	2000	1.62	44	33	5.1	1.53	3200	5.5	256	276	8.6
DD5-24-10-xxW-5700	25	27	22	9.1	25	4000	0.92	44	58	1.6	0.49	5700	5.5	256	276	8.6
DD5-39-10-xxW-2900	39	22	36	7.6	21	2000	1.77	67	46	3.9	1.21	2900	8.3	316	336	12.4
DD5-39-10-xxW-5700	39	42	34	14.1	39	4000	0.93	67	88	1.1	0.34	5700	8.3	316	336	12.4

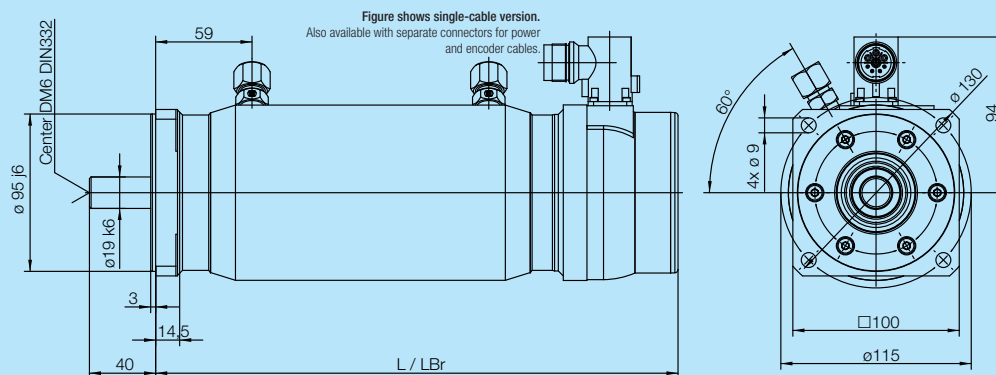
\* For motors with brake, additional moment of inertia of 0.31 kgcm<sup>2</sup>

## Dimensions

### Convection-cooled

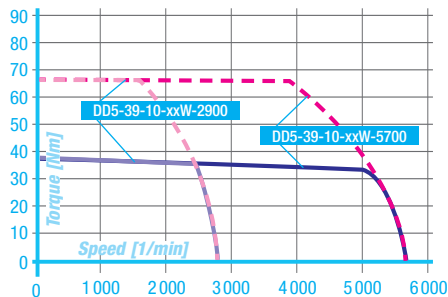
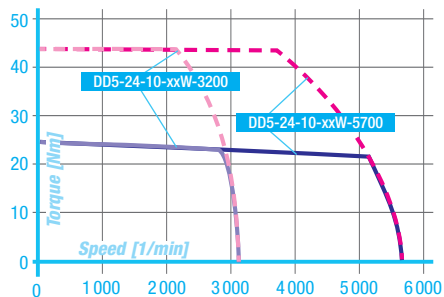
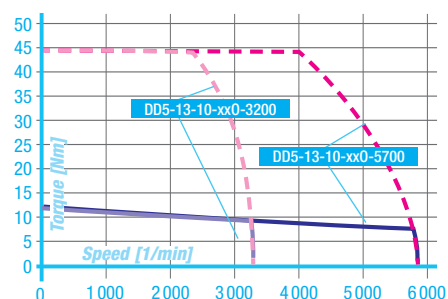
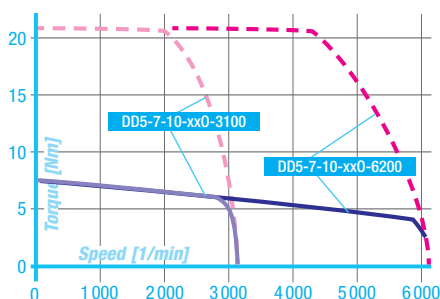
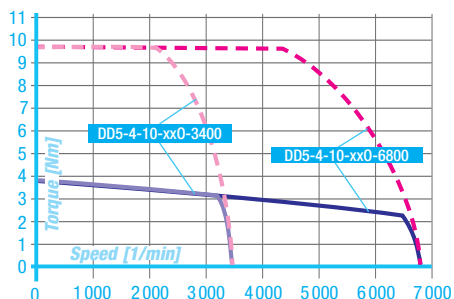


### Liquid-cooled



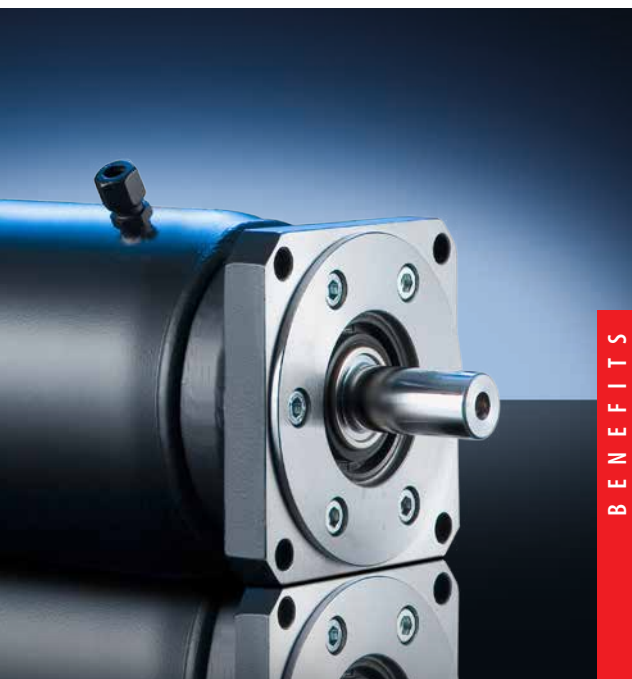
All dimensions are given in mm

## Characteristic curves



--- Maximum torque — Thermal continuous torque

# DYNASYN DD 7 servo motors



B E N E F I T S

- Maximum acceleration
- Excellent torque/inertia ratio
- Best values for energy efficiency
- Maximum service life

This size covers torques up to a maximum of 171 Nm. The DD7 motors are available with convection, air, and liquid cooling.

A single-cable version and a version with separate lines for power and encoder.

## Applications

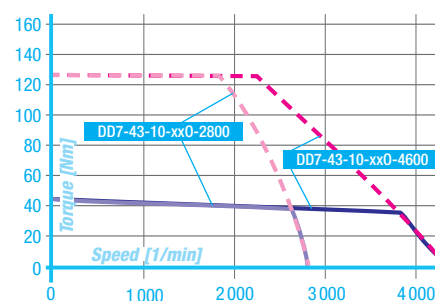
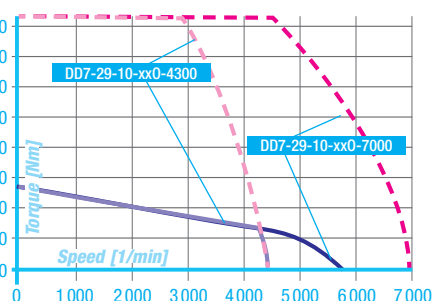
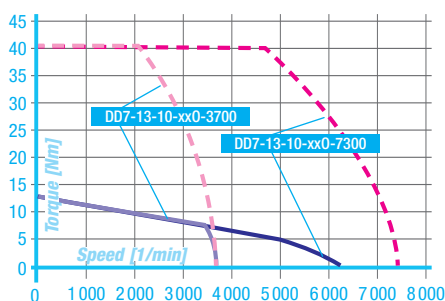
- Packaging machines
- Plastics machines
- Woodworking machines
- Robots
- Textile machines

## Technical data

Motor type	Static data				Rating				Maximum data		Electrical data		Mechanical data			
	M <sub>0</sub> [Nm]	I <sub>0</sub> [A]	M <sub>N</sub> [Nm]	P <sub>N</sub> [kW]	I <sub>N</sub> [A]	n <sub>N</sub> [1/min]	k <sub>T</sub> [Nm/A]	M <sub>max</sub> [Nm]	I <sub>max</sub> [A]	L <sub>tt</sub> [mH]	R <sub>tt</sub> [Ω]	n <sub>max</sub> [1/min]	J* [kgcm <sup>2</sup> ]	L [mm]	L <sub>BR</sub> [mm]	m [kg]
<b>CONVECTION-COOLED</b>																
DD7-13-10-xx0-3700	13	9.1	8.4	2.7	6.5	3000	1.42	40	33	6.9	0.83	3700	8.2	220.5	250.5	9.5
DD7-13-10-xx0-7300	13	18	6.4	2.8	10	4200	0.71	40	66	1.7	0.21	7300				
DD7-29-10-xx0-4300	28	23	16	5.9	14.5	3500	1.21	84	82	2.2	0.22	4300	15.8	283.5	313.5	13.5
DD7-29-10-xx0-7000	28	37	14	5.9	21	4000	0.75	84	132	0.83	0.083	7000				
DD7-43-10-xx0-2800	43	23	30	7.6	17.5	2400	1.85	128	82	3.2	0.30	2800	23.4	346.5	376.5	17.5
DD7-43-10-xx0-4600	43	37	23	8.8	22	3600	1.15	128	132	1.3	0.11	4600				
DD7-58-10-xx0-2100	57	23	45	8.4	19	1800	2.50	171	81	4.2	0.38	2100	31.0	409.5	439.5	21.5
DD7-58-10-xx0-3400	57	37	36	12	25	3000	1.53	171	132	1.7	0.14	3400				
<b>AIR-COOLED</b>																
DD7-57-10-xxF-2800	55	30	46	9.7	27	2000	1.84	128	82	3.2	0.30	2800	23.4	349.5	379.5	22.0
DD7-57-10-xxF-4600	55	49	41	14.8	39	3500	1.13	128	132	1.3	0.11	4600				
DD7-77-10-xxF-2100	74	30	64	10.8	28	1600	2.50	171	81	4.2	0.38	2100	31.0	412.5	442.5	26.0
DD7-77-10-xxF-3400	74	49	59	16	41	2600	1.52	171	132	1.7	0.14	3400				
<b>LIQUID-COOLED</b>																
DD7-50-10-xxW-4300	47	40	39	12.4	36	3000	1.17	84	82	2.2	0.22	4300	15.5	298	342	21.3
DD7-50-10-xxW-7000	47	64	36	18.8	54	5000	0.73	84	132	0.83	0.083	7000				
DD7-70-10-xxW-2800	72	40	64	13.3	38	2000	1.80	128	82	3.2	0.30	2800	23.4	348	392	28.5
DD7-70-10-xxW-4600	72	65	61	19	59	3000	1.11	128	132	1.3	0.11	4600				
DD7-100-10-xxW-2100	96	40	88	12.9	38	1400	2.40	171	81	4.2	0.38	2100	31.4	408	452	35.7
DD7-100-10-xxW-3400	96	65	83	21.7	60	2500	1.48	171	132	1.7	0.14	3400				

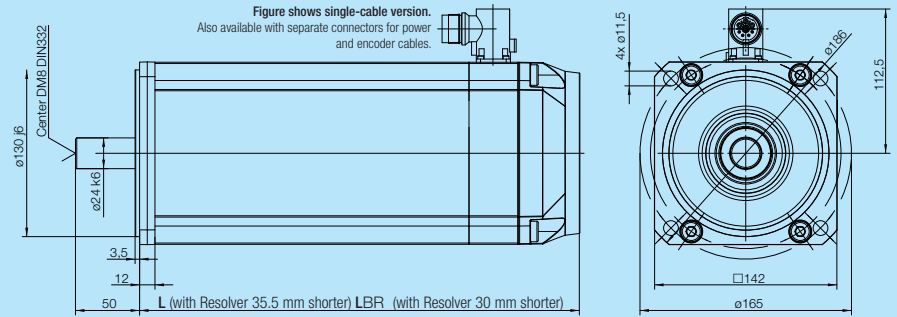
\* For motors with brake, additional moment of inertia of 0.4 kgcm<sup>2</sup>

## Characteristic curves

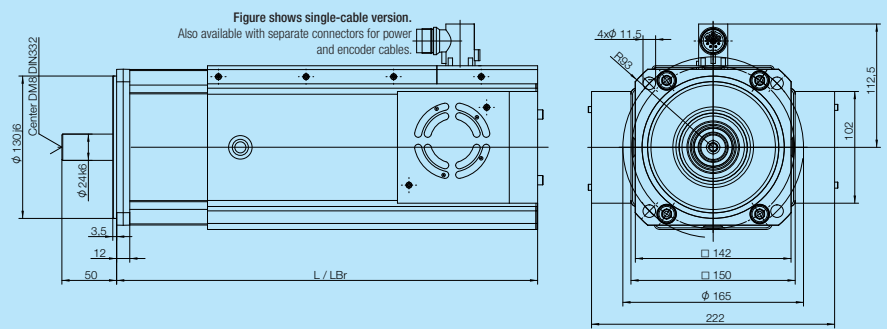


## Dimensions

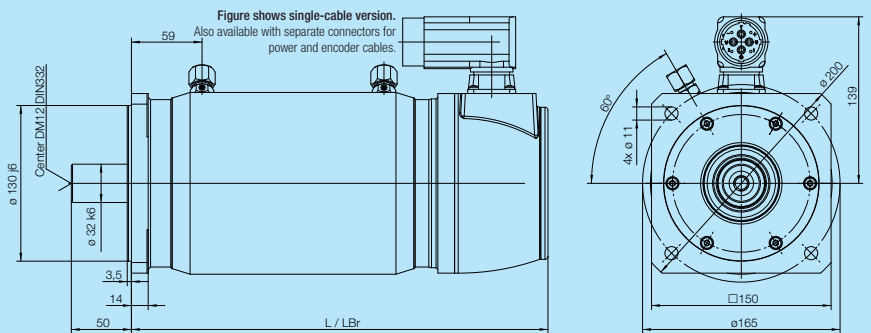
### Convection-cooled



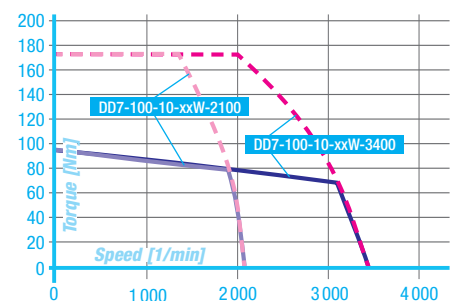
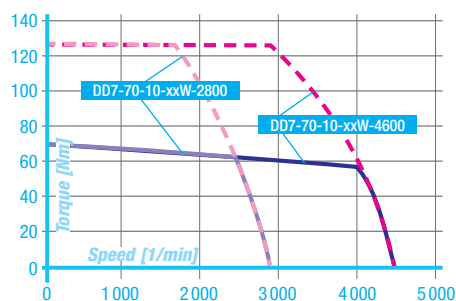
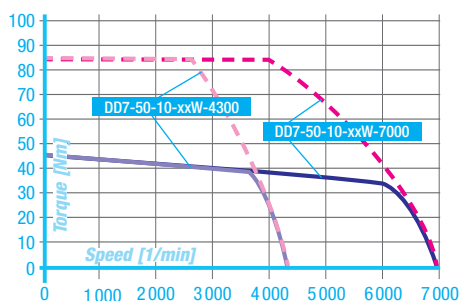
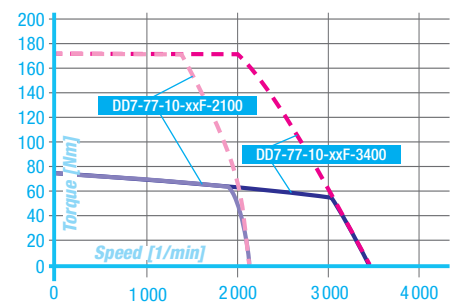
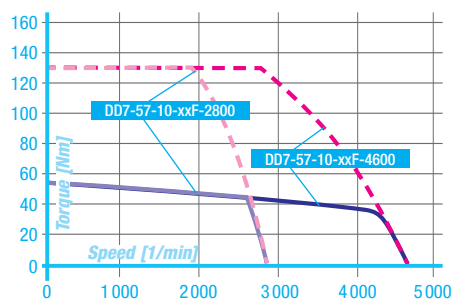
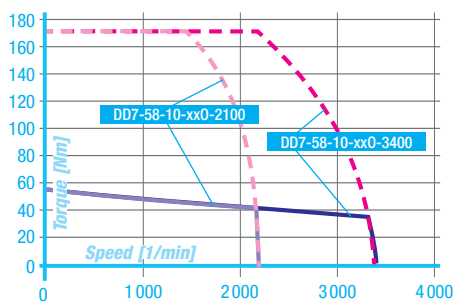
### Air-cooled



### Liquid-cooled



All dimensions are given in mm



--- Maximum torque — Thermal continuous torque

## Control your Motion.



- **AMKAMAC**  
controllers
- **AMKASYN**  
servo converters
- **DYNASYN**  
servo motors
- **AMKASMART**  
decentralized  
drive technology
- **SPINDASYN**  
linear drives

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## Abbreviations

Symbol	Unit	Meaning
$I_{max}$	A	Maximum current
$I_n$	A	Rated current
$I_o$	A	Continuous standstill current
$J$	kgcm <sup>2</sup>	Motor moment of inertia
$k_T$	Nm/A	Torque constant ( $M=I*k_T$ )
$L$	mm	Motor length
$L_{BR}$	mm	Length of motor with brake
$L_{tt}$	mH	Terminal inductance
$m$	kg	Motor mass
$M_{max}$	Nm	Maximum torque
$M_N$	Nm	Rated torque
$M_o$	Nm	Continuous torque
$n_{max}$	rpm	Maximum speed
$n_N$	rpm	Rated speed
$P_N$	kW	Rated power
$R_{tt}$	$\Omega$	Terminal resistance

## General technical data

### Degree of protection:

IP54/ IP 65 Higher degree of protection on request

### Rating:

Refers to a winding overtemperature of 80 K. The motor is checked by means of a thermally insulating flange.

The motor voltage is 350V.

### Insulation class:

F in accordance with DIN VDE 0530

### Thermal protection:

KTY84-130

### Motor bearings:

Ball bearings lubricated for life

### Axial runout, shaft runout:

N in accordance with DIN 42955

### Balance quality:

G 2.5 (half-key) in accordance with VDI 2056

### Vibrational quality:

N in accordance with DIN ISO 2373

### Paint:

RAL 9005, black matt finish

### Cooling:

Convection cooling, air cooling, or liquid cooling

## Ambient conditions

### Ambient temperature:

+5...+40°C. At higher ambient temperatures up to a maximum of 60 °C, the rating data must be reduced by 1% for every 1 K of temperature increase.

### Site altitude:

Up to 1000 m a.m.s.l. When motor is operated at elevations greater than 1000 m, DIN VDE 0530 Table 4 is the basis for the ambient temperatures.

### Humidity:

Maximum 85% relative humidity, non-condensing.

The information in this brochure serves only as a product description for a series of products. Deviations are possible due to specific product features and ongoing development activities. Before using the data for calculation or design purposes, you should inquire about the current status and request product-specific dimension drawings and data sheets.