

**be in motion**

## **Three-phase synchronous motors**

**DSD2-028-132**



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Therefore, we cannot accept liability for the correctness of the information in this document.

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# 1. Three-phase synchronous motors DSD2-028-132




The motors of the DSD2 - servo series are non-cooled, surface or water-cooled three-phase synchronous motors. Low rotor inertia and optimized performance provides the 8-pole motors with an excellent accelerating power.

This motor series is covered to a speed range up to 6000 rpm. These motors are highly dynamic, excellent in terms of speed and position control and thus ideally suited for applications in machine tools, production machines (e.g., printing, packaging, textiles, plastics), in handling equipment and in the medical field.

## 1.1. General technical data

Version	IM B5	Horizontal installation position according to EN 60034-7
	IM V1	Vertical installation position, shaft end down, according to EN 60034-7
		Vertical installation position, shaft end up, according to EN 60034-7
	IM V3	The shaft opening must be protected against water and dirt at protection class IP64
	IMB35	Size 132 Note: Sizes V1 and V3 are not available for DSD2-132.
Protection type	IP44	Size 028-036; Standard: without shaft seal ring
	IP54	Size 132
	IP64	Size 045-100; Standard: without shaft seal ring, with opposing plugs fitted and fully enclosed terminal boxes
	IP65	Option: with shaft seal ring, with opposing plugs fitted and fully enclosed terminal boxes
	IP65	Size 045-100; Without consideration of shaft bushing with opposing plugs fitted and fully enclosed terminal boxes
	IP67	Size 045-100; Without consideration of the shaft bushing for IC410 and IC 3W7, fitted with mating connectors, not for motors with terminal box
Connection	Main connection	See chapter 3.8.2, 3.5.10 und 3.5.11
	Encoder connection	See chapter 3.5 The main, encoder and fan connector can optionally be obtained in the speedtec version At the DSD2-132 the encoder and fan connector are in the speedtec version
	Brake	Connection in the main connection, separate connection at the DSD2-132 Note: If the main connection is speedtec design then all the other connection sockets will be implemented with speedtec sockets
Temperature sensor	Temperature sensor	Standard in the main connection and optional in the encoder socket
	KTY84 - 130 On request PT1000	linear temperature sensor for the analysis in the controller
Cooling type	IC 410	Size 028-100 surface-cooled without fan
	IC 416	Size 056-132 surface-cooled with fan
	IC 3W7	Size 056-132 water-cooled machine
Heating	$\Delta\vartheta = 105 \text{ K}$	Insulation material class F according to EN 60034
Environmental conditions for running	Class 3K3/3Z12 as per DIN EN 60721-3-3, however: temperature range 0-40 °C	Represents 0 to 40 °C at 5 % to 85 % rel. humidity and an absolute humidity of 1 g/m <sup>3</sup> to 25 g/m <sup>3</sup> and an installation height up to approx. 1,400 m.

Environmental conditions for long-term storage	Class 1K2/1M1 DIN EN 60721-3-1, however: temperature range -15-60 °C	Represents -15 to 60 °C at 5 % to 85 % rel. humidity and an absolute humidity of 1 g/m <sup>3</sup> to 25 g/m <sup>3</sup> ; at temperatures below 3 °C you should drain the cooling water
Environmental conditions for transport	Class 2K2/2M1 DIN EN 60721-3-2, however: temperature range -15-60 °C	Represents -15 to 60 °C at 5 % to 85 % rel. humidity and an absolute humidity of 1 g/m <sup>3</sup> to 25 g/m <sup>3</sup> ; at temperatures below 3 °C you should drain the cooling water
Surface	untreated	Size 028-036
	Black matt	Size 045-132; RAL 9005
Bearing	D-side	Standard: Ball bearing, option: Roller bearing (size 056-100)
	N-side	Ball bearing, fixed bearing
Service life of bearing	L <sub>10h</sub> 20,000 h	Standard value, anti-friction bearing with permanent grease lubrication according to DIN EN60034-14 (0530-Part 14) :2004-09
Vibration levels	A	Option: (only for ball bearings)
	B	Standard: Normal according to DIN 42955
True running	N	Option: Reduced according to DIN 42955 (only at ball bearings)
	R	Standard: Normal according to DIN 42955
Vibration resistant up to	radial 3 g	10 Hz to 100 Hz according to EN 60068-2-6; DSD2-028-100
	axial 1 g	10 Hz to 100 Hz as per EN 60068-2-6 (Size 028-036 without brake)
	axial 0,5 g	10 Hz to 100 Hz as per EN 60068-2-6; DSD2-028-100
Flange	according to IEC standard	Centralization diameter: Clearance j6 at DSD2-028-100; h6 at DSD2-132
Shaft end	Cylindrical	Smooth as per DIN 748; also available with feather key DIN 6885
Holding brake	Option	Centralization with female thread as per DIN 332 Form D
		Permanent magnet brake at zero clearance at DSD2-028-100
Speed encoder	Resolver	Spring brake with clearance at DSD2-132
	SinCos encoder	Standard – see chapter 3.3
Approvals	CE	Options – see chapter 3.3
		Size 028-132
		Size 028-100, size 132 in preparation

## 1.2. General safety instructions

The standard versions of the motors are unsuitable for operation in salty or aggressive atmospheres and are not suitable for erection outdoors.

Suitable steps to reduce bearing currents are to be taken before commissioning the motor, depending on the application and system. The motor manufacturer must be consulted in this regard.

### Note:

With allocation of the motor in a specific protection class, it is a standardized brief test procedure. This can vary considerably depending on the actual environmental conditions at the site of installation. Depending on the environmental conditions, such as the chemical consistency of the dust materials or the cooling media being used at the site of installation, evaluation of the suitability of the motor based on the type of protection is only possible to a limited extent (e.g. electrically conducting dust materials or aggressive coolant vapors or coolant fluids). In these cases the motor must additionally be protected by appropriate measures on the machine side.

### 1.3. Definitions of power ratings

#### 1.3.1. Definitions of power ratings for air-cooled machines

The power ratings (torques) listed in the table apply to continuous operation (S1) at the rated speed and a maximum ambient temperature of 40 °C, for machines installed below 1,000 m a.m.s.l. If motors are to be operated at an ambient temperature of more than 40 °C, or altitudes above 1,000 m a.m.s.l., the required list power rating  $P_L$  (list torque  $M_n$ ) is calculated from the product of factors  $k_1$  and  $k_2$  (specified in the table below) and the required power rating  $P$  (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	1,000 m	2,000 m	3,000 m	4,000 m	5,000 m
Correction factor $k_2$	1	1.07	1.16	1.27	1.55

Design changes may be necessary in the case of ambient temperatures above 40 °C and installation of motors in an enclosure: For this reason, it is imperative that the manufacturer is contacted.

If, in the case of an increasing site altitude above 1,000 m, the ambient temperature decreases by approx. 10 °C per 1,000 m increase, no power correction is necessary (note the minimum operating temperature).

#### 1.3.2. Definitions of power ratings for water-cooled machines

The power ratings (torques) that appear in the list apply to permanent operation S1 at nominal speed, provided the cooling circuit requirements for water-cooled motors are met!

The reduction factors included in the table below must be considered when operating DSD2 motors with higher coolant inlet temperatures:

Coolant inlet temperature	25 °C	30 °C	35 °C	40 °C	45 °C
Percentage of list performance (torque)	100 %	97 %	95 %	92 %	89 %

### 1.4. Water cooling

#### 1.4.1. Coolant consistency

The coolant must satisfy the following specifications:

Conditions	Unit	Value
Maximum permitted system pressure	bar	6
Temperature of coolant - for motor	° C	10 to 25
pH value (at 20° C)	---	6.5 to 9
Overall hardness	mmol/l	1.43 to 2.5
Chloride - Cl <sup>-</sup>	mg/l	< 200
Sulphate - SO <sub>4</sub> <sup>2-</sup>	mg/l	< 200
Oil	mg/l	< 1
Permitted particle size of solid foreign objects, particles (e.g. sand)	mm	< 0.1

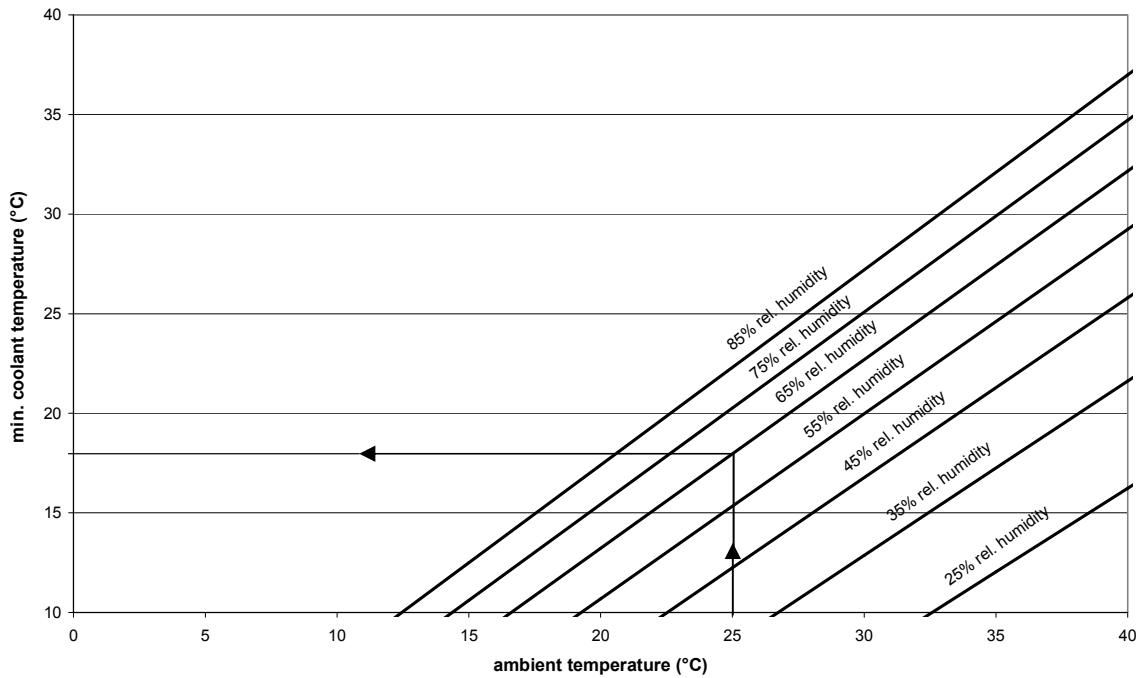
Clean water that is free of dirt and suspended matter must be used as a coolant.

**Note:**

If the specific heat capacity is reduced by adding glycol for example, in dependence of the mixing ratio is a power reduction in the consequence, which is to be asked for at the manufacturer.

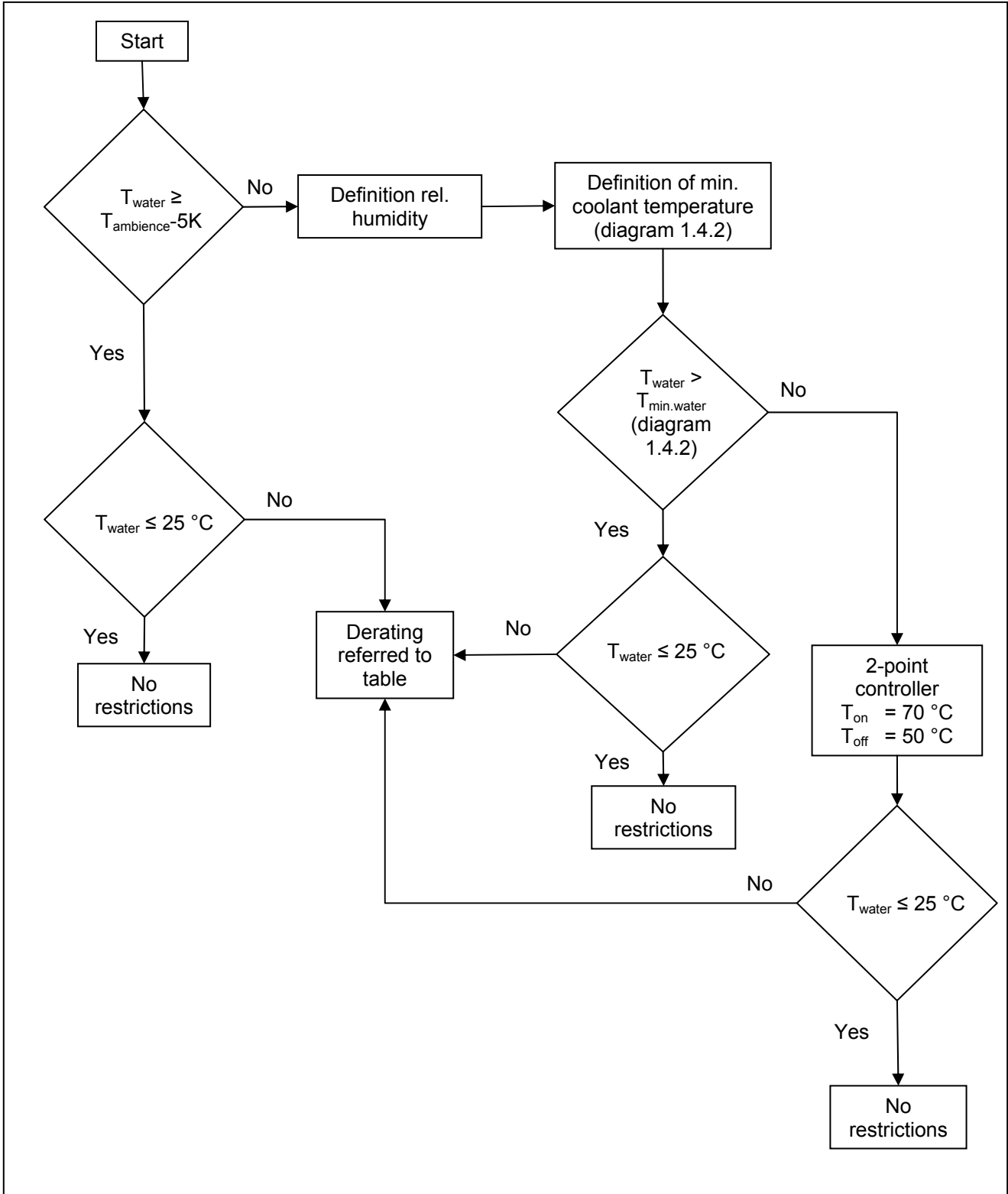
Compared to water cooling in the event of the use of hydraulic oil (HLP 46) a power rating reduction according to the overall length and speed of 20 to 25% arises for sizes 56-100 and 10% for size 132. The base is an inlet temperature of 35°C at both cooling mediums and an identical volume flow rate. The decrease of pressure is higher if using the hydraulic oil. Specific power ratings are available on request.

**1.4.2. Min. coolant temperature against ambient temperature and humidity**



The allowed coolant temperature depends on relative humidity and ambient temperature. For example with an ambient temperature of 25 °C and a relative humidity of 65% the minimum coolant temperature is 18 °C. Because these are limiting values on practical side a coolant temperature greater than 18 °C should be used. If this minimum coolant temperature will be under run the two- point controller of Baumüller drive must be used to avoid condensation.





**Note:**

The supply of cooling fluid must be interrupted to prevent condensation when storing for an extended period. In addition, at ambient temperatures <math>< 3\text{ }^\circ\text{C}</math> and if the motor has not run for an extended period, drain the cooling fluid to prevent damage caused by frost. When using anti-freeze you need to consult the manufacturer.

**1.4.3. Specifications for required coolant volume flows**

Motor type	Volume flow [l/min]	Pressure decrease $\pm 15\%$ [bar]	Heating [K]	Max. coolant pressure [bar]	Connection (2x) [mm]
DSD2-056SO..W	5	0,94	3	6	stainless steel tube Ø8x1
DSD2-056MO..W	5	0,96	4	6	stainless steel tube Ø8x1
DSD2-056LO..W	5	0,98	5	6	stainless steel tube Ø8x1

Motor type	Volume flow [l/min]	Pressure decrease $\pm 15\%$ [bar]	Heating [K]	Max. coolant pressure [bar]	Connection (2x) [mm]
DSD2-071SO..W	5	0,5	6	6	stainless steel tube Ø8x1
DSD2-071MO..W	5	0,65	7	6	stainless steel tube Ø8x1
DSD2-071LO..W	5	0,8	8	6	stainless steel tube Ø8x1

Motor type	Volume flow [l/min]	Pressure decrease $\pm 15\%$ [bar]	Heating [K]	Max. coolant pressure [bar]	Connection [mm]
DSD2-100SO..W	5	0,55	8	6	stainless steel tube Ø8x1
DSD2-100MO..W	5	0,65	9	6	stainless steel tube Ø8x1
DSD2-100LO..W	5	0,85	10	6	stainless steel tube Ø8x1
DSD2-100BO..W	5	1,0	12	6	stainless steel tube Ø8x1

Motor type	Volume flow [l/min]	Pressure decrease $\pm 15\%$ [bar]	Heating [K]	Max. coolant pressure [bar]	Connection
DSD2-132KO..W	15	0,35	3	6	Female thread G1/2"
DSD2-132MO..W	15	0,35	4	6	Female thread G1/2"
DSD2-132LO..W	15	0,35	4	6	Female thread G1/2"
DSD2-132BO..W	15	0,35	5	6	Female thread G1/2"
DSD2-132XO..W	15	0,35	5	6	Female thread G1/2"
DSD2-132YO..W	15	0,35	6	6	Female thread G1/2"
DSD2-132YZ..W	15	0,35	6	6	Female thread G1/2"

Controlling the feed valve individually is possible, depending on the motor temperature measured by the temperature sensor.

**Note:**

The given cooling volume flows relate to the highest rotary speed of the relevant motor lengths. It is possible to make an individual cooling unit evaluation on the basis of the motors power loss ( $P_V = P_N / \eta_N - P_N$ ). The cooling unit should be scaled so that its cooling performance matches the motor power loss and so that 100% of the waste heat is diffused by the unit.

Sufficient quantities of additives for corrosion and germ protection must be mixed in. The additive type and dosage are based on recommendations from the additive manufacturer and the prevailing ambient conditions. A lowering of the specific heating capacity leads to an output reduction in relation to the mixing ratio which should be enquired at the manufacturer.

**1.4.4. Materials in the motor that make contact with the medium**

The following materials that make contact with the medium are used in the motor:

Size 56-100:

Cooling system: stainless steel

Water connections: According to standard, the motors are supplied with a stainless steel tube Ø8x1 without additional connection technology. The water connection with the John Guest - quick connector SM 040 808 S can be optionally provided (dia 8 by dia 8). Please include this option including the order code when ordering.

Size 132

Cooling system: Aluminum cataphoretic coated

Connections: Galvanized steel

Seals: NBR

**1.5. Winding insulation**

DSD2-028-036:

The motors are designed for an operation on converters with intermediate link voltages of up to 540V + 10%.

DSD2-045-132:

The motors are designed for an operation on converters with intermediate link voltages of up to 640V. Higher intermediate link voltages of up to ≤ 800V are possible, if voltage spikes on the motor terminals are limited to <1200V by suitable filters in the motor supply line.

**1.6. Explanation of motor data**

$n_N$	Rated speed [rpm]
$M_0$	Nominal torque [Nm] with speeds $\geq 1$ [rpm] without time limit
$I_0$	nominal current [A] at $M_0$
$M_{0,max}$	Maximum static torque [Nm] with maximum current [A] and speed = 0, momentarily
$I_{0,max}$	Static current [A] at $M_{0,max}$ ; $I_{0,max}$ is the effective value
$P_N$	Rated output [kW] with $M_N$ and $n_N$ (see Performance definition)
$M_N$	Rated torque [Nm]
$I_N$	Rated effective current [A]
$k_E / cold$	Voltage constant (EMF) to [V per 1000 rpm]
$f_N$	Rated frequency [Hz]
J	Rotor inertia incl. resolver without holding brake [kgm <sup>2</sup> ]
m	Motor mass [kg]

When the converter is operating, the specified rated outputs and torques at the rated speed are achieved with a clocking frequency of  $\geq 4$  kHz in the power divider. A clocking frequency of  $> 6$  kHz is recommended. All converters scheduled for use must have the option of field weakening as a mandatory requirement.

The **sizemaXX** drive configurator is available at [www.baumueller.de](http://www.baumueller.de) for designing the motors and the overall drive system.

1.7. Type code

DSD2-XXXXXXXX-XX-XX-XXX-XXX-X-XX-X-XXX	<b>Type</b>
DSD2- <u>XXX</u> XXXXXXXX-XX-XX-XXX-XXX-X-XX-X-XXX	<b>Overall size</b> 028 036 045 056 071 100 132
DSD2-XXXX <u>XX</u> XXXX-XX-XX-XXX-XXX-X-XX-X-XXX	<b>Overall length</b> KO SO MO LO BO XO YO YZ
DSD2-XXXXXX <u>XX</u> X-XX-XX-XXX-XXX-X-XX-X-XXX	<b>Degree of protection</b> 44 - Degree of protection IP44 54 - Degree of protection IP54 64 - Degree of protection IP64 65 - Degree of protection IP65
DSD2-XXXXXXXX <u>X</u> -XX-XX-XXX-XXX-X-XX-X-XXX	<b>Cooling type</b> U - Without fan O - With fan, 230 VAC supply voltage for DSD2-056-100 A – axially fitted external fan R - radially fitted external fan W - Water cooling
DSD2-XXXXXXXX- <u>XX</u> -XX-XXX-XXX-X-XX-X-XXX	<b>Nominal speed class</b> 10 – 1000 rmp 12 - 1200 rmp 15 - 1500 rmp 20 - 2000 rmp 25 - 2500 rmp 30 - 3000 rmp 40 - 4000 rmp 45 - 4500 rmp 60 - 6000 rmp
DSD2-XXXXXXXX-XX- <u>XX</u> -XXX-XXX-X-XX-X-XXX	<b>Uzk_ DC</b> 31 - 310 V 54 - 540 V 5 - 540 V; at DSD2-132
DSD2-XXXXXXXX-XX-XX- <u>XXX</u> -XXX-X-XX-X-XXX	<b>Encoder type</b> O - No encoder A - Resolver

	<p>B - SEK52  C - SEL52  D - SRS50  E - SRM50  F - ECN1313  G - EQN1325  H - ECN1325  I - EQN1337  J - SEK37  K - SEL37  M - Resolver (Safety)  N - SRS50-S (Safety)  Q - SRM50-S (Safety)  R - SKS36  S - SKS36-S (Safety)  U - SKM36-S (Safety)  X - EQI1331  Y - ECI1319  5 - ECN1325-S (Safety)  6 - EQN1337-S (Safety)  a - EKS36 Hiperface DSL (18 bit)  b - EKM36 Hiperface DSL (18 bit)  g - EFS50 Hiperface DSL (21 bit)  h - EFM50 Hiperface DSL (21 bit)</p>
DSD2-XXXXXXXX-XX-XX- <u>XX</u> -XXX-X-XX-X-XXX	<p><b>Brake</b>  O - Without brake  B - With PE-brake</p>
DSD2-XXXXXXXX-XX-XX- <u>XX</u> -XXX-X-XX-X-XXX	<p><b>Shaft options</b>  A - Smooth shaft  B - With parallel key</p>
DSD2-XXXXXXXX-XX-XX- <u>XX</u> <b>[X]</b> -XXX-X-XX-X-XXX	<p><b>Type of design*</b>  1 - IM B3  7 - IM B35  8 - IM B35 flange 400 mm (size 132)  * Coding at DSD2-132 only</p>
DSD2-XXXXXXXX-XX-XX- <u>XX</u> - <u>XX</u> -X-XX-X-XXX	<p><b>Main connection type</b>  K – Terminal box (KTY on main connection)  T – Terminal box (KTY on encoder socket)  M – Terminal box (PT1000 on main connection)  Signal socket speedtec  N – Terminal box (PT1000 on encoder socket)  Signal socket speedtec  S – Terminal box M23-thread  (KTY on main connection)  P – Connector socket M23-thread  (KTY on encoder socket)  B – Connector socket speedtec  (PT1000 on main connection)</p>

	<p>D – Connector socket speedtec (PT1000 on the encoder socket)  Y – Combination receptacle angled (KTY on main connection)  Z – Combination receptacle angled (KTY on encoder socket)  U – Combination receptacle angled (PT1000 on main connection)  X – Combination receptacle angled (PT1000 on encoder socket)</p>
DSD2-XXXXXXXX-XX-XX-XXX- <u>XX</u> -X-XX-X-XXX	<p><b>Main outlet port</b>  T - Top  L - Left with a view toward D-side on shaft end  R - Right with a view toward D-side on shaft end  D - DE (D-side)  N - NDE (N-side)  P - Pivoted  <b>Position main connection*</b>  * Coding at DSD2-132, only</p>
DSD2-XXXXXXXX-XX-XX-XXX- <u>X</u> -X-XX-X-XXX	<p><b>Encoder connection outlet</b>  O – Without Encoder socket  T - Top  L - Left with a view toward D-side on shaft end  R - Right with a view toward D-side on shaft end  D - DE (D-side)  N - NDE (N-side)  P – Pivoted  <b>Outlet main connection*</b>  * Coding at DSD2-132, only</p>
DSD2-XXXXXXXX-XX-XX-XXX-XXX- <u>X</u> -XX-X-XXX	<p><b>Bearing</b>  K - Ball bearing D-side  R - Roller bearing D-side  * No hyphen at DSD2-132</p>
DSD2-XXXXXXXX-XX-XX-XXX-XXX-X- <u>XX</u> -X-XXX	<p><b>Vibration level</b>  A - Vibration level A  B - Vibration level B</p>
DSD2-XXXXXXXX-XX-XX-XXX-XXX-X- <u>X</u> -X-XXX	<p><b>True running</b>  N - Normal  R - Reduced</p>
DSD2-XXXXXXXX-XX-XX-XXX-XXX-X-XX[-X]-X-XXX	<p><b>Position cooling*</b>  T - Top  B - Bottom  L - Left with viewing direction D-side  R - Right with viewing direction D-side  A - Axial fan  * Coding at DSD2-132, only</p>

<p>DSD2-XXXXXXXX-XX-XX-XXX-XXX-X-XX[-XX]X-XXX</p>	<p><b>Option cooling*</b>                  O – without cooling optin (for water cooling)                   A - Without filter                  J - Flat filter with filter mat rough                  M – Rectangular filter with filter mat rough                  Q - Without filter (for Δ/Y 265-345V / 460-600V)                  S - Flat filter with filter mat rough                      Version Δ/Y 265-345V / 460-600V                  U - Rectangular filter with filter mat rough                      Version Δ/Y 265-345V / 460-600V                  * Coding at DSD2-132, only</p>
<p>DSD2-XXXXXXXX-XX-XX-XXX-XXX-X-XX-<u>X</u>-XXX</p>	<p><b>Gear box / pump mounting</b>                  O - Without transmission mount and without pump mounting                  A - BPE - Gear box                  B - BPEF - Gear box                  C - BPEA - Gear box                  D - BPN - Gear box                  E - BPNA - Gear box                  F - BPNF - Gear box                  G - BPV - Gear box                  H - BPVF - Gear box</p>
<p>DSD2-XXXXXXXX-XX-XX-XXX-XXX-X-XX-X-<u>XXX</u></p>	<p><b>Option</b>  <b>Special version</b>                  000 - No special version                  AJ1 - Water connection with connector                  OS1 – Fan with 115 VAC supply voltage                  OS2 - Fan with 24 VDC supply voltage                  XXX - Special version (internal coding)                  Special coding is made alphanumeric</p>

- Example configuration:
- DSD2-132LO54A-15-5-AOA-8-KTR-KAN-AAO-000
- DSD2-132LO54W-15-5-AOA-7-KTR-KAN-ROO-000

## 2. Technical data

### 2.1. DSD2-028

#### DSD2-028..44U-.. (without fan)

1 AC 230 V mains voltage for converters with unregulated supply

Rated speed	Motor type	Stand-still torque <sup>1)</sup>	Stand-still current <sup>1)</sup>	max. static torque	Max. static current	Rated output <sup>1)</sup>	Rated torque <sup>1)</sup>	Rated current <sup>1)</sup>	Voltage constant	Rated frequency	Rotor inertia (motor) <sup>2)</sup>	Weight <sup>3)</sup>
$n_N$ rpm		$M_0$ Nm	$I_0$ A	$M_{0,max}$ Nm	$I_{0,max}$ A	$P_N$ kW	$M_N$ Nm	$I_N$ A	$k_{E/cold}$ V/1000r/min	$f_N$ Hz	J kgcm <sup>2</sup>	m kg
4500	DSD2-028SO44U-45-31	0.7	1.55	2	6.1	0.28	0.6	1.4	31	300	0.13	1.5
	DSD2-028MO44U-45-31	1.2	2.6	3.9	11.9	0.47	1	2.3	28.5	300	0.2	2
6000	DSD2-028SO44U-60-31	0.7	1.9	2	7.5	0.35	0.55	1.65	22.5	400	0.13	1.5
	DSD2-028MO44U-60-31	1.2	3	3.9	13.7	0.57	0.9	2.4	24.7	400	0.2	2

3 AC 400 V mains voltage for converters with unregulated supply

Rated speed	Motor type	Stand-still torque <sup>1)</sup>	Stand-still current <sup>1)</sup>	max. static torque	Max. static current	Rated output <sup>1)</sup>	Rated torque <sup>1)</sup>	Rated current <sup>1)</sup>	Voltage constant	Rated frequency	Rotor inertia (motor) <sup>2)</sup>	Weight <sup>3)</sup>
$n_N$ rpm		$M_0$ Nm	$I_0$ A	$M_{0,max}$ Nm	$I_{0,max}$ A	$P_N$ kW	$M_N$ Nm	$I_N$ A	$k_{E/cold}$ V/1000r/min	$f_N$ Hz	J kgcm <sup>2</sup>	m kg
4500	DSD2-028SO44U-45-54	0.7	1	2	4	0.28	0.6	0.9	42.4	300	0.13	1.5
	DSD2-028MO44U-45-54	1.2	1.7	3.9	7.8	0.47	1	1.5	43.5	300	0.2	2
6000	DSD2-028SO44U-60-54	0.7	1	2	4	0.35	0.55	0.85	42.4	400	0.13	1.5
	DSD2-028MO44U-60-54	1.2	1.7	3.9	7.8	0.57	0.9	1.35	43.5	400	0.2	2

<sup>1)</sup> Coil overtemperature  $\Delta T < 105K$ ; direct flange mounting (mounting plate 250 mm x 250 mm x 10 mm)

<sup>2)</sup> Rotor moment of inertia with PE brake: +0.068 kgcm<sup>2</sup>

<sup>3)</sup> Weight with PE brake: +0.7 kg



## 2.2. DSD2-036

### DSD2-036..44U... (without fan)

1 AC 230 V mains voltage for converters with unregulated supply

Rated speed	Motor type	Stand-still torque <sup>1)</sup>	Stand-still current <sup>1)</sup>	max. static torque	Max. static current	Rated output <sup>1)</sup>	Rated torque <sup>1)</sup>	Rated current <sup>1)</sup>	Voltage constant	Rated frequency	Rotor inertia (motor) <sup>2)</sup>	Weight <sup>3)</sup>
$n_N$ rpm		$M_0$ Nm	$I_0$ A	$M_{0,max}$ Nm	$I_{0,max}$ A	$P_N$ kW	$M_N$ Nm	$I_N$ A	$k_{E/cold}$ V/10001/min	$f_N$ Hz	J kgcm <sup>2</sup>	m kg
4000	DSD2-036SO44U-40-31	1.2	2.4	2.8	7.9	0.44	1.05	2.2	31.3	267	0.18	2.5
	DSD2-036MO44U-40-31	2	3.6	5.7	15.1	0.67	1.6	2.9	34.3	267	0.3	3.3
4500	DSD2-036LO44U-45-31	2.8	5	8.4	22	0.85	1.8	3.45	33.6	300	0.42	4.1
6000	DSD2-036SO44U-60-31	1.2	3.55	2.8	12	0.57	0.9	2.7	21.3	400	0.18	2.5
	DSD2-036MO44U-60-31	2	5	5.7	21	0.82	1.3	3.35	24.9	400	0.3	3.3
	DSD2-036LO44U-60-31	2.8	6.15	8.4	27.2	0.9	1.45	3.45	27.3	400	0.42	4.1

3 AC 400 V mains voltage for converters with unregulated supply

Rated speed	Motor type	Stand-still torque <sup>1)</sup>	Stand-still current <sup>1)</sup>	max. static torque	Max. static current	Rated output <sup>1)</sup>	Rated torque <sup>1)</sup>	Rated current <sup>1)</sup>	Voltage constant	Rated frequency	Rotor inertia (motor) <sup>2)</sup>	Weight <sup>3)</sup>
$n_N$ rpm		$M_0$ Nm	$I_0$ A	$M_{0,max}$ Nm	$I_{0,max}$ A	$P_N$ kW	$M_N$ Nm	$I_N$ A	$k_{E/cold}$ V/10001/min	$f_N$ Hz	J kgcm <sup>2</sup>	m kg
4000	DSD2-036SO44U-40-54	1.2	1.45	2.8	4.7	0.44	1.05	1.35	52.7	267	0.18	2.5
4500	DSD2-036MO44U-45-54	2	2.55	5.7	10.7	0.71	1.5	1.95	48.6	300	0.3	3.3
	DSD2-036LO44U-45-54	2.8	3.45	8.4	15.3	0.85	1.8	2.3	49.3	300	0.42	4.1
6000	DSD2-036SO44U-60-54	1.2	2.05	2.8	7	0.57	0.9	1.5	37.4	400	0.18	2.5
	DSD2-036MO44U-60-54	2	2.95	5.7	12	0.82	1.3	2	42.1	400	0.3	3.3
	DSD2-036LO44U-60-54	2.8	3.85	8.4	17	0.9	1.45	2.15	43.8	400	0.42	4.1

<sup>1)</sup> Coil overtemperature  $\Delta T < 105K$ ; direct flange mounting (mounting plate 250 mm x 250 mm x 10 mm)

<sup>2)</sup> Rotor moment of inertia with PE brake: +0.18 kgcm<sup>2</sup>

<sup>3)</sup> Weight with PE brake: +0.9 kg

2.3. DSD2-045

DSD2-045..64U-.. (without fan)

3 AC 400 V mains voltage for converters with unregulated supply

Rated speed	Motor type	Stand-still torque <sup>1)</sup>	Stand-still current <sup>1)</sup>	max. static torque	Max. static current	Rated output <sup>1)</sup>	Rated torque <sup>1)</sup>	Rated current <sup>1)</sup>	Voltage constant <sup>1)</sup>	Rated frequency	Rotor inertia (motor) <sup>2)</sup>	Weight <sup>3)</sup>
$n_N$ rpm		$M_0$ Nm	$I_0$ A	$M_{0,max}$ Nm	$I_{0,max}$ A	$P_N$ kW	$M_N$ Nm	$I_N$ A	$k_{E/cold}$ V/10001/min	$f_N$ Hz	J kgcm <sup>2</sup>	m kg
3000	DSD2-045SO64U-30-54	2.7	1.75	12	8.9	0.73	2.3	1.56	102	200	1.0	4.2
	DSD2-045MO64U-30-54	4.3	2.7	20	14.1	1.2	3.8	2.5	105	200	1.5	5.3
	DSD2-045LO64U-30-54	5.8	3.7	28	19.6	1.65	5.2	3.3	105	200	1.9	6.4
4500	DSD2-045SO64U-45-54	2.7	2.5	12	12.7	0.98	2.1	2	71.3	300	1.0	4.2
	DSD2-045MO64U-45-54	4.3	3.9	20	20.4	1.6	3.4	3.2	73	300	1.5	5.3
	DSD2-045LO64U-45-54	5.8	5.3	28	28.3	2.2	4.6	4.3	73	300	1.9	6.4
6000 <sup>4)</sup>	DSD2-045SO64U-60-54	2.7	3.3	12	16.7	1.13	1.8	2.3	54.3	400	1.0	4.2
	DSD2-045MO64U-60-54	4.3	5.2	20	26.8	1.8	2.9	3.6	55.5	400	1.5	5.3
	DSD2-045LO64U-60-54	5.8	6.9	28	36.4	2.4	3.8	4.7	56.8	400	1.9	6.4

<sup>1)</sup> Coil overtemperature  $\Delta T < 105K$ ; direct flange mounting (mounting plate 250 mm x 250 mm x 10 mm)

<sup>2)</sup> Rotor moment of inertia with PE brake: +0.6 kgcm<sup>2</sup>

<sup>3)</sup> Weight with PE brake: +1.0 kg

<sup>4)</sup> in combination with Heidenhain absolute signal encoders available on request

## 2.4. DSD2-056

### DSD2-056..64U... (without fan)

3 AC 400 V mains voltage for converters with unregulated supply

Rated speed	Motor type	Stand-still torque <sup>1)</sup>	Stand-still current <sup>1)</sup>	max. static torque	Max. static current	Rated output <sup>1)</sup>	Rated torque <sup>1)</sup>	Rated current <sup>1)</sup>	Voltage constant	Rated frequency	Rotor inertia (motor) <sup>2)</sup>	Weight <sup>3)</sup>
$n_N$ rpm		$M_0$ Nm	$I_0$ A	$M_{0,max}$ Nm	$I_{0,max}$ A	$P_N$ kW	$M_N$ Nm	$I_N$ A	$k_{E/cold}$ V/1000r/min	$f_N$ Hz	J kgcm <sup>2</sup>	m kg
2000	DSD2-056SO64U-20-54	7	3.5	25	13.7	1.28	6.1	3.1	134	133.3	3.6	8.3
	DSD2-056MO64U-20-54	11	5	41	21	1.95	9.3	4.3	144	133.3	5.1	10.6
	DSD2-056LO64U-20-54	14	6.4	57	28.9	2.3	11	5.2	146	133.3	6.6	13.0
3000	DSD2-056SO64U-30-54	7	4.9	25	19.1	1.77	5.6	4	96.2	200	3.6	8.3
	DSD2-056MO64U-30-54	11	7.2	41	30.3	2.7	8.4	5.7	100	200	5.1	10.6
	DSD2-056LO64U-30-54	14	9.3	57	42	3	9.6	6.5	100	200	6.6	13.0
4500	DSD2-056SO64U-45-54	7	7.2	25	28.3	2.3	5	5.2	65	300	3.6	8.3
	DSD2-056MO64U-45-54	11	10.6	41	44.9	3.3	7	7	67.4	300	5.1	10.6
	DSD2-056LO64U-45-54	14	13.2	56	59	3.3	6.9	6.9	71.2	300	6.6	13.0
6000 <sup>4)</sup>	DSD2-056SO64U-60-54	7	9.2	25	36.1	2.7	4.3	5.9	50.9	400	3.6	8.3
	DSD2-056MO64U-60-54	11	13.7	41	58	3.4	5.4	7	52.3	400	5.1	10.6
	DSD2-056LO64U-60-54	14	17	56	77	2.5	4	5.6	55	400	6.6	13.0

### DSD2-056..64O... (with fan)

3 AC 400 V mains voltage for converters with unregulated supply

Rated speed	Motor type	Stand-still torque <sup>1)</sup>	Stand-still current <sup>1)</sup>	max. static torque	Max. static current	Rated output <sup>1)</sup>	Rated torque <sup>1)</sup>	Rated current <sup>1)</sup>	Voltage constant	Rated frequency	Rotor inertia (motor) <sup>2)</sup>	Weight <sup>3)</sup>
$n_N$ rpm		$M_0$ Nm	$I_0$ A	$M_{0,max}$ Nm	$I_{0,max}$ A	$P_N$ kW	$M_N$ Nm	$I_N$ A	$k_{E/cold}$ V/1000r/min	$f_N$ Hz	J kgcm <sup>2</sup>	m kg
2000	DSD2-056SO64O-20-54	10	5	25	13.7	1.97	9.4	4.7	134	133.3	3.6	10.9
	DSD2-056MO64O-20-54	15	7.1	41	21	3	14	6.5	144	133.3	5.1	13.3
	DSD2-056LO64O-20-54	20	9.1	57	28.9	3.8	18	8.3	146	133.3	6.6	15.8
3000	DSD2-056SO64O-30-54	10	6.9	25	19.1	2.9	9.1	6.3	96.2	200	3.6	10.9
	DSD2-056MO64O-30-54	15	10.2	41	30.3	4.3	14	9	100	200	5.1	13.3
	DSD2-056LO64O-30-54	20	13.2	57	42	5.3	17	11.3	100	200	6.6	15.8
4500	DSD2-056SO64O-45-54	10	10.2	25	28.3	4	8.5	8.8	65	300	3.6	10.9
	DSD2-056MO64O-45-54	15	15.2	41	44.9	5.9	13	12.4	67.4	300	5.1	13.3
	DSD2-056LO64O-45-54	20	18.6	56	59	7	15	14.1	71.2	300	6.6	15.8
6000 <sup>4)</sup>	DSD2-056SO64O-60-54	10	13.1	25	36.1	5	8	10.6	50.9	400	3.6	10.9
	DSD2-056MO64O-60-54	15	19.5	41	58	7.2	11	14.7	52.3	400	5.1	13.3
	DSD2-056LO64O-60-54	20	24	56	77	7.8	12	15.5	55	400	6.6	15.8

<sup>1)</sup> Coil overtemperature  $\Delta T < 105K$ ; direct flange mounting (mounting plate 450 mm x 400 mm x 30 mm)

<sup>2)</sup> Rotor moment of inertia with PE brake: +2.9 kgcm<sup>2</sup>

<sup>3)</sup> Weight with PE brake: +2.0 kg

<sup>4)</sup> in combination with Heidenhain absolute signal encoders available on request

**DSD2-056..64W-.. (water cooled)**

3 AC 400 V mains voltage for converters with unregulated supply

Rated speed	Motor type	Stand-still torque <sup>1)</sup>	Stand-still current <sup>1)</sup>	max. static torque	Max. static current	Rated out-put <sup>1)</sup>	Rated torque <sup>1)</sup>	Rated current <sup>1)</sup>	Voltage constant	Rated frequency	Rotor inertia (motor) <sup>2)</sup>	Weight <sup>3)</sup>
$n_N$		$M_0$	$I_0$	$M_{0,max}$	$I_{0,max}$	$P_N$	$M_N$	$I_N$	$k_{E/cold}$	$f_N$	$J$	$m$
rpm		Nm	A	Nm	A	kW	Nm	A	V/10001/min	Hz	kgcm <sup>2</sup>	kg
2000	DSD2-056SO64W-20-54	14	7.9	25	15.8	2.8	13	7.6	117	133.3	3.6	9.9
	DSD2-056MO64W-20-54	22	12.1	41	24.8	4.4	21	11.4	122	133.3	5.1	13.1
	DSD2-056LO64W-20-54	30	15.9	57	33.4	5.9	28	14.8	126	133.3	6.6	16.3
3000	DSD2-056SO64W-30-54	14	11.2	25	22.2	4	13	10.4	82.7	200.0	3.6	9.9
	DSD2-056MO64W-30-54	22	17.4	41	35.6	6.4	20	15.8	84.9	200.0	5.1	13.1
	DSD2-056LO64W-30-54	30	22.9	57	48.2	8.3	26	20.2	87.4	200.0	6.6	16.3
4500	DSD2-056SO64W-45-54	14	15.9	25	31.7	5.8	12	14.4	58	300.0	3.6	9.9
	DSD2-056MO64W-45-54	22	24.4	41	50	8.8	19	20.5	60.4	300.0	5.1	13.1
	DSD2-056LO64W-45-54	30	32.6	56	68	11	23	25.2	61.5	300.0	6.6	16.3
6000	DSD2-056SO64W-60-54	14	21.1	25	42	7.5	12	18.3	43.8	400.0	3.6	9.9
	DSD2-056MO64W-60-54	22	31.8	41	65	11	17	24.1	46.5	400.0	5.1	13.1
	DSD2-056LO64W-60-54	30	39.9	56	84	12	19	25.5	50.2	400.0	6.6	16.3

<sup>1)</sup> Coil overtemperature  $\Delta T < 105K$ ; direct flange mounting (mounting plate 450 mm x 400 mm x 30 mm)

<sup>2)</sup> Rotor moment of inertia with PE brake: +2.9 kgcm<sup>2</sup>
<sup>3)</sup> Weight with PE brake: +2.0 kg

## 2.5. DSD2-071

### DSD2-071..64U... (without fan)

3 AC 400 V mains voltage for converters with unregulated supply

Rated speed	Motor type	Stand-still torque <sup>1)</sup>	Stand-still current <sup>1)</sup>	max. static torque	Max. static current	Rated output <sup>1)</sup>	Rated torque <sup>1)</sup>	Rated current <sup>1)</sup>	Voltage constant	Rated frequency	Rotor inertia (motor) <sup>2)</sup>	Weight <sup>3)</sup>
$n_N$ rpm		$M_0$ Nm	$I_0$ A	$M_{0,max}$ Nm	$I_{0,max}$ A	$P_N$ kW	$M_N$ Nm	$I_N$ A	$k_{E/cold}$ V/1000r/min	$f_N$ Hz	J kgcm <sup>2</sup>	m kg
2000	DSD2-071SO64U-20-54	17	7.8	53	28.3	3	14	6.7	143	133.3	11.7	15.8
	DSD2-071MO64U-20-54	22	10.2	79	41.3	3.8	18	8.4	146	133.3	15.3	20.0
	DSD2-071LO64U-20-54	26	11.7	105	54	4.2	20	9.1	149	133.3	18.9	24.1
3000	DSD2-071SO64U-30-54	17	11.4	53	41.3	4.1	13	9	97.8	200	11.7	15.8
	DSD2-071MO64U-30-54	22	14.7	79	60	5.1	16	10.9	101	200	15.3	20.0
	DSD2-071LO64U-30-54	26	17.1	105	79	5.4	17	11.3	102	200	18.9	24.1
4500	DSD2-071SO64U-45-54	17	17.1	53	62	5.3	11	11.6	65.2	300	11.7	15.8
	DSD2-071MO64U-45-54	22	21.4	79	87	6.2	13	13	69	300	15.3	20.0
	DSD2-071LO64U-45-54	26	25.1	105	115	5.9	13	12.4	69.6	300	18.9	24.1
6000 <sup>4)</sup>	DSD2-071SO64U-60-54	17	22.3	53	81	5.8	9.2	12.6	50.2	400	11.7	15.8
	DSD2-071MO64U-60-54	22	28.3	79	115	6.3	10	13.3	52.2	400	15.3	20.0
	DSD2-071LO64U-60-54	26	31.9	105	147	5.1	8.1	10.5	54.7	400	18.9	24.1

### DSD2-071..64O... (with fan)

3 AC 400 V mains voltage for converters with unregulated supply

Rated speed	Motor type	Stand-still torque <sup>1)</sup>	Stand-still current <sup>1)</sup>	max. static torque	Max. static current	Rated output <sup>1)</sup>	Rated torque <sup>1)</sup>	Rated current <sup>1)</sup>	Voltage constant	Rated frequency	Rotor inertia (motor) <sup>2)</sup>	Weight <sup>3)</sup>
$n_N$ rpm		$M_0$ Nm	$I_0$ A	$M_{0,max}$ Nm	$I_{0,max}$ A	$P_N$ kW	$M_N$ Nm	$I_N$ A	$k_{E/cold}$ V/1000r/min	$f_N$ Hz	J kgcm <sup>2</sup>	m kg
2000	DSD2-071SO64O-20-54	24	11.2	53	28.3	4.7	22	10.5	143	133.3	11.7	18.6
	DSD2-071MO64O-20-54	34	15.7	79	41.3	6.6	31	14.3	146	133.3	15.3	22.6
	DSD2-071LO64O-20-54	44	19.6	105	54	8.1	39	17.5	149	133.3	18.9	26.9
3000	DSD2-071SO64O-30-54	24	16.4	53	41.3	6.8	22	14.8	97.8	200	11.7	18.6
	DSD2-071MO64O-30-54	34	22.6	79	60	9.4	30	19.7	101	200	15.3	22.6
	DSD2-071LO64O-30-54	44	28.7	105	79	11	36	24	102	200	18.9	26.9
4500	DSD2-071SO64O-45-54	24	24.6	53	62	9.7	21	21	65.2	300	11.7	18.6
	DSD2-071MO64O-45-54	34	33	79	87	13	28	26.7	69	300	15.3	22.6
	DSD2-071LO64O-45-54	44	42	105	115	15	32	31.3	69.6	300	18.9	26.9
6000 <sup>4)</sup>	DSD2-071SO64O-60-54	24	32	53	81	12	19	26	50.2	400	11.7	18.6
	DSD2-071MO64O-60-54	34	43.6	79	115	16	25	32.6	52.2	400	15.3	22.6
	DSD2-071LO64O-60-54	44	53	105	147	18	28	34.6	54.7	400	18.9	26.9

<sup>1)</sup> Coil overtemperature  $\Delta T < 105K$ ; direct flange mounting (mounting plate 450 mm x 400 mm x 30 mm)

<sup>2)</sup> Rotor moment of inertia with PE brake: +7.9 kgcm<sup>2</sup>

<sup>3)</sup> Weight with PE brake: +3.0 kg

<sup>4)</sup> in combination with Heidenhain absolute signal encoders available on request

**DSD2-071..64W-.. (water cooled)**

3 AC 400 V mains voltage for converters with unregulated supply

Rated speed	Motor type	Stand-still torque <sup>1)</sup>	Stand-still current <sup>1)</sup>	max. static torque	Max. static current	Rated output <sup>1)</sup>	Rated torque <sup>1)</sup>	Rated current <sup>1)</sup>	Voltage constant	Rated frequency	Rotor inertia (motor) <sup>2)</sup>	Weight <sup>3)</sup>
$n_N$ rpm		$M_0$ Nm	$I_0$ A	$M_{0,max}$ Nm	$I_{0,max}$ A	$P_N$ kW	$M_N$ Nm	$I_N$ A	$k_{E/cold}$ V/1000r/min	$f_N$ Hz	J kgcm <sup>2</sup>	m kg
2000	DSD2-071SO64W-20-54	35	19.8	53	33.6	6.8	33	18.3	121	133.3	11.7	19
	DSD2-071MO64W-20-54	54	29.6	78	48.9	10	49	26.7	124	133.3	15.3	23
	DSD2-071LO64W-20-54	73	40.2	105	64	14	65	35.5	124	133.3	18.9	27
3000	DSD2-071SO64W-30-54	35	28.4	53	48.1	9.7	31	24.9	84.3	200	11.7	19
	DSD2-071MO64W-30-54	54	42.5	78	70	14	46	35.9	86.1	200	15.3	23
	DSD2-071LO64W-30-54	73	57	105	92	19	60	46.7	87	200	18.9	27
4500	DSD2-071SO64W-45-54	35	41.4	53	70	13	28	33	57.9	300	11.7	19
	DSD2-071MO64W-45-54	54	61	78	101	19	40	45.6	59.9	300	15.3	23
	DSD2-071LO64W-45-54	73	80	105	129	24	52	56	62.2	300	18.9	27
6000	DSD2-071SO64W-60-54	35	53	53	90	16	25	37.3	45.3	400	11.7	19
	DSD2-071MO64W-60-54	54	78	78	129	22	34	49.5	46.8	400	15.3	23
	DSD2-071LO64W-60-54	69	95	105	160	25	40	55	49.7	400	18.9	27

<sup>1)</sup> Coil overtemperature  $\Delta T < 105K$ ; direct flange mounting (mounting plate 450 mm x 400 mm x 30 mm)

<sup>2)</sup> Rotor moment of inertia with PE brake: +7.9 kgcm<sup>2</sup>
<sup>3)</sup> Weight with PE brake: +3.0 kg

## 2.6. DSD2-100

### DSD2-100..64U... (without fan)

3 AC 400 V mains voltage for converters with unregulated supply

Rated speed	Motor type	Stand-still torque <sup>1)</sup>	Stand-still current <sup>1)</sup>	max. static torque	Max. static current	Rated output <sup>1)</sup>	Rated torque <sup>1)</sup>	Rated current <sup>1)</sup>	Voltage constant <sup>1)</sup>	Rated frequency	Rotor inertia (motor) <sup>2)</sup>	Weight <sup>3)</sup>
$n_N$		$M_0$	$I_0$	$M_{0,max}$	$I_{0,max}$	$P_N$	$M_N$	$I_N$	$k_{E/cold}$	$f_N$	$J$	$m$
rpm		Nm	A	Nm	A	kW	Nm	A	V/10001/min	Hz	kgcm <sup>2</sup>	kg
1200	DSD2-100SO64U-12-54	42	11.8	105	35	4.2	33	9.4	240	80	52	36
	DSD2-100MO64U-12-54	60	16.5	160	51	5.8	46	12.8	245	80	70	46
	DSD2-100LO64U-12-54	76	20.5	210	66	7.1	57	15.3	251	80	88	56
	DSD2-100BO64U-12-54	90	24.4	265	83	8.1	65	17.6	250	80	105	66
2000	DSD2-100SO64U-20-54	42	19.1	105	57	5.9	28	13	148	133.3	52	36
	DSD2-100MO64U-20-54	60	26.2	160	81	7.9	38	16.7	154	133.3	70	46
	DSD2-100LO64U-20-54	76	33.2	210	108	9.4	45	19.8	155	133.3	88	56
	DSD2-100BO64U-20-54	90	39.1	265	133	10	49	21.5	156	133.3	105	66
3000	DSD2-100SO64U-30-54	42	26.8	105	80	6.9	22	14.3	105	200	52	36
	DSD2-100MO64U-30-54	60	37.8	160	117	8.8	28	18.1	107	200	70	46
	DSD2-100LO64U-30-54	76	47.2	210	155	9.8	31	19.8	109	200	88	56
	DSD2-100BO64U-30-54	90	56	265	190	9.8	31	19.8	109	200	105	66
4500	DSD2-100SO64U-45-54	42	39.4	105	117	6.5	14	13.5	71.7	300	52	36
	DSD2-100MO64U-45-54	60	56	160	175	7.2	15	15	72.3	300	70	46
	DSD2-100LO64U-45-54	76	68	210	220	6.3	13	12.8	75.2	300	88	56
	DSD2-100BO64U-45-54	90	84	265	285	3.8	8.1	8.5	72.9	300	105	66
6000 <sup>4)</sup>	DSD2-100SO64U-60-54	42	54.8	105	155	4.2	6.7	9.2	54.8	400	52	36
	DSD2-100MO64U-60-54	60	71	160	220	2.8	4.5	6.5	56.6	400	70	46
	DSD2-100LO64U-60-54 <sup>5)</sup>	76	94	210	305	1.87	3.2	5.3	54.3	400	88	56

<sup>1)</sup> Coil overtemperature  $\Delta T < 105K$ ; direct flange mounting (mounting plate 450 mm x 400 mm x 30 mm)

<sup>2)</sup> Rotor moment of inertia with PE brake: +17.6 kgcm<sup>2</sup>

<sup>3)</sup> Weight with PE brake: +6.0 kg

<sup>4)</sup> in combination with Heidenhain absolute signal encoders available on request

<sup>5)</sup> The technical details refer to a nominal speed of 5,500 min<sup>-1</sup>

**DSD2-100..64O.. (with fan)**

3 AC 400 V mains voltage for converters with unregulated supply

Rated speed	Motor type	Stand-still torque <sup>1)</sup>	Stand-still current <sup>1)</sup>	max. static torque	Max. static current	Rated out-put <sup>1)</sup>	Rated torque <sup>1)</sup>	Rated current <sup>1)</sup>	Voltage constant	Rated frequency	Rotor inertia (motor) <sup>2)</sup>	Weight <sup>3)</sup>
n <sub>N</sub>		M <sub>0</sub>	I <sub>0</sub>	M <sub>0,max</sub>	I <sub>0,max</sub>	P <sub>N</sub>	M <sub>N</sub>	I <sub>N</sub>	k <sub>E/cold</sub>	f <sub>N</sub>	J	m
rpm		Nm	A	Nm	A	kW	Nm	A	V/10001/min	Hz	kgcm <sup>2</sup>	kg
1200	DSD2-100SO64O-12-54	55	15.3	110	35	6	48	13.3	240	80	52	41
	DSD2-100MO64O-12-54	77	21.2	160	51	8.5	67	18.6	245	80	70	51
	DSD2-100LO64O-12-54	97	26.1	210	66	11	85	23	251	80	88	61
	DSD2-100BO64O-12-54	110	30.9	260	83	12	99	27.4	250	80	105	71
2000	DSD2-100SO64O-20-54	55	24.9	110	57	9	43	19.6	148	133.3	52	41
	DSD2-100MO64O-20-54	77	33.8	160	81	13	61	26.8	154	133.3	70	51
	DSD2-100LO64O-20-54	97	42.4	210	108	16	77	33.9	155	133.3	88	61
	DSD2-100BO64O-20-54	110	49.4	260	133	19	90	39.9	156	133.3	105	71
3000	DSD2-100SO64O-30-54	55	34.8	110	80	12	37	23.9	105	200	52	41
	DSD2-100MO64O-30-54	77	48.7	160	117	17	53	33.7	107	200	70	51
	DSD2-100LO64O-30-54	97	60	210	155	21	67	42.2	109	200	88	61
	DSD2-100BO64O-30-54	110	71	260	190	25	79	49.9	109	200	105	71
4500	DSD2-100SO64O-45-54	55	51	110	117	14	29	27.6	71.7	300	52	41
	DSD2-100MO64O-45-54	77	72	160	175	19	41	39	72.3	300	70	51
	DSD2-100LO64O-45-54	97	87	210	220	25	52	47.4	75.2	300	88	61
	DSD2-100BO64O-45-54	100	95	260	285	29	61	58	72.9	300	105	71
6000 <sup>4)</sup>	DSD2-100SO64O-60-54	55	67	110	155	13	21	26.6	54.8	400	52	41
	DSD2-100MO64O-60-54	77	92	160	220	18	29	36.2	56.6	400	70	51
	DSD2-100LO64O-60-54	76	95	210	305	18	29	37	54.3	400	88	61
	DSD2-100BO64O-60-54	79	95	260	365	24	38	46.7	57.3	400	105	71

<sup>1)</sup> Coil overtemperature  $\Delta T < 105K$ ; direct flange mounting (mounting plate 450 mm x 400 mm x 30 mm)

<sup>2)</sup> Rotor moment of inertia with PE brake: +17.6 kgcm<sup>2</sup>

<sup>3)</sup> Weight with PE brake: +6.0 kg

<sup>4)</sup> in combination with Heidenhain absolute signal encoders available on request



**DSD2-100..64W-.. (water cooled)**

3 AC 400 V mains voltage for converters with unregulated supply

Rated speed	Motor type	Stand-still torque <sup>1)</sup>	Stand-still current <sup>1)</sup>	max. static torque	Max. static current	Rated out-put <sup>1)</sup>	Rated torque <sup>1)</sup>	Rated current <sup>1)</sup>	Voltage constant	Rated frequency	Rotor inertia (motor) <sup>2)</sup>	Weight <sup>3)</sup>
n <sub>N</sub>		M <sub>0</sub>	I <sub>0</sub>	M <sub>0,max</sub>	I <sub>0,max</sub>	P <sub>N</sub>	M <sub>N</sub>	I <sub>N</sub>	k <sub>E/cold</sub>	f <sub>N</sub>	J	m
rpm		Nm	A	Nm	A	kW	Nm	A	V/10001/min	Hz	kgcm <sup>2</sup>	kg
1200	DSD2-100SO64W-12-54	89	32.2	110	44.3	10	82	29.1	189	80	52	41
	DSD2-100MO64W-12-54	130	46.6	165	65	15	120	42.8	191	80	70	51
	DSD2-100LO64W-12-54	170	58	220	85	20	160	55	196	80	88	62
	DSD2-100BO64W-12-54	210	71	280	105	25	205	67	197	80	105	72
2000	DSD2-100SO64W-20-54	89	52	110	71	16	77	43.3	118	133.3	52	41
	DSD2-100MO64W-20-54	130	75	165	105	23	110	63	119	133.3	70	51
	DSD2-100LO64W-20-54	170	94	220	138	31	150	82	121	133.3	88	62
	DSD2-100BO64W-20-54	185	95	280	165	37	180	93	125	133.3	105	72
2500	DSD2-100SO64W-25-54	89	63	110	87	19	73	49.8	96.6	166.6	52	41
	DSD2-100MO64W-25-54	130	89	165	125	27	105	70	100	166.6	70	51
	DSD2-100LO64W-25-54	145	95	220	165	35	135	88	99.9	166.6	88	62
	DSD2-100BO64W-25-54	160	95	280	190	42	160	94	109	166.6	105	72
3000	DSD2-100SO64W-30-54	89	72	110	100	22	69	54	84	200	52	41
	DSD2-100MO64W-30-54	120	95	165	148	31	99	78	84.5	200	70	51
	DSD2-100LO64W-30-54	130	95	210	180	37	120	88	91.9	200	88	62
	DSD2-100BO64W-30-54	130	95	280	235	41	130	95	88.2	200	105	72
4500	DSD2-100SO64W-45-54	86	95	110	138	26	55	60	60.9	300	52	41
	DSD2-100MO64W-45-54	89	95	165	200	32	69	73	62.6	300	70	51
	DSD2-100LO64W-45-54	98	95	220	250	38	81	79	66.6	300	88	62
6000	DSD2-100SO64W-60-54	73	95	110	165	25	40	52	50.4	400	52	41
	DSD2-100MO64W-60-54	67	95	165	265	42	67	95	47	400	70	51

<sup>1)</sup> Coil overtemperature  $\Delta T < 105K$ ; direct flange mounting (mounting plate 450 mm x 400 mm x 30 mm)

<sup>2)</sup> Rotor moment of inertia with PE brake: +17.6 kgcm<sup>2</sup>

<sup>3)</sup> Weight with PE brake: +6.0 kg

**2.7. DSD2-132**

**DSD2-132..54A(R)-.. (surface cooled)\***

3 AC 400 V mains voltage for converters with unregulated supply

Rated Motor type speed	Stand-still torque <sup>1)</sup>	Stand-still current <sup>1)</sup>	max. static torque	Max. static current	Rated output <sup>1)</sup>	Rated torque <sup>1)</sup>	Rated current	Voltage constant	Rated frequency	Rotor inertia (motor)	Weight <sup>3)</sup>	Terminal box page 89	
n <sub>N</sub>	M <sub>0</sub>	I <sub>0</sub>	M <sub>0,max</sub>	I <sub>0,max</sub>	P <sub>N</sub>	M <sub>N</sub>	I <sub>N</sub>	k <sub>E/cold</sub>	f <sub>N</sub>	J	m		
rpm	Nm	A	Nm	A	kW	Nm	A	V/10001/min	Hz	kgcm <sup>2</sup>	kg		
1000	DSD2-132KO54.-10-5	175	37.1	360	89	16	150	32.3	342	66.6	0.029	127	20
	DSD2-132MO54.-10-5	230	49	480	118	21	205	43.3	344	66.6	0.038	142	22
	DSD2-132LO54.-10-5	290	62	605	149	27	260	55	341	66.6	0.046	157	22
	DSD2-132BO54.-10-5	345	72	725	175	33	315	66	349	66.6	0.055	172	22
	DSD2-132XO54.-10-5	405	83	850	200	39	375	76	353	66.6	0.063	187	22
	DSD2-132YO54.-10-5	460	98	975	240	45	430	91	343	66.6	0.072	203	22
	DSD2-132YZ54.-10-5	490	104	1030	255	48	460	97	343	66.6	0.076	210	24
1500	DSD2-132KO54.-15-5	175	54	360	130	22	140	43.3	235	100	0.029	127	22
	DSD2-132MO54.-15-5	230	73	480	175	30	190	59	232	100	0.038	142	22
	DSD2-132LO54.-15-5	290	88	605	210	38	240	73	240	100	0.046	157	22
	DSD2-132BO54.-15-5	345	111	725	270	46	295	94	227	100	0.055	172	22
	DSD2-132XO54.-15-5	405	128	850	310	55	350	111	229	100	0.063	187	24
	DSD2-132YO54.-15-5	460	139	975	340	64	405	122	241	100	0.072	203	24
	DSD2-132YZ54.-15-5	490	150	1030	370	68	435	134	234	100	0.076	210	24
2000	DSD2-132KO54.-20-5	175	70	360	170	26	125	51	182	133.3	0.029	127	22
	DSD2-132MO54.-20-5	230	93	480	225	36	175	69	182	133.3	0.038	142	22
	DSD2-132LO54.-20-5	290	120	605	290	46	220	91	176	133.3	0.046	157	22
	DSD2-132BO54.-20-5	345	139	725	340	57	270	108	181	133.3	0.055	172	24
	DSD2-132XO54.-20-5	405	165	850	405	67	320	132	175	133.3	0.063	187	26
	DSD2-132YO54.-20-5	460	185	970	455	78	375	150	180	133.3	0.072	203	26
	DSD2-132YZ54.-20-5	490	210	1030	510	84	400	170	169	133.3	0.076	210	26
2500	DSD2-132KO54.-25-5	175	84	360	200	30	115	55	151	166.6	0.029	127	22
	DSD2-132MO54.-25-5	230	112	480	270	40	155	75	151	166.6	0.038	142	22
	DSD2-132LO54.-25-5	290	140	605	340	52	195	95	151	166.6	0.046	157	24
	DSD2-132BO54.-25-5	345	170	725	405	63	240	116	150	166.6	0.055	172	26
	DSD2-132XO54.-25-5	405	210	850	510	75	290	149	140	166.6	0.063	187	26
	DSD2-132YO54.-25-5	460	240	970	585	88	335	175	139	166.6	0.072	203	26
	DSD2-132YZ54.-25-5	490	240	1030	585	94	360	175	148	166.6	0.076	210	26
3000	DSD2-132KO54.-30-5	175	99	360	240	31	99	56	129	200	0.029	127	22
	DSD2-132MO54.-30-5	230	140	480	340	42	135	82	120	200	0.038	142	24
	DSD2-132LO54.-30-5	290	170	600	405	54	170	100	125	200	0.046	157	26
	DSD2-132BO54.-30-5	345	210	725	510	66	210	127	120	200	0.055	172	26
	DSD2-132XO54.-30-5	405	240	850	585	78	250	147	122	200	0.063	187	26

<sup>1)</sup> Coil temperature  $\Delta T < 105K$ ; direct flange mounting (mounting plate 450 mm x 400 mm x 30 mm)

<sup>2)</sup> Rotor moment of inertia with PE brake: +0,004kgm<sup>2</sup>

<sup>3)</sup> Weight with PE brake: +13 kg

\* The integrated axial fan is available on request

DSD2-132..54W-.. (water cooled)

3 AC 400 V mains voltage for converters with unregulated supply

Rated Motor type speed	Stand-still torque	Stand-still current	max. static torque	Max. static current	Rated output	Rated torque	Rated current	Voltage constant	Rated frequency	Rotor inertia (motor)	Weight	Terminal box page 89	
$n_N$	$M_0$	$I_0$	$M_{0,max}$	$I_{0,max}$	$P_N$	$M_N$	$I_N$	$k_{E/cold}$	$f_N$	$J$	$m$		
rpm	Nm	A	Nm	A	kW	Nm	A	V/10001/min	Hz	kgcm <sup>2</sup>	kg		
1000	DSD2-132KO54W-10-54	225	52	370	98	22	195	48.7	313	66.7	0.029	95	22
	DSD2-132MO54W-10-54	315	73	490	129	31	275	68	316	66.7	0.038	115	24
	DSD2-132LO54W-10-54	410	100	615	165	40	355	92	305	66.7	0.046	135	24
	DSD2-132BO54W-10-54	505	117	740	190	49	440	108	321	66.7	0.055	155	24
	DSD2-132XO54W-10-54	600	140	860	220	59	525	130	321	66.7	0.063	170	24
	DSD2-132YO54W-10-54	700	170	985	265	69	610	160	305	66.7	0.072	190	24
	DSD2-132YZ54W-10-54	750	185	1050	285	74	655	175	303	66.7	0.076	200	26
1500	DSD2-132KO54W-15-54	225	77	370	143	32	190	68	214	100	0.029	95	24
	DSD2-132MO54W-15-54	315	108	490	190	44	265	97	214	100	0.038	115	24
	DSD2-132LO54W-15-54	410	150	615	250	58	345	133	204	100	0.046	135	24
	DSD2-132BO54W-15-54	505	175	740	285	71	425	155	214	100	0.055	155	24
	DSD2-132XO54W-15-54	600	210	860	335	85	505	190	214	100	0.063	170	26
	DSD2-132YO54W-15-54	700	235	985	365	99	590	210	224	100	0.072	190	26
	DSD2-132YZ54W-15-54	750	235	1050	365	104	625	210	238	100	0.076	200	26
2000	DSD2-132KO54W-20-54	225	97	370	180	40	180	83	168	133.3	0.029	95	22
	DSD2-132MO54W-20-54	315	142	490	250	57	255	121	163	133.3	0.038	115	24
	DSD2-132LO54W-20-54	410	185	615	310	75	330	155	165	133.3	0.046	135	26
	DSD2-132BO54W-20-54	505	225	740	365	95	410	190	168	133.3	0.055	155	26
	DSD2-132XO54W-20-54	600	245	860	400	108	485	215	178	133.3	0.063	170	26
2500	DSD2-132KO54W-25-54	225	119	370	220	48	170	96	137	166.7	0.029	95	24
	DSD2-132MO54W-25-54	315	175	490	310	68	240	143	132	166.7	0.038	115	26
	DSD2-132LO54W-25-54	410	215	615	365	83	320	180	140	166.7	0.049	135	26
	DSD2-132BO54W-25-54	505	245	735	400	107	385	200	153	166.7	0.055	153	26
3000	DSD2-132KO54W-30-54	225	134	370	250	54	160	102	122	200	0.029	95	24
	DSD2-132MO54W-30-54	315	205	490	365	78	230	160	112	200	0.038	115	26
	DSD2-132LO54W-30-54	410	240	615	400	100	300	190	127	200	0.046	135	26
4000	DSD2-132KO54W-40-54	225	180	370	335	64	140	119	91.6	266.7	0.029	95	26
	DSD2-132MO54W-40-54	315	225	490	400	90	205	160	102	266.7	0.038	115	26
6000	DSD2-132KO54W-60-54	225	240	370	445	61	92	103	68.7	400	0.029	95	26

1) Coil temperature  $\Delta T < 105K$ ; direct flange mounting (mounting plate 450 mm x 400 mm x 30 mm)

2) Rotor moment of inertia with PE brake: +0,004kgm<sup>2</sup>

3) Weight with PE brake: +13 kg

## 2.8. Radial force diagrams

All bearings are designed for a service life of 20,000 h  $L_{10h}$ . The load values specified below may thereby not be exceeded. The permissible radial forces  $F_R$  are valid only for the horizontal installation of the motor without additional axial forces.

Furthermore, the specified average speeds must be adhered to to reach the grease consumption period of 20,000 h under the following conditions:

- low-vibration applications
- horizontal installation
- oscillatory bearing motion in which at least one pivot angle of 180° is performed
- Continuous bearing temperatures  $<120^\circ$  C.

Axial load on the motor shaft:

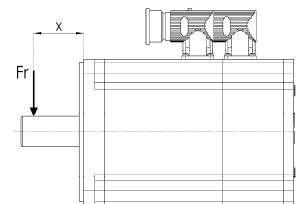
No axial forces may develop when mounting clutches, pulleys, etc. on the motor shaft!

### 2.8.1. Sample diagram

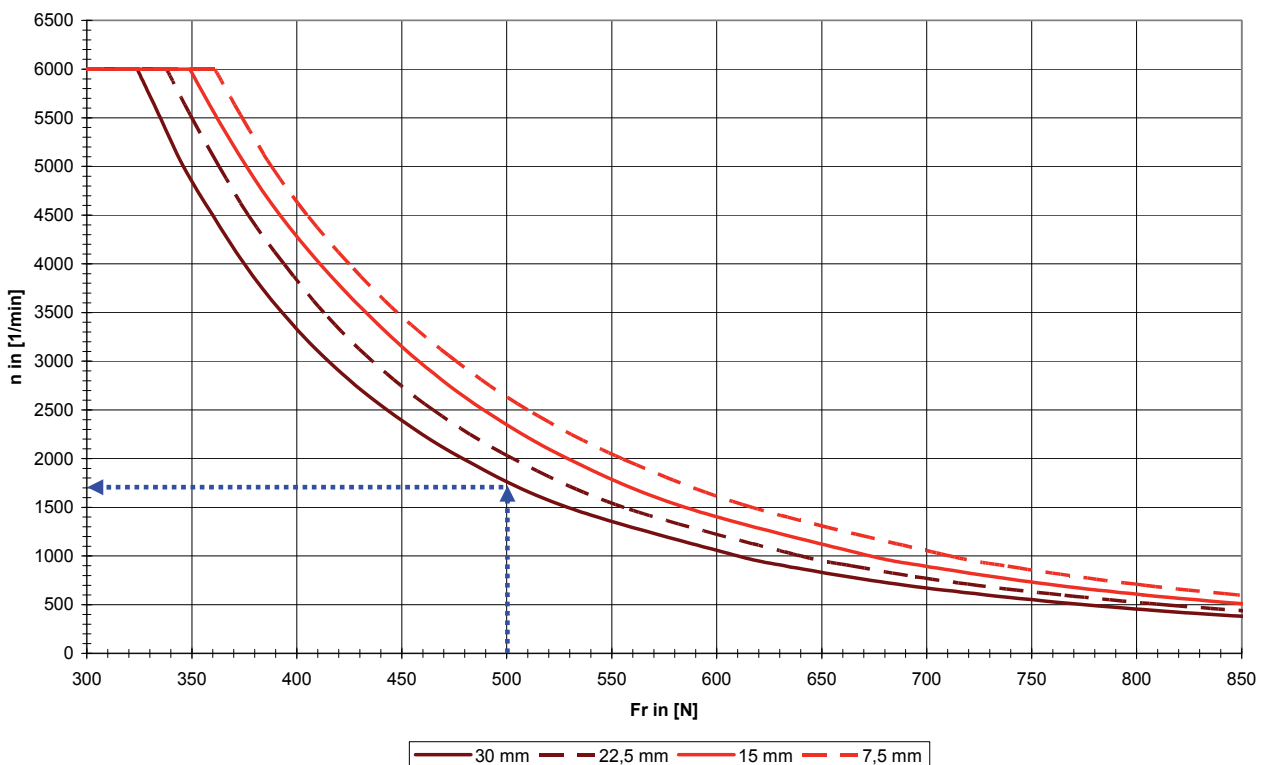
Sample diagrams:

Driving forces  $x = 30$  mm from the shaft shoulder

Bearing service life 20,000 h, shaft with parallel key groove



DSD2-045  
Kugellager / Ball bearing

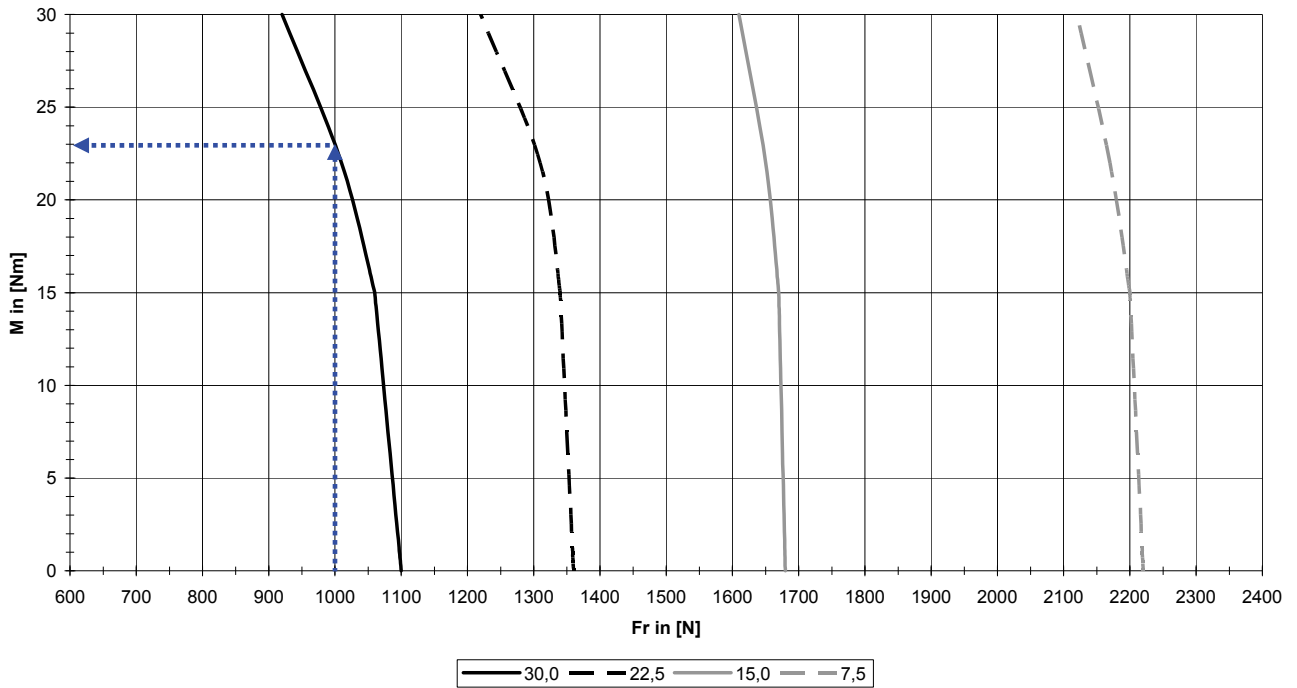


Explanation of the sample chart:

The potential maximum speed of the bearing can be calculated via radial force  $F_r$  of the application in characteristic "ball bearing".

At a radial force of 500 N with a driving force point of  $x = 30$  mm from the shaft shoulder, a maximum speed of 1750 rpm results.

DSD2-045  
glatte Welle / Shaft without key

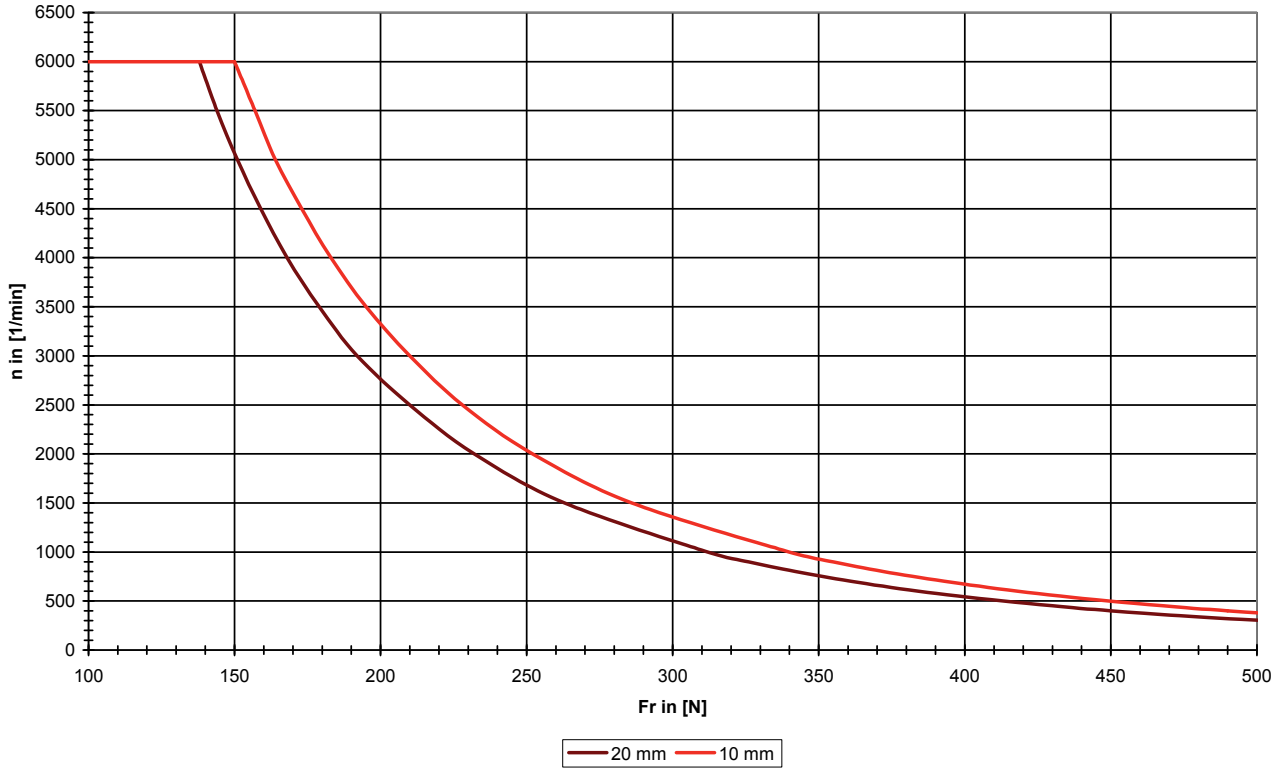


Explanation of the sample chart:

The maximum torque to be still transmitted results from the characteristic "shaft".  
At a centrifugal force of 1000 N with a driving force point of  $x = 30$  mm from the shaft shoulder, a torque to be still transmitted of 23Nm results.

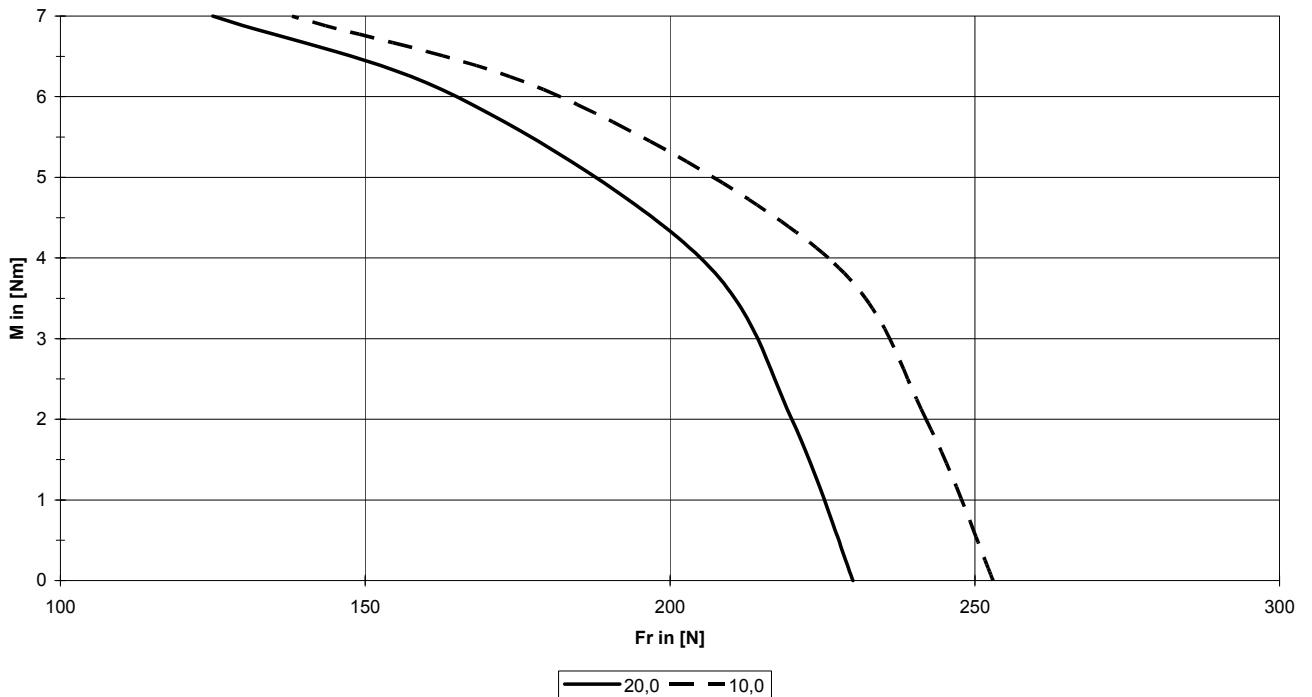
2.8.2. Diagram DSD2-028

DSD2-028  
Kugellager / Ball bearing



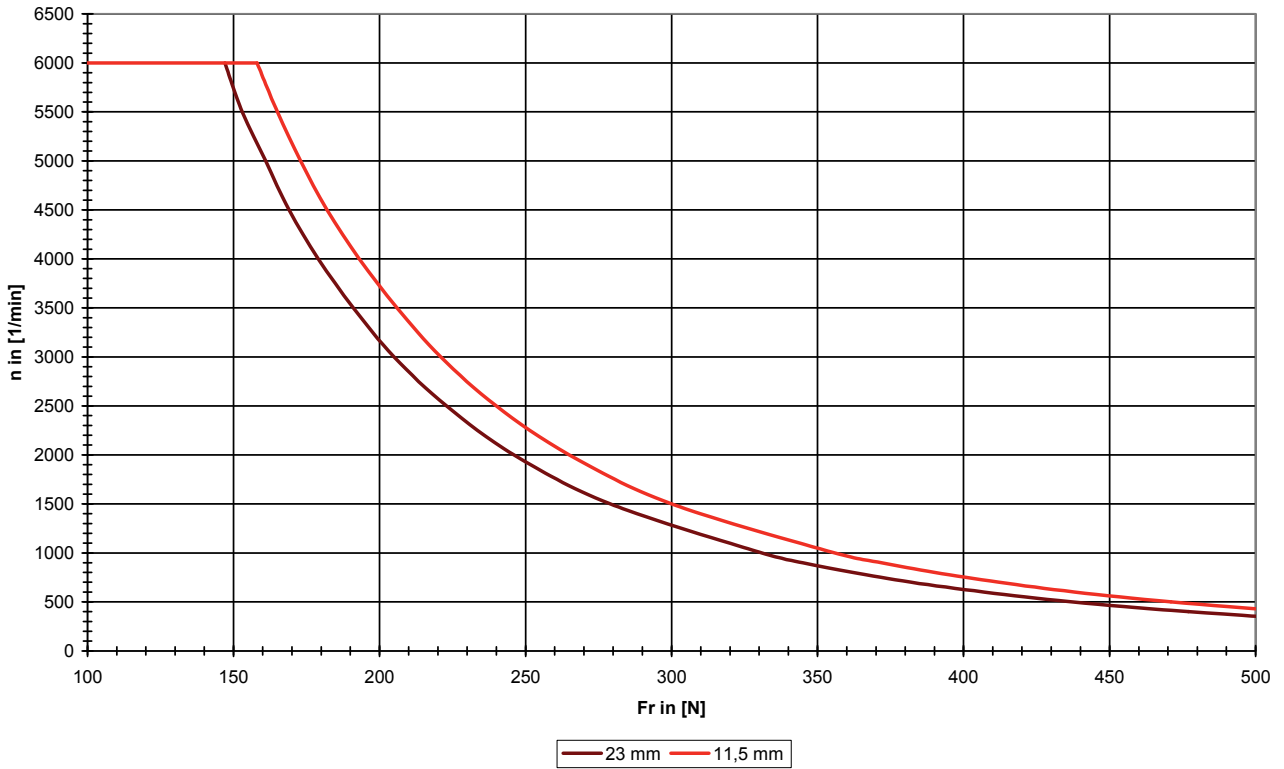
Note: 20,000h grease consumption duration at  $n_{\text{effective}} \leq 6,000$  rpm

DSD2-028  
glatte Welle / Shaft without key



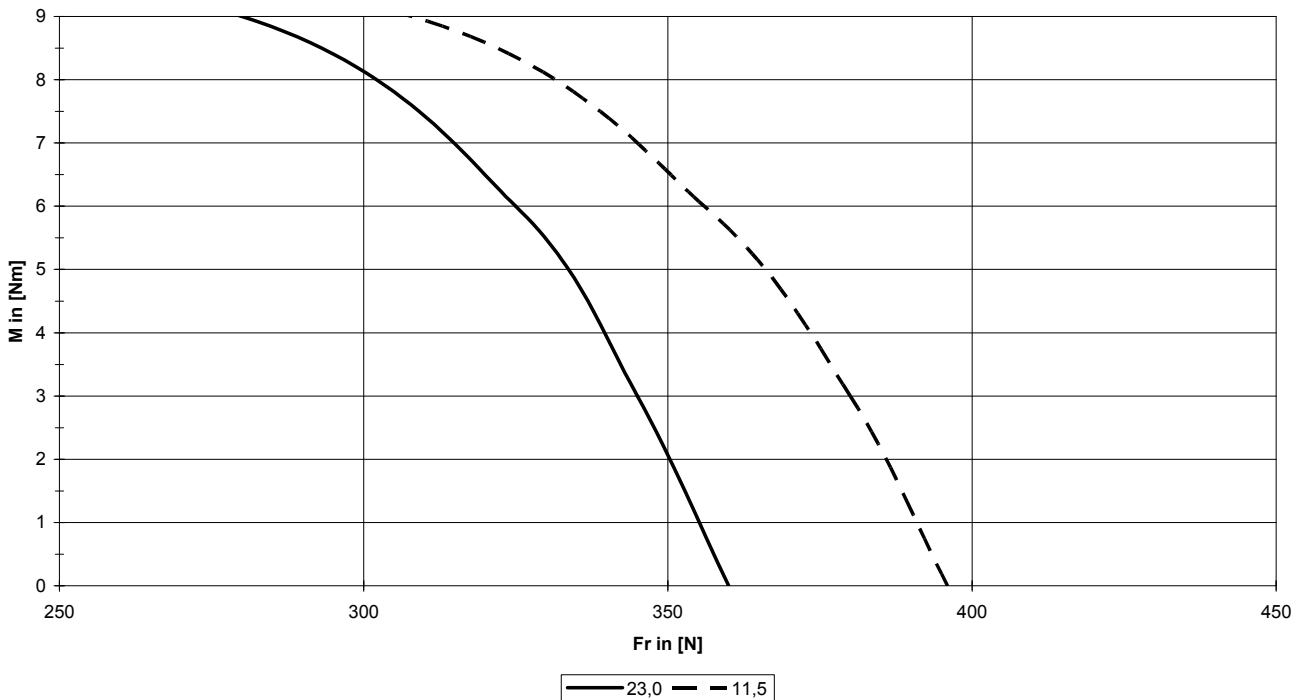
2.8.3. Diagram DSD2-036

DSD2-036  
Kugellager / Ball bearing



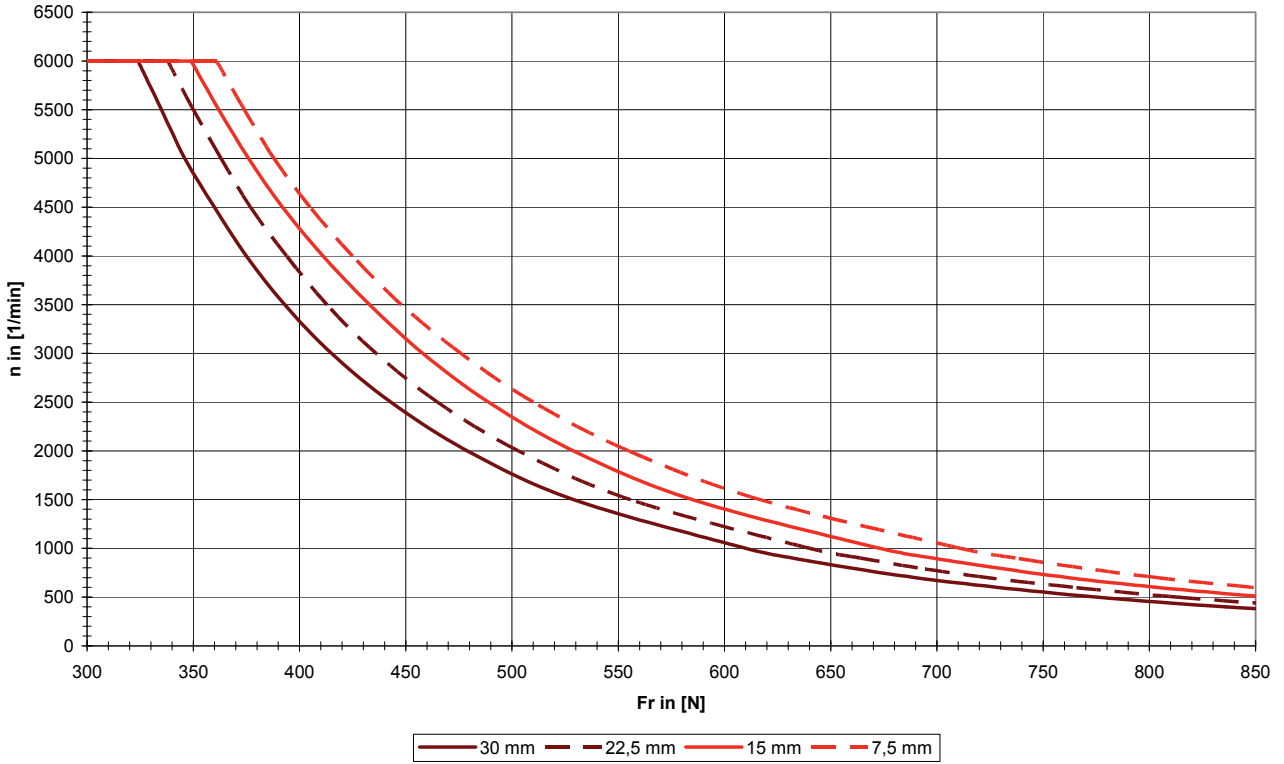
Note: 20,000h grease consumption duration at  $n_{\text{effective}} \leq 6,000$  rpm

DSD2-036  
glatte Welle / Shaft without key



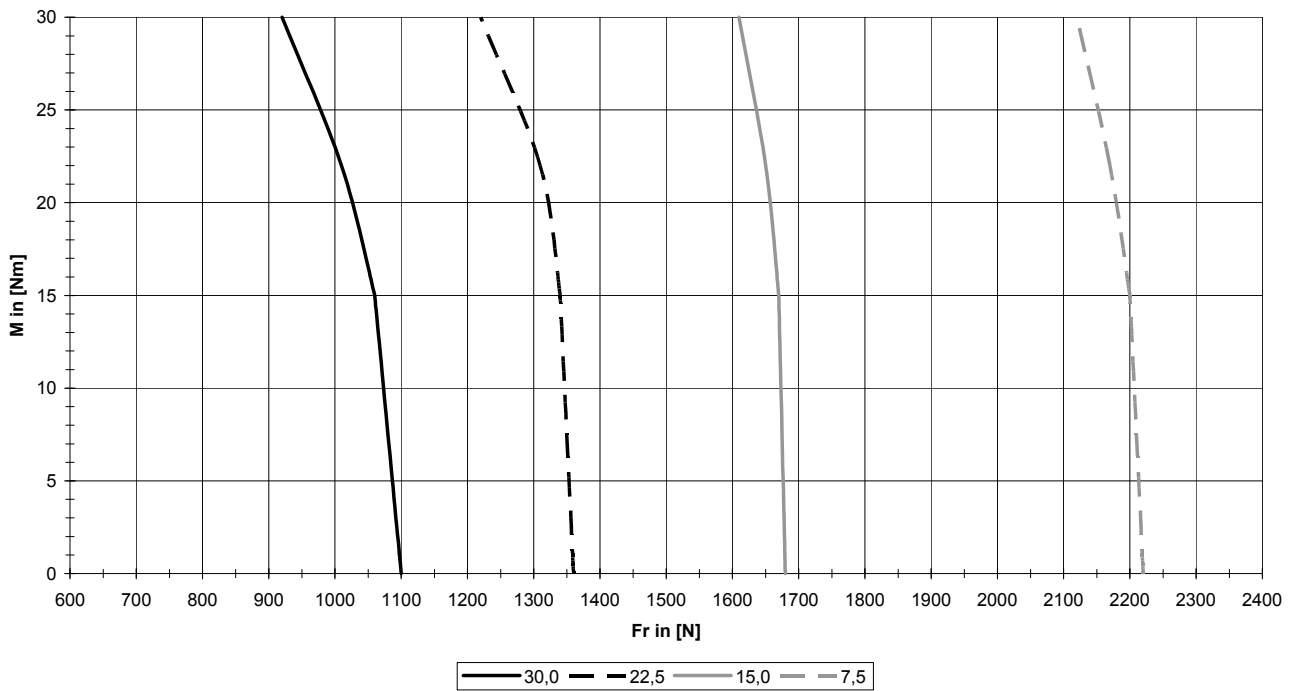
2.8.4. Diagram DSD2-045

DSD2-045  
Kugellager / Ball bearing



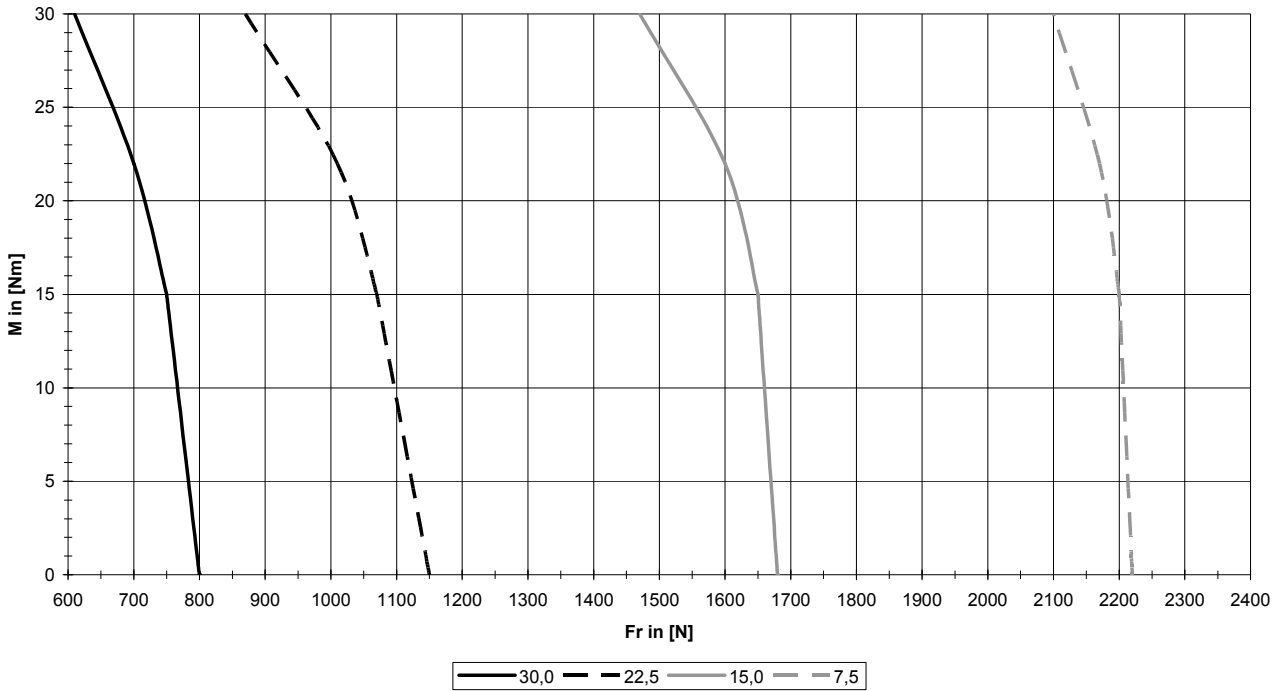
Note: 20,000h grease consumption duration at  $n_{\text{effective}} \leq 6,000$  rpm

DSD2-045  
glatte Welle / Shaft without key



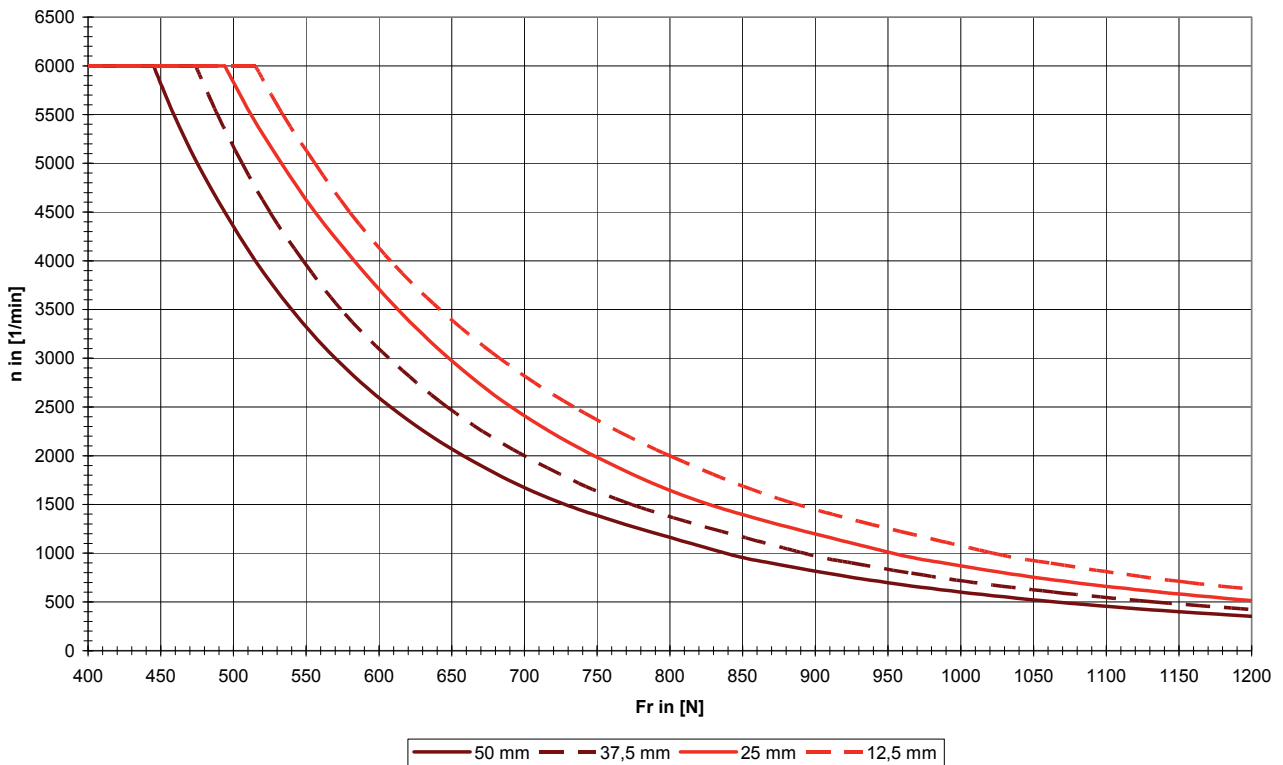


DSD2-045  
Welle mit Nut / Shaft with key



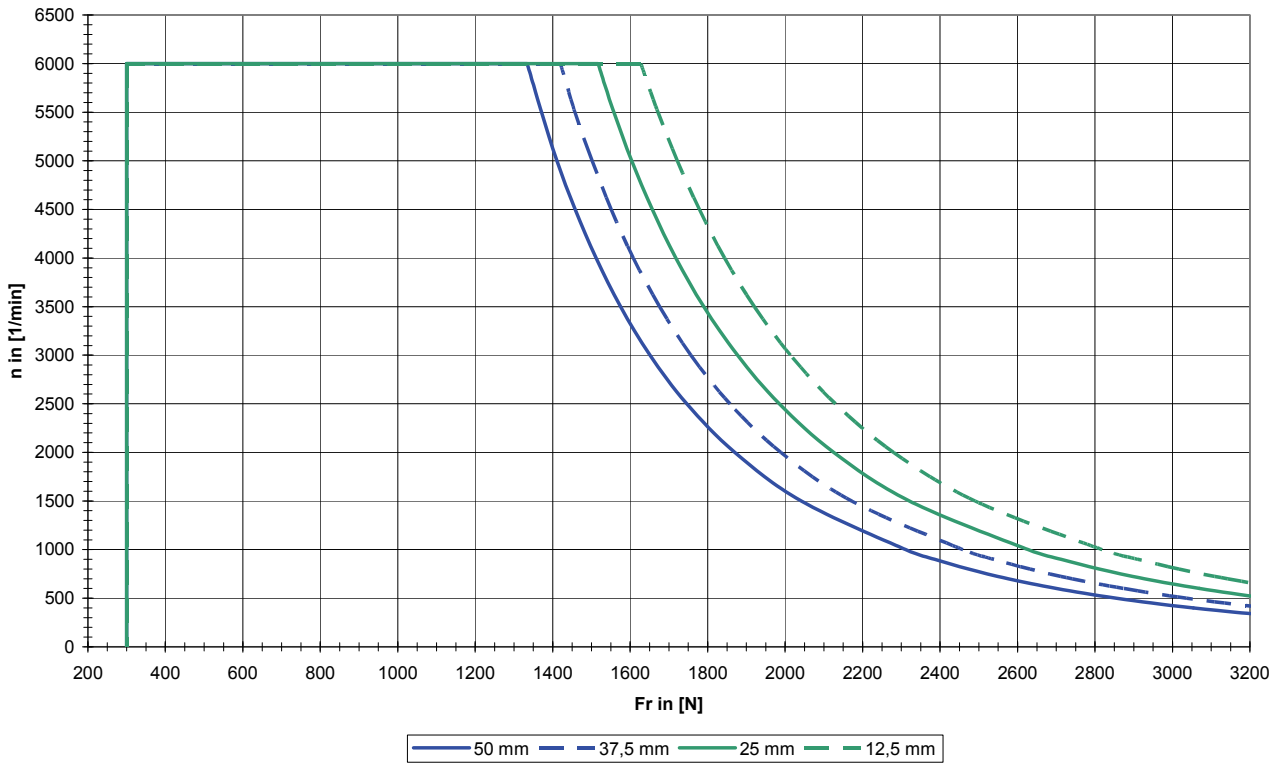
2.8.5. Diagram DSD2-056

DSD2-056  
Kugellager / Ball bearing



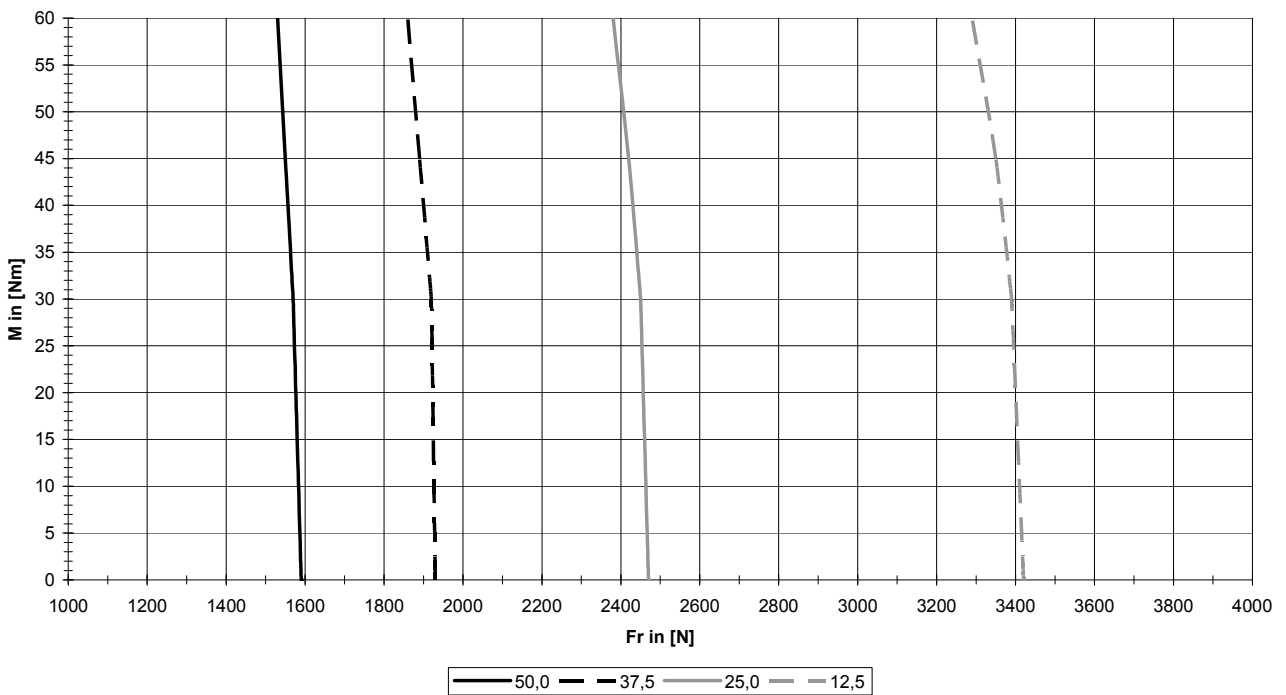
Note: 20,000h grease consumption duration at  $n_{\text{effective}} \leq 6,000$  rpm

DSD2-056  
Rollenlager / Roller bearing



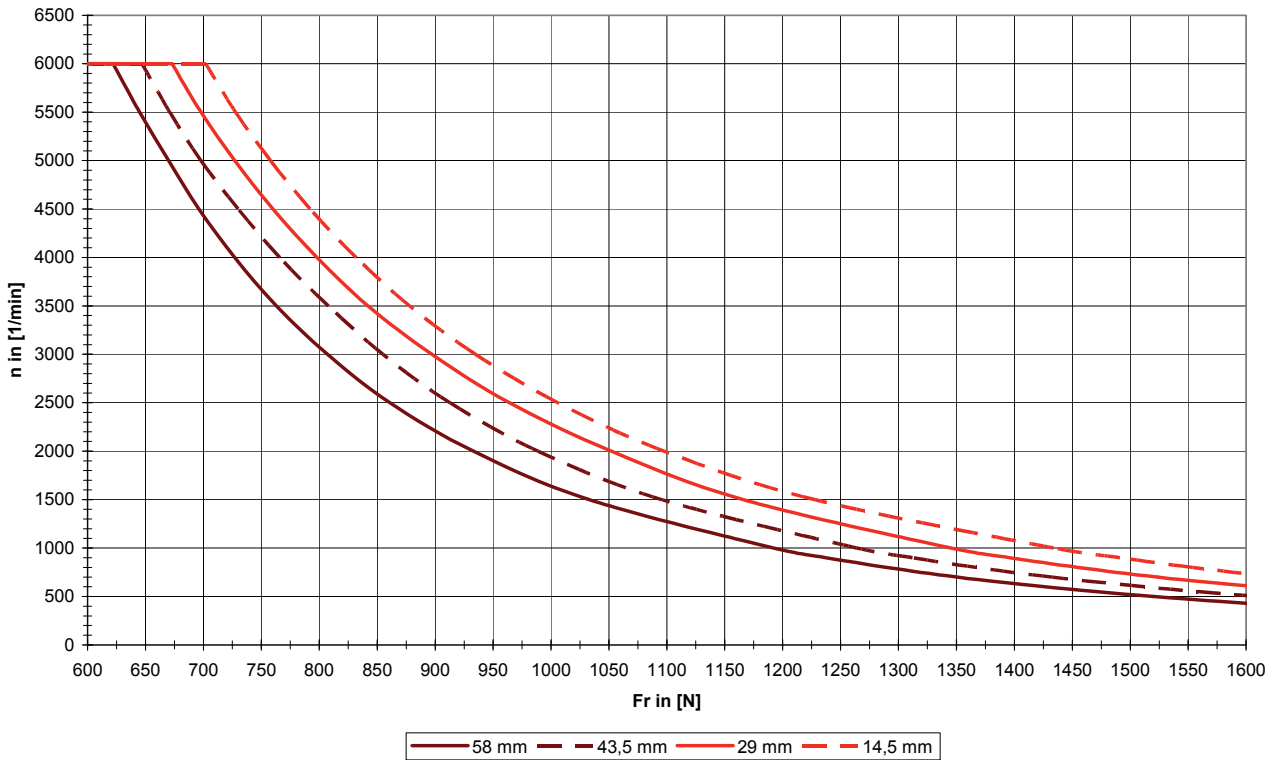
Note: 20,000h grease consumption duration at  $n_{\text{effective}} \leq 2,000$  rpm

DSD2-056  
Welle / Shaft



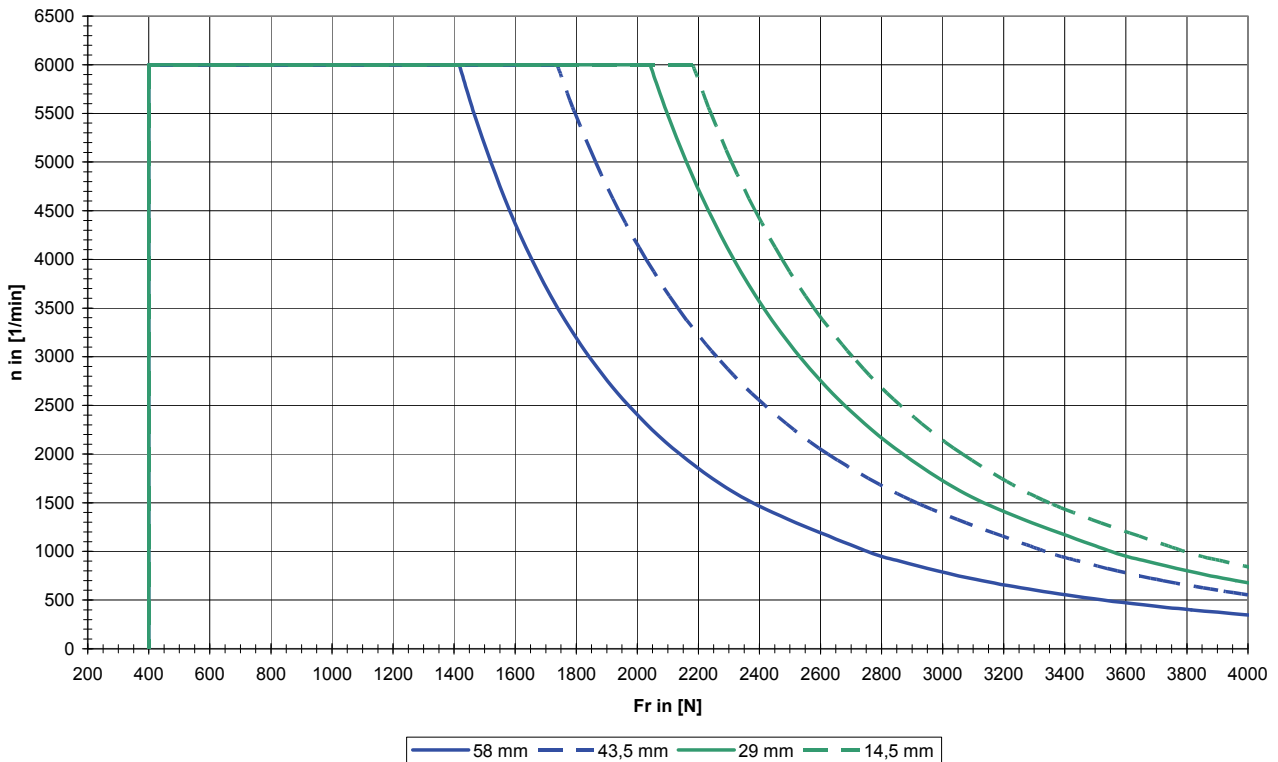
2.8.6. Diagram DSD2-071

DSD2-071  
Kugellager / Ball bearing



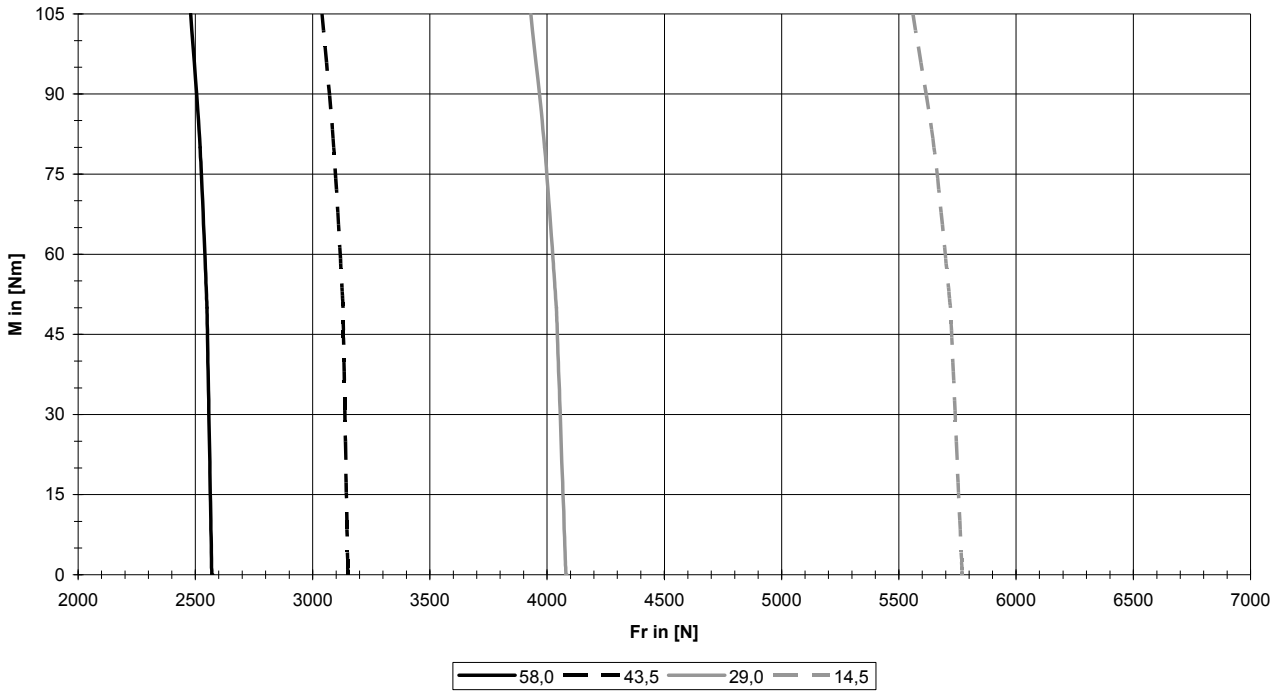
Note: 20,000h grease consumption duration at  $n_{\text{effective}} \leq 6,000$  rpm

DSD2-071  
Rollenlager / Roller bearing



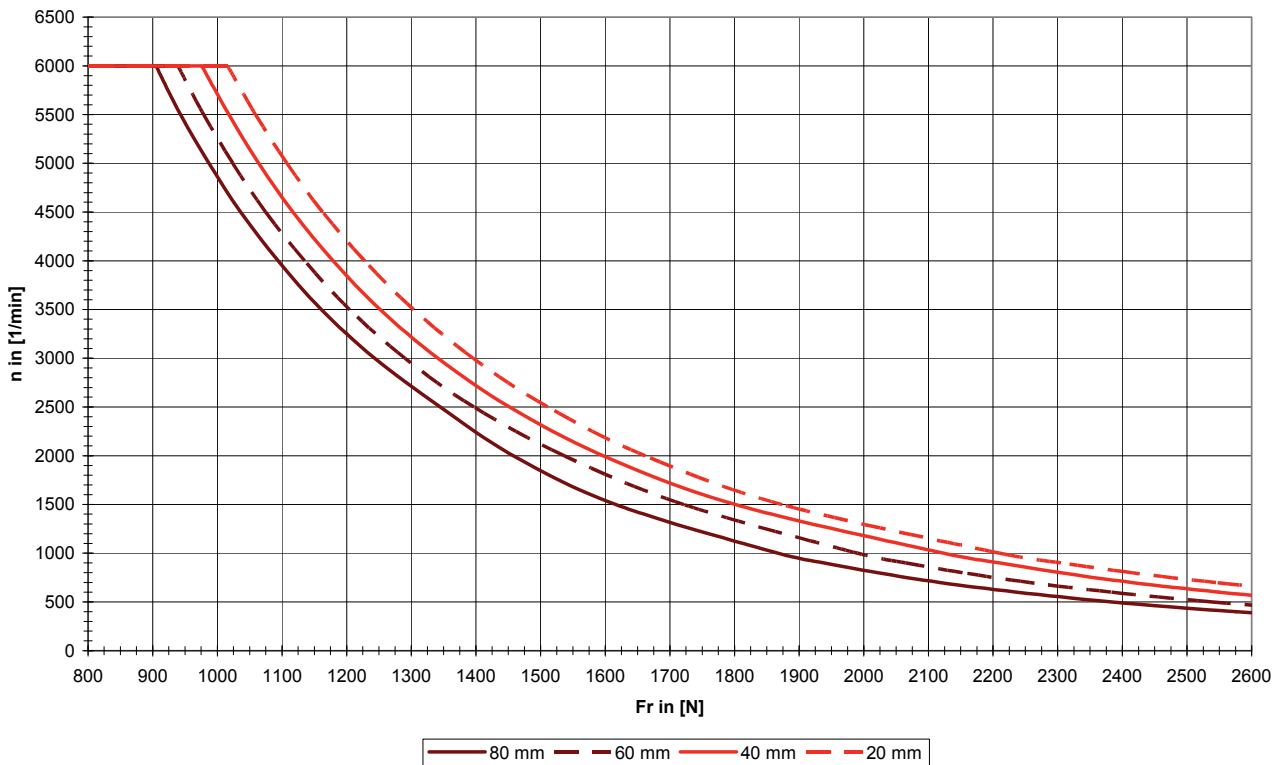
Note: 20,000h grease consumption duration at  $n_{\text{effective}} \leq 1,600$  rpm

DSD2-071  
Welle / Shaft



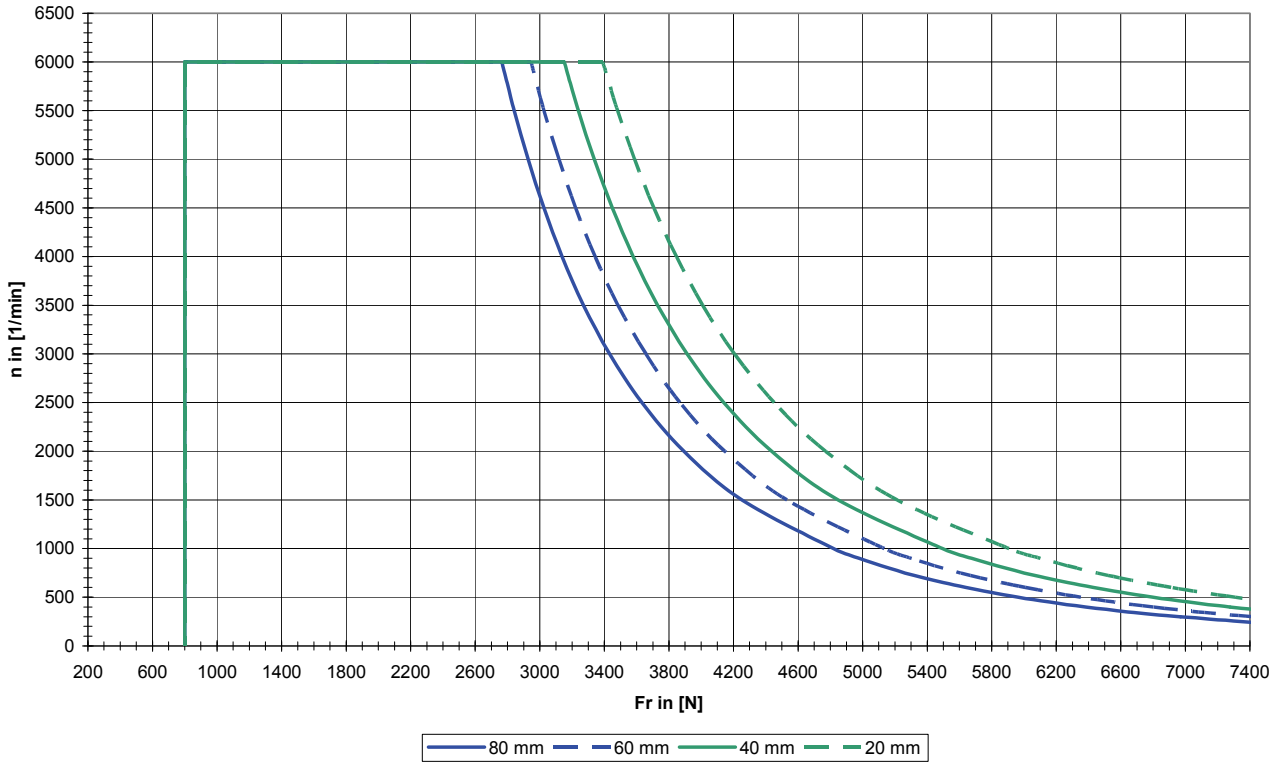
2.8.7. Diagram DSD2-100

DSD2-100  
Kugellager / Ball bearing



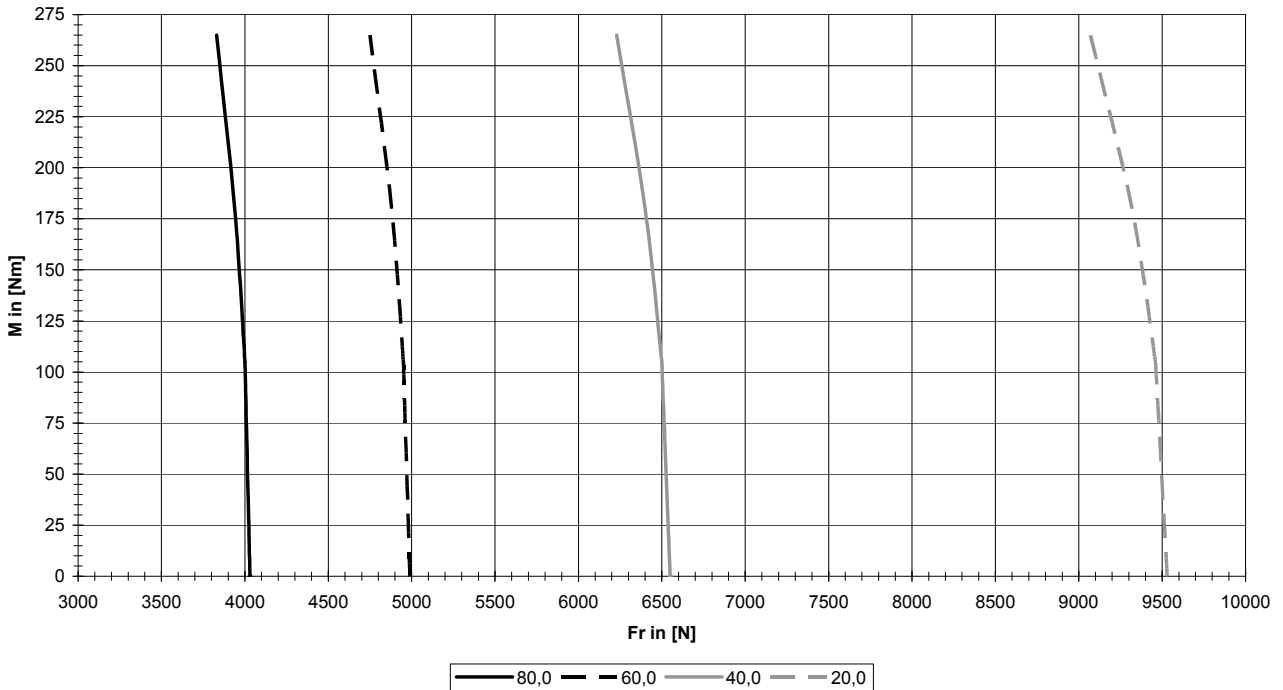
Note: 20,000h grease consumption duration at  $n_{\text{effective}} \leq 4,100$  rpm

DSD2-100  
Rollenlager / Roller bearing



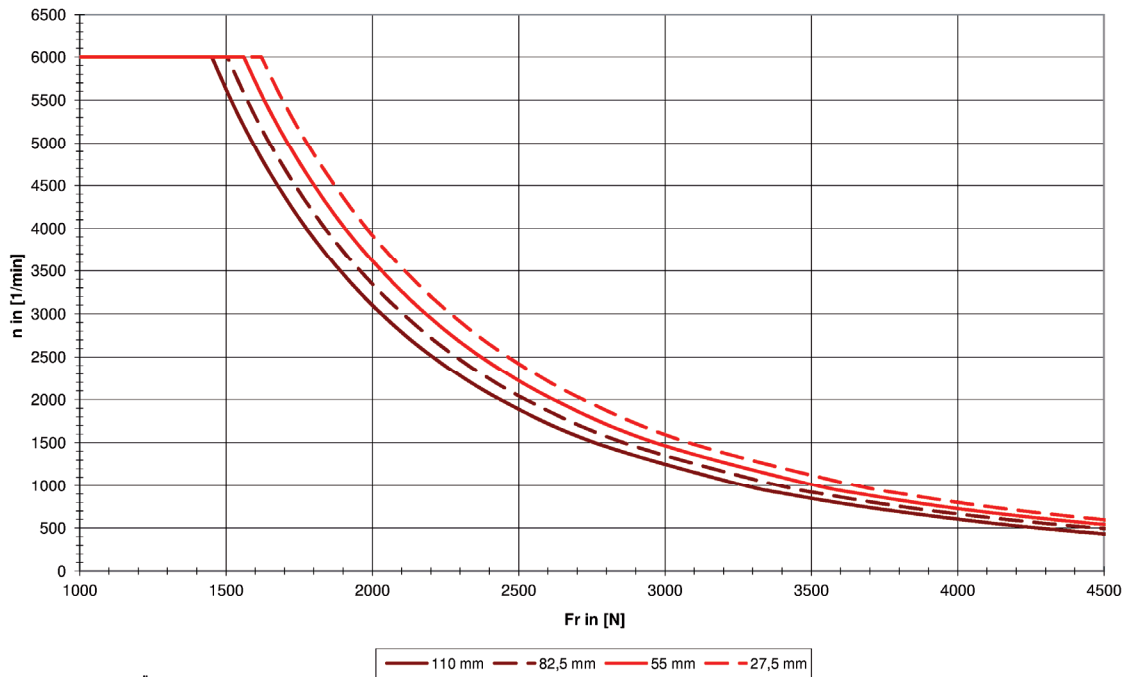
Note: 20,000h grease consumption duration at  $n_{\text{effective}} \leq 1,100$  rpm

DSD2-100  
Welle / Shaft



2.8.8. Diagramme DSD2-132A(R)

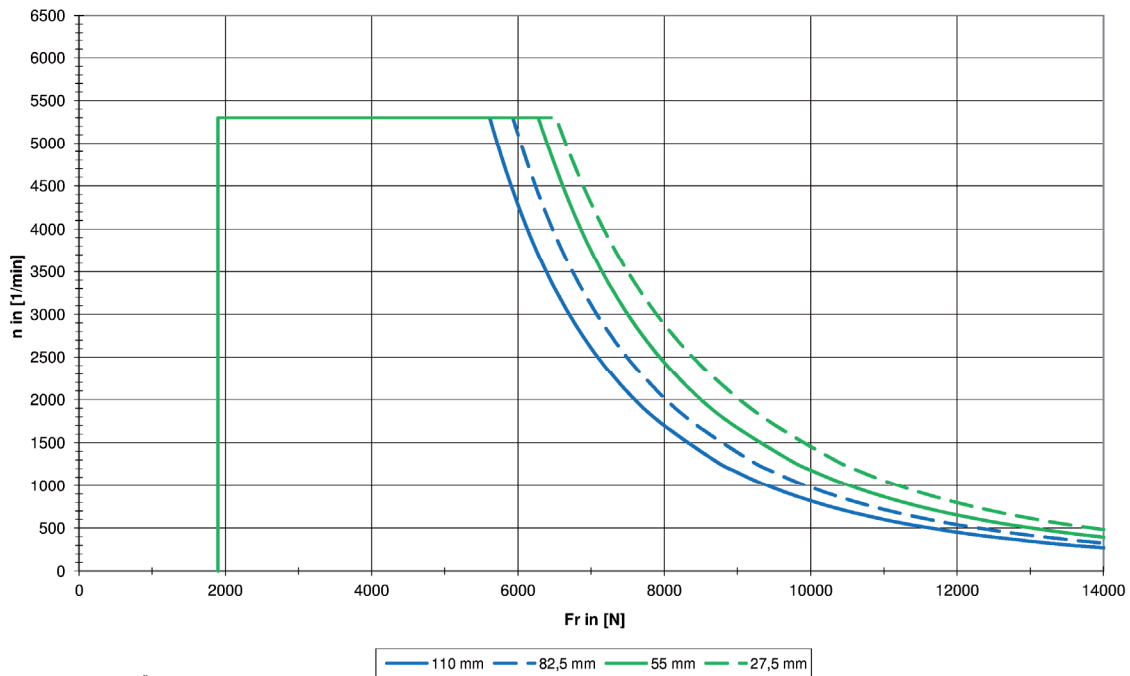
DSD2-132  
Kugellager / Ball bearing



**Achtung:** Technische Änderungen vorbehalten !

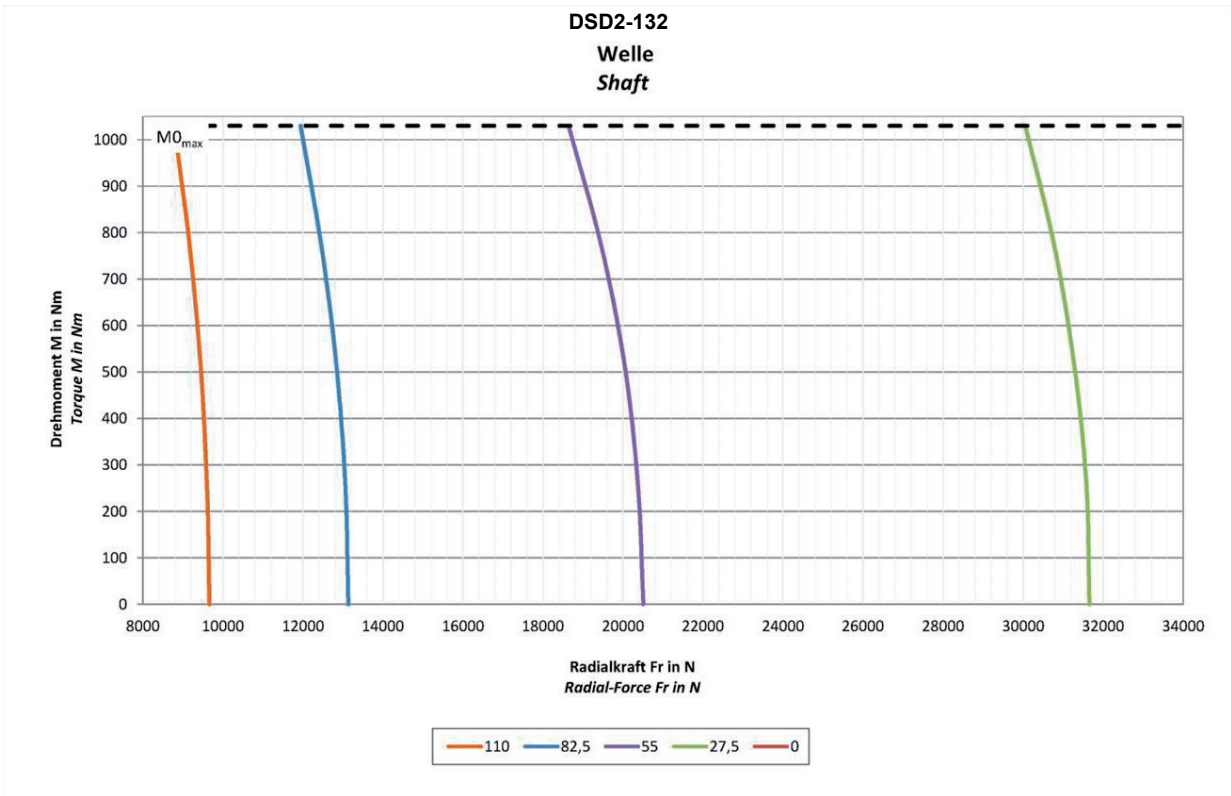
For ball bearings: Grease consumption duration  $F_{h10}$  from 20,000 h at  $n_{average} \leq 3500$  rpm.

DSD2-132  
Rollenlager / Roller bearing

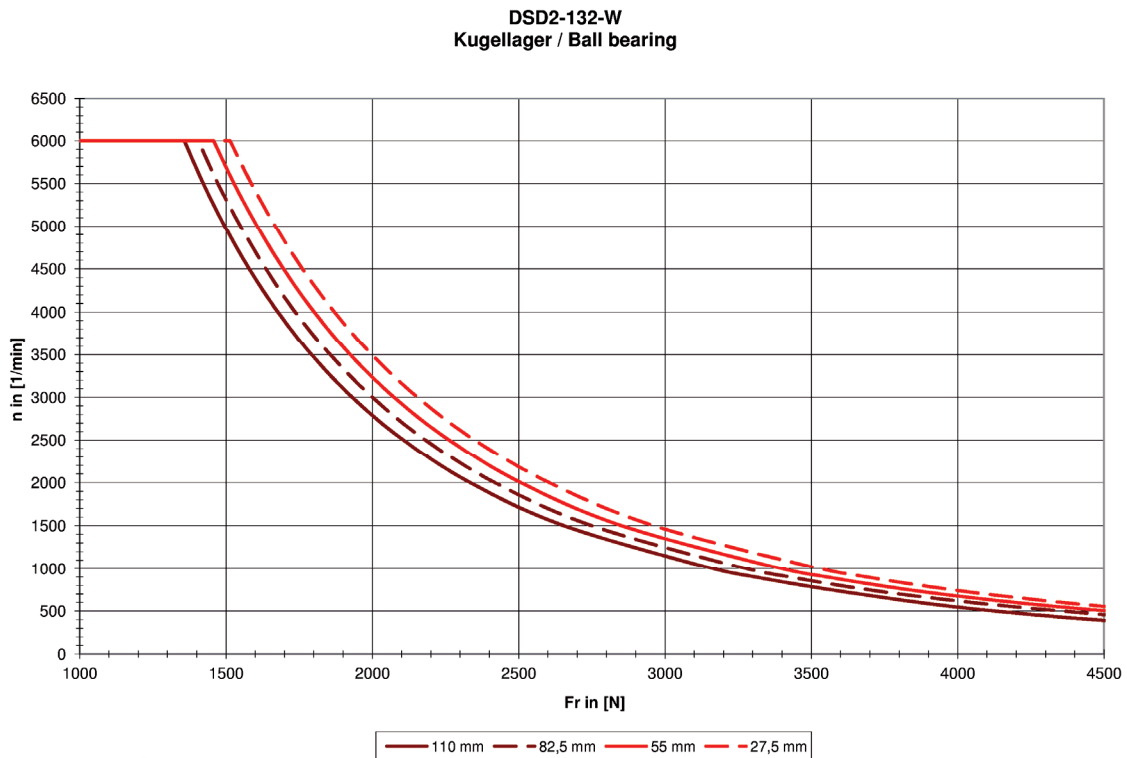


**Achtung:** Technische Änderungen vorbehalten !

For roller bearings: Grease consumption duration  $F_{h10}$  from 20,000 h at  $n_{average} \leq 1000$  rpm.



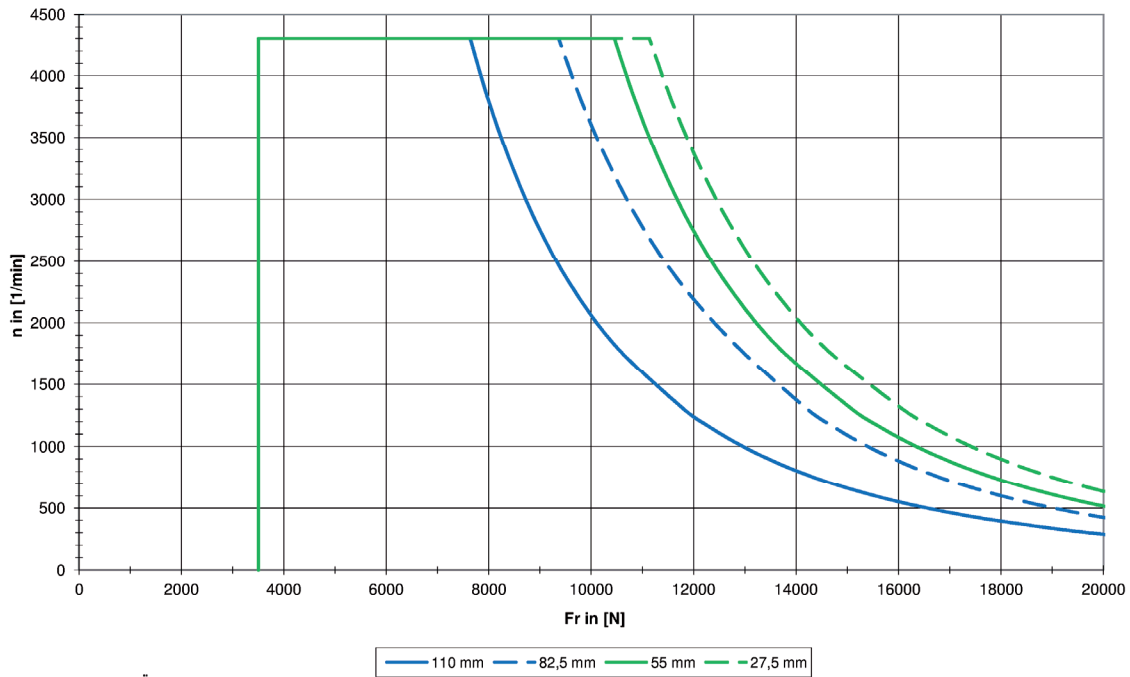
### 2.8.9. Diagramme DSD2-132W



**Achtung:** Technische Änderungen vorbehalten !

For ball bearings: Grease consumption duration  $F_{h10}$  from 20,000 h at  $n_{average} \leq 3500$  rpm.

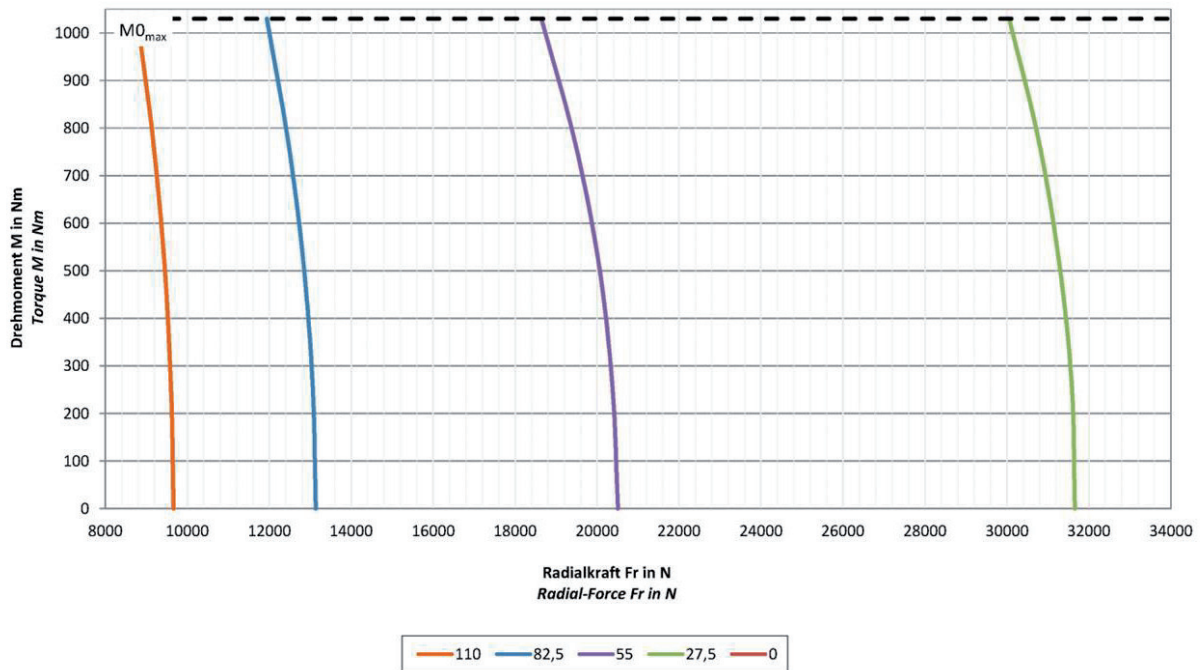
DSD2-132-W  
 Rollenlager / Roller bearing



**Achtung:** Technische Änderungen vorbehalten !

For roller bearings: Grease consumption duration  $F_{h10}$  from 20,000 h at  $n_{average} \leq 1000$  rpm.

DSD2-132  
 Welle  
 Shaft





### 3. Motor components (options)

#### 3.1. Holding brake

The motors can be optionally equipped with a holding brake. The holding brake is a backlash-free permanent magnetic brake. The brakes work according to the closed current principle, i.e. the brake is applied when switched off (or at a failure of the operating voltage). The brakes are designed for an operating voltage of 24 VDC. The specifications by the brake manufacturer apply at room temperature.

The motors are available with the following holding brakes:

Motor type	DSD2-028	DSD2-036	DSD2-045	DSD2-056	DSD2-071	DSD2-100
minimal static holding torque [Nm] at 120 °C.	2	4	10	20	45	105
nominal dynamic holding torque [Nm] at 120 °C.	1,5	3,5	8	18	25	45
Maximum switching energy [J] per braking from n = 3,000 rpm	170	220	270	320	1400	2800
Connection values [V] (+6 % / -10 %)	24	24	24	24	24	24
Power consumption [W]	11	12	18	20	28	50
Moment of inertia [kgcm <sup>2</sup> ]	0,068	0,18	0,6	2,9	7,9	17,6
Switching time On [ms] Ventilation; with basic air gap	25	35	40	65	100	200
Switching time Off [ms] Braking; with basic air gap	2	2,5	20	30	40	50

All brakes are not fail safe brakes in the sense that a torque reduction cannot occur due to uninfluenceable malfunction factors. Depending on the application, the relevant accident prevention regulations, as well as basic health and safety requirements of Annex I of the Machinery Directive and the harmonized European standards must be observed.

For emergency stops or power failures, approximately 2,000 brake processes can be performed.  
(Condition: maximum external inertia = motor inertia and  $n_{max}$  type-related;  
max. braking / hour <20; evenly distributed).

### 3.2. Holding brake DSD2-132

for motor type	Brake type	Brake torque $M_B$ for the holding brake [Nm]	Power input [W]	Current at 24 V DC [A]	max. perm. switch work $W_{perm}$ , per switching [kJ]	Response time [s]	Drop time [s]	Torque of inertia [kgm <sup>2</sup> ]	max. perm. speed [min <sup>-1</sup> ]	Weight [kg]
<b>DSD2-132</b>	SB 200	200	170	6,5	20	0,225	0,3	0,0040	3000	13

<sup>1)</sup> on request for radial ventilation

The following must be considered when using the holding brake:

- **Three emergency stops at maximum** (single braking) per hour that were uniformly distributed are possible
- The values for the switching times are valid for AC-sided switching, in the cold state, at the standard air gap and holding brake
- Response time – time till to the complete brake release (brake without torque)
- Drop time – time till the brake torque is reached
- All specifications apply to an installation on horizontal shaft
- If vertical running is required the supplier must be checked back
- Requirements deviating from the overview can be obtained on request.

#### Braking time / switch work

The brake must be checked upon its case of operation. Therefore, the switch work must be determined.

#### Determination of braking time $[t_B]$

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

$\sum J$  Total torque of inertia in kgm<sup>2</sup> =  $J_{mot} + J_{zus}$  (referring to motor shaft)

$J_{mot}$  Motor torque of inertia in kgm<sup>2</sup>

$J_{zus}$  Additional torque of inertia in kgm<sup>2</sup> (referring to the motor shaft)

$\Delta n$  Motor speed in min<sup>-1</sup>

$M_B$  Braking torque in Nm

$M_L$  Load torque in Nm (positively calculated if it operates in the braking mode; negatively calculated if it acts in the accelerating mode)

$t_0$  Time in s from the operating instant to the completion of the braking torque (response time)

$I$  Number of work cycles per hour

#### Determination of switching work $[W_R]$

$$W_R = \frac{\sum J \cdot \Delta n^2}{182,4} \cdot \frac{M_B}{(M_B \pm M_L)} \quad \text{in } \frac{\text{Joule}}{\text{Switching}}$$

#### Determination of switching capacity $[P_R]$

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

$W_{Rperm} \leq$  Value from the table

In the most cases  $t_0$  is negligible small. If this isn't the case and the time  $t_0$  shall be reduced, this can be reached by interrupting the magnet circuit DC-voltage-sided.

However, this measure must be known before dimensioning the brake motor.

### 3.2.1. Brake supply

Standard: Normal voltage 24 V DC supply with transformer and rectifier.

Option: Normal voltage 104 and 176 V DC supply with brake supply device.

The brake supply device must be ordered separately. The brakes have micro-switches (NO contacts). The silver contacts are covered with a gold coating, so that there are two application ranges available. The gold coating can be irreversibly burnt by exceeding the maximum, load of the gold layer. In this case the contact material "gold coating" may not be used anymore.

Electrical characteristics of the switches:

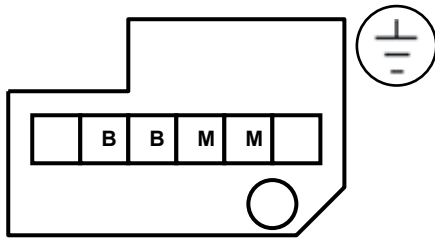
Contact material	Minimum load	Ideal range of application		Max. load
Gold coating	0 mA; 0 V to 3 million cycles	0 mA; 0 V to 3 million cycles	10 mA; 12 V to 1 million cycles	0,1 A; 12 V to 100.000 cycles
Silver	10 mA; 12 V to 3 million cycles	100 mA; 12 V to 3 million cycles	5 A; 30 V to 50.000 cycles	5 A; 30 V to 50.000 cycles

Optionally the brakes can be made with a manual lifting and locking devices.

### 3.2.2. Brake connection

#### DSD2-132 at radial forced ventilation or water cooling

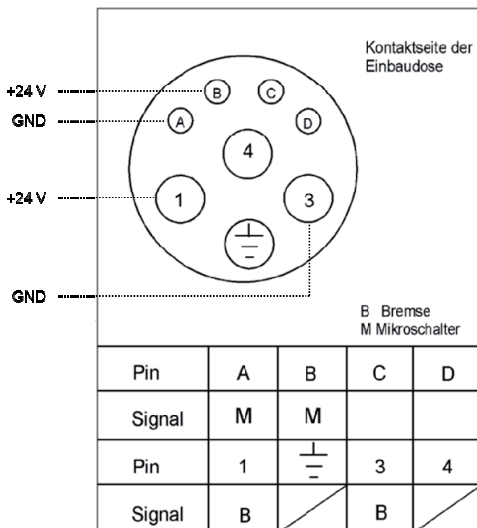
Terminal:



B - Brake  
M – Micro switch

#### DSD2-132 at axial forced ventilation

Connection diagram and pin assignment:

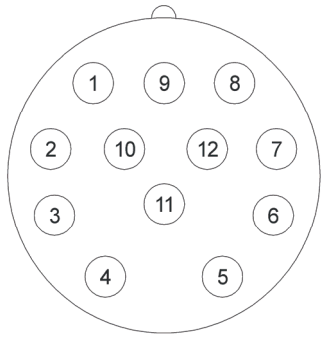


### 3.3. Encoder

#### 3.3.1. Resolver

Motor size	DSD2-028-036	DSD2-045-100
Pole pair number	1	1
Transmission ratio	0,5 ± 0,05	0,5 ± 0,05
Frequency	5 kHz	5 kHz
Nominal input voltage	7 V <sub>rms</sub>	7 V <sub>rms</sub>
Effective input power at no-load speed	33 mW	112 mW
Current consumption at no-load speed	58 mA	70 mA
Max. output voltage at no-load speed	3,5 V ± 10%	3,5 V ± 10%
Voltage constant	61 mV/°	61 mV/°
Rotor resistance	40 Ω ± 10%	48 Ω ± 10%
Stator resistance	102 Ω ± 10%	31 Ω ± 15%
Rotor impedance at no-load speed	75 + j 100 Ω ± 15%	70 + j 74Ω ± 15%
Rotor impedance with short circuit	70 + j 85 Ω ± 15%	62 + j 66Ω ± 15%
Stator impedance at no-load speed with minimum coupling	180 + j 230 Ω ± 15%	108 + j 206Ω ± 15%
Stator impedance with short circuit and maximum coupling	170 + j 200 Ω ± 15%	97 + j 183Ω ± 15%
Phase shift	8° ± 3°	8° ± 3°
Zero voltage	30 mV	30 mV
Angle error in relation to $(\Delta\phi_{\max} + \Delta\phi_{\min})/2$	± 10'	± 6'
Shock according to DIN EN 60068-2-27 (11ms)	≤ 1.000 m/s <sup>2</sup>	≤ 1.000m/s <sup>2</sup>
Vibration according to DIN EN 60068-2-6	≤ 500 m/s <sup>2</sup> (10 - 500 Hz)	≤ 500 m/s <sup>2</sup> (55 - 2000 Hz)

#### Resolver connection

	Pin	Signal	Option for allocation PT1000 (R1/R2) or KTY (K+/K-) at encoder socket
	1	cos -	cos -
	2	-	-
	3	-	-
	4	-	-
	5	sin -	sin -
	6	sin +	sin +
	7	-	K - or R2
	8	cos +	cos +
	9	-	K + or R1
	10	ref +	ref +
	11	-	-
	12	ref -	ref -

View on the contact side of the receptacle

**NOTE:**

Use only at low demands on the true running characteristics of the motor.  
The technical data is specification from the encoder manufacturer.



3.3.2. Resolver for safety-oriented applications

Motor installation size	DSD2-028-036	DSD2-045-132
Pole pair number	1	1
Transmission ratio	0.5 ± 0.05	0.5 ± 0.05
Frequency	5 kHz	5 kHz
Safety integrity level	SIL 3 (IEC 61508) in combination with b maxX5000	
Performance Level	PL e (EN ISO 13849) in combination with b maxx5000	
Maximum angular acceleration	200,000 wheel/s <sup>2</sup>	100,000 wheel/s <sup>2</sup>
Effective input power at no-load speed	33 mW	112 mW
Nominal input voltage	7 V <sub>rms</sub>	7 V <sub>rms</sub>
Current consumption at no-load speed	58 mA	70 mA
Max. output voltage at no-load speed	3.5 V ± 10%	3.5 V ± 10%
Voltage constant	61 mV/°	61 mV/°
Rotor resistance	40 Ω ± 10%	48 Ω ± 10%
Stator resistance	102 Ω ± 10%	31 Ω ± 15%
Rotor impedance at no-load speed	75 + j 100 Ω ± 15%	70 + j 74Ω ± 15%
Rotor impedance with short circuit	70 + j 85 Ω ± 15%	62 + j 66Ω ± 15%
Stator impedance at no-load speed with minimum coupling	180 + j 230 Ω ± 15%	108 + j 206Ω ± 15%
Stator impedance with short circuit and maximum coupling	170 + j 200 Ω ± 15%	97 + j 183Ω ± 15%
Phase shift	8° ± 3°	8° ± 3°
Zero voltage	30 mV	30 mV
Angle error related to (Δφ <sub>max</sub> +Δφ <sub>min</sub> )/2	± 10'	± 6'
Shock according to DIN EN 60068-2-27 (11 ms)	≤ 1000 m/s <sup>2</sup>	≤ 1000 m/s <sup>2</sup>
Vibration according to DIN EN 60068-2-6	≤ 500 m/s <sup>2</sup> (10-500 Hz)	≤ 500 m/s <sup>2</sup> (55-2000 Hz)

Resolver connection

	Pin	Signal	Option for allocation PT1000 (R1/R2) or KTY (K+/K-) at encoder socket
	1	cos -	cos -
	2	-	-
	3	-	-
	4	-	-
	5	sin -	sin -
	6	sin +	sin +
	7	-	K - or R2
	8	cos +	cos +
	9	-	K + or R1
	10	ref +	ref +
	11	-	-
	12	ref -	ref -

View of the contact side of the receptacle

NOTE:

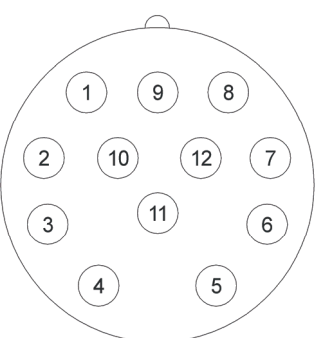
Use only at low demands on the true running characteristics of the motor.  
The technical data is the specifications of the encoder manufacturer.

The configuration options for the safety encoders with different engine versions can be found in the product configurator. The axial ventilation and brake attachment are available by request in combination with safety-related resolver with the DSD2-132.

3.3.3. SINCOS SEK/SEL37 and SEK/SEL 52 (the company SICK/Stegmann)

Motor size	DSD2-028-036		DSD2-045-100	
	SEK37	SEL37	SEK52	SEL52
Number of sine, cosine periods per revolution	16		16	
Measuring step for the interpolation of the sine, cosine periods such as 12 bit	20"		20"	
Number of absolute resolved revolutions	1	4096	1	4096
Code type for the absolute value	binary		binary	
Error limits for evaluating the sine, cosine periods, integral non-linearity	+/- 288"		+/- 288"	
Non-linearity within a sine, cosine, differential non-linearity at nominal position +/- 0.1 mm	+/- 144"		+/- 72"	
Operating speed until the absolute position can be formed	6000 rpm		6000 rpm	
Max. operating speed	12000 rpm		12000 rpm	10000 rpm
Output signal	serial RS 485 asynchronous, half duplex		serial RS 485 asynchronous, half duplex	
Operating voltage range	7-12 V		7-12 V	
max. no-load operating current	50 mA		50 mA	
Shock according to DIN EN 60068-2-27 (10 ms)	100 g		100 g	
Vibration according to EN 60068-2-6 (10-2000 Hz)	50 g		50 g	

SEK/SEL37 and SEK/SEL52 connection

	Pin	Signal	Option for allocation PT1000 (R1/R2) or KTY (K+/K-) at encoder socket
	1	cos -	cos -
	2	+ 485	+ 485
	3	-	K + or R1
	4	-	K - or R2
	5	sin +	sin +
	6	sin -	sin -
	7	- 485	- 485
	8	cos +	cos +
	9	-	-
	10	GND	GND
	11	-	-
	12	+ U	+ U

View on the contact side of the receptacle

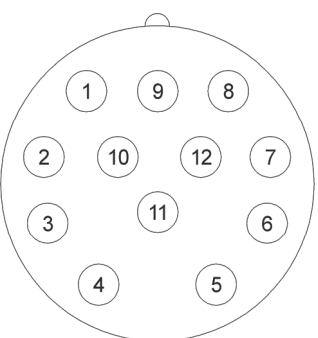
**NOTE:**

This encoder is a component susceptible to ESD.  
The technical data is specification from the encoder manufacturer.

**3.3.4. SINCOS SKS/SKM36 and SRS/SRM50 (the company SICK/Stegmann)**

Motor size	DSD2-028-036		DSD2-045-100	
	SKS36	SKM36	SRS50	SRM50
Number of sine and cosine periods per revolution	128		1024	
Number of steps per revolution	4096		32768	
Number of absolute completed revolutions	1	4096	1	4096
Code type for the absolute value	Binary		Binary	
Output frequency of the sine and cosine signals	0-65 kHz		0-200 kHz	
Fault limits in evaluation of the sine, cosine signals; integral non-linearity in the relaxed state	+/- 80"		+/-45"	
Nonlinearity within a sine or cosine period; differential nonlinearity	+/- 40"		+/- 7"	
Maximum speed at which the absolute position can be defined	6000 rpm		6000 rpm	
Maximum operating speed	12000 rpm		12000 rpm	
Output signals; 2 x 90° offset sinusoidal signals	1 V <sub>SS</sub>		1 V <sub>SS</sub>	
Output signal	Serial RS 485, asynchronous, half-duplex		Serial RS 485, asynchronous, half-duplex	
Operating voltage range	7-12 V		7-12 V	
Operating current without load	60 mA		80 mA	
Shock according to DIN EN 60068-2-27	100 g / 6 ms		100 g / 10 ms	
Vibration according to EN 60068-2-6 (10-2000 Hz)	50 g		20 g	

**SKS/SKM36 and SRS/SRM50 connection**

	Pin	Signal	Option for allocation PT1000 (R1/R2) or KTY (K+/K-) at encoder socket
	1	cos -	cos -
	2	+ 485	+ 485
	3	-	K + or R1
	4	-	K – or R2
	5	sin +	sin +
	6	sin -	sin -
	7	- 485	- 485
	8	cos +	cos +
	9	-	-
	10	GND	GND
	11	-	-
	12	+ U	+ U

View on the contact side of the receptacle

**NOTE:**

This encoder is a component susceptible to ESD.  
The technical data is specification from the encoder manufacturer.



3.3.5. SINCOS SKS/SKM36-S and SRS/SRM50-S (the company SICK/Stegmann)

Motor installation size	DSD2-028-036		DSD2-036-132	
	SKS36-S	SKM36-S	SRS50-S	SRM50-S
Safety integrity level	SIL2 (IEC 61508), SILCL2 (IEC 62061)			
Category	3 (EN ISO 13849)			
Performance Level	PL d (EN ISO 13849)			
Maximum angular acceleration	200,000 wheel/s <sup>2</sup>			
Number of sine, cosine periods per revolution	128		1,024	
Number of steps per revolution	4,096		32,768	
Number of absolute revolutions	1	4,096	1	4,096
Code type for the absolute value	binary		binary	
Output frequency of the sine, cosine signals	0-65 kHz		0-200 kHz	
Fault limits in evaluation of the sine, cosine signals. Integral non-linearity in the relaxed state	+/- 80"		+/- 45"	
Non-linearity within a sine or cosine period. Differential non-linearity	+/- 40"		+/- 7"	
Working speed up to which the absolute position can be formed	6,000 rpm		6,000 rpm	
Maximum operating speed	12,000 rpm		12,000 rpm	
Output signals; 2x90° offset sinusoidal signals	1 V <sub>SS</sub>		1 V <sub>SS</sub>	
Output signal	serial RS 485, asynchronous, half-duplex		serial RS 485, asynchronous, half-duplex	
Operating voltage range	7-12 V		7-12 V	
Operating current without load	60 mA		80 mA	
Shock according to DIN EN 60068-2-27	100 g (6 ms)		100 g (10 ms)	
Vibration according to DIN EN 60068-2-6 (10-2000 Hz)	50 g		20 g	

SKS/SKM36-S and SRS/SRM50-S connection

	Pin	Signal	Option for allocation PT1000 (R1/R2) or KTY (K+/K-) at encoder socket
	1	cos -	cos -
	2	+ 485	+ 485
	3	-	K + or R1
	4	-	K - or R2
	5	sin +	sin +
	6	sin -	sin -
	7	- 485	- 485
	8	cos +	cos +
	9	-	-
	10	GND	GND
	11	-	-
	12	+ U	+ U

View of the contact side of the receptacle

**NOTE:**

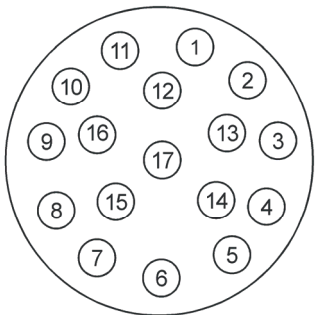
This encoder is a component susceptible to ESD. The technical data is the specifications of the encoder manufacturer. The configuration options for the safety encoders with different engine versions can be found in the product configurator. The combination SRS/SRM50-S with add-on gearbox is available by request. The axial ventilation and brake attachment are available by request in combination with the aforementioned encoders with the DSD2-132.



**3.3.6. ECN1313/EQN1325 (the company Heidenhain)**

Motor size	DSD2-045-132	
	ECN 1313	EQN 1325
Number of sine and cosine periods per revolution	2048	
System accuracy	± 20"	
Number of absolute completed revolutions	1	4096 (12 bit)
Code type for the absolute value	EnDat 2.1	
Sampling limit frequency or limit frequency	0-200 kHz	
Position values/revolution	8192 (13 bit )	
Maximum speed at which the absolute position can be defined	12000 rpm	
Maximum operating speed	12000 rpm	
Power supply	3.6-14 V	
Current consumption without load	≤ 160 mA	≤ 200 mA
Shock 6ms according to DIN EN 60068-2-27 (6ms)	≤ 2000 m/s <sup>2</sup>	
Vibration 55-2000Hz according to DIN EN 60068-2-6 (55-2000 Hz)	≤ 300 m/s <sup>2</sup>	

**ECN1313/EQN1325 connection**

	Pin	Signal	Option for allocation PT1000 (R1/R2) or KTY (K+/K-) at encoder socket
	1	U <sub>p</sub>	U <sub>p</sub>
	2	-	-
	3	-	-
	4	0V	0V
	5	-	K + or R1
	6	-	K - or R2
	7	U <sub>p</sub>	U <sub>p</sub>
	8	Clock	Clock
	9	Clock inv.	Clock inv.
	10	0V	0V
	11	-	-
	12	B +	B +
	13	B -	B -
	14	Data	Data
	15	A +	A +
	16	A -	A -
	17	Data inv.	Data inv.

View on the contact side of the receptacle

**NOTE:**

This encoder is a component susceptible to ESD.  
The technical data is specification from the encoder manufacturer.

3.3.7. ECI1319/EQI1331 (the company Heidenhain)

Motor size	DSD2-056-132	
	ECI 1319	EQI 1331
Number of lines	-	
System accuracy	± 65"	
Number of absolute completed revolutions	1	4096 (12 bit)
Code type for the absolute value	EnDat 2.2	
Position values/revolution	524 288 (19 bit)	
Maximum speed at which the absolute position can be defined	15000 1/min	
Maximum operating speed	15000 1/min	12000 1/min
Power supply	3,6...14 V	
Current consumption without load	95 mA	95 mA
Shock 6ms according to DIN EN 60068-2-27 (6ms)	≤ 2000 m/s <sup>2</sup>	
Vibration 55-2000Hz according to DIN EN 60068-2-6 (55-2000 Hz)	≤ 400 m/s <sup>2</sup>	

ECN1325/EQN1337 connection

	Pin	Signal
	1	Clock
	2	Clock inv.
	3	U <sub>p</sub>
	4	0V
	5	Data
	6	Data inv.
	7	Sensor U <sub>p</sub>
	8	Sensor 0V
	9	-

View on the contact side of the receptacle

**NOTE:**

This encoder is a component susceptible to ESD.  
The technical data is specification from the encoder manufacturer.

**3.3.8. ECN1325/EQN1337 (the company Heidenhain)**

Motor size	DSD2-045-132	
	ECN 1325	EQN 1337
Number of lines	2048	
System accuracy	± 20"	
Number of absolute completed revolutions	1	4096 (12 bit)
Code type for the absolute value	EnDat 2.2	
Position values/revolution	33554432 (25 bit)	
Maximum speed at which the absolute position can be defined	12000 1/min	
Maximum operating speed	12000 1/min	
Power supply	3,6... 14 V	
Current consumption without load	≤ 160 mA	≤ 200 mA
Shock 6ms according to DIN EN 60068-2-27 (6ms)	≤ 2000 m/s <sup>2</sup>	
Vibration 55-2000Hz according to DIN EN 60068-2-6 (55-2000 Hz)	≤ 300 m/s <sup>2</sup>	

**ECN1325/EQN1337 connection**

	Pin	Signal
	1	Clock
	2	Clock inv.
	3	U <sub>p</sub>
	4	0V
	5	Data
	6	Data inv.
	7	Sensor U <sub>p</sub>
	8	Sensor 0V
	9	-

View on the contact side of the receptacle

**NOTE:**

This encoder is a component susceptible to ESD.  
The technical data is specification from the encoder manufacturer.



3.3.9. ECN 1325-S/EQN1337-S (the company Heidenhain)

Motor installation size	DSD2-045-132	
	ECN1325-S	EQN1337-S
Safety integrity level	SIL 2 according to EN 61508	
Category	3 (EN ISO 13849)	
Performance Level	PL d (EN ISO 13849)	
Maximum angular acceleration	50,000 wheel/s <sup>2</sup>	
Number of lines	2,048	
System accuracy	± 20"	
Number of absolute completed revolutions	1	4,096 (12-bit)
Code type for the absolute value	EnDat 2.2	
Position values / revolution	33.554.432 (25-bit)	
Maximum speed at which the absolute position can be defined	12,000 rpm	
Maximum operating speed	12,000 rpm	
Power supply	3.6... 14 V	
Current consumption without load	≤ 160mA	≤ 200mA
Shock according to DIN EN 60068-2-27 (6 ms)	≤ 2000 m/s <sup>2</sup>	
Vibration according to DIN EN 60068-2-6 (55-2000 Hz)	≤ 300 m/s <sup>2</sup>	

ECN1325-S/EQN1337-S connection

	Pin	Signal
	1	Clock
	2	Clock inv.
	3	U <sub>p</sub>
	4	0V
	5	Data
	6	Data inv.
	7	Sensor U <sub>p</sub>
	8	Sensor 0V
	9	-

View of the contact side of the receptacle

**NOTE:**

This encoder is a component susceptible to ESD.  
The technical data is the specifications of the encoder manufacturer.

The configuration options for the safety encoders with different engine versions can be found in the product configurator.

The combination ECN1325/EQN1337-S with add-on gearbox is available by request. These encoders are not available for uncooled motors with n<sub>means</sub> ≥ 4,500 rpm. The axial ventilation and brake attachment are available by request in combination with the aforementioned encoders with the DSD2-132.

**3.3.10. EKS36/EKM36 Hiperface DSL® (the company SICK/ Stegmann)**

Motor installation size	DSD2-028-036	
	EKS36	EKM36
Number of absolute completed revolutions	1 (18-bit)	4.096 (18-bit)
Code type for the absolute value	Binary	
Interface signals	Digital, RS-485	
Position values / revolution	262,144	262,144
Maximum operating speed	12,000 rpm	9,000 rpm
Power supply	7...12 V	
Current consumption without load	≤ 150 mA	≤ 150 mA
Resistance to shocks	100 g / 6 s / according to EN 60068-2-27	
Resistance to vibration	50 g, 10 Hz ... 2,000 Hz (EN 60068-2-6)	
Working temperature	-20°C...+115°C	

Connection EKS36/EKM36 DSL Hiperface

	Pin	Signal
	1	U
	3	V
	4	W
	⊕	GN / GE
	A	B+
	B	B-
	C	DSL+
	D	DSL-

View of the contact side of the receptacle, size 1

	Pin	Signal
	U	U
	V	V
	W	W
	N	/
	⊕	GN/GE
	+	B+
	-	B-
	1	/
	2	/
	H	DSL+
	L	DSL-

View of the contact side of the receptacle, size 1.5

The configuration options for the Hiperface DSL encoder with different engine versions can be found in the product configurator. The encoders can be used up to a cable length of 60 m.

3.3.11. EFS50/EFM50 Hiperface DSL® (the company SICK/ Stegmann)

Motor installation size	DSD2-045-132	
	EFS50	EFM50
Number of absolute completed revolutions	1 (21-bit)	4.096 (21-bit)
Code type for the absolute value	Binary	
Interface signals	Digital, RS-485	
Position values / revolution	2,097,152	
Maximum angular acceleration	200,000 wheel/s <sup>2</sup>	
Maximum operating speed	12,000 rpm	9,000 rpm
Power supply	7...12 V	
Current consumption without load	≤ 150 mA	
Resistance to shocks	100 g / 6 ms / according to EN 60068-2-27	
Resistance to vibration	30 g, 10 Hz ... 2.000 Hz / according to EN 60068-2-6	
Working temperature	-20°C...+120°C	

Connection EFS50/EFM50 DSL Hiperface

	Pin	Signal
	1	U
	3	V
	4	W
	⊕	GN / GE
	A	B+
	B	B-
	C	DSL+
	D	DSL-

View of the contact side of the receptacle, size 1

	Pin	Signal
	U	U
	V	V
	W	W
	N	/
	⊕	GN/GE
	+	B+
	-	B-
	1	/
	2	/
	H	DSL+
	L	DSL-

View of the contact side of the receptacle, size 1.5

The configuration options for the Hiperface DSL encoder with different engine versions can be found in the product configurator. The encoders can be used up to a cable length of 60 m.

### 3.4. Encoder cables for b maXX 4000

#### General Information

A prefabricated encoder cable is used for all encoder systems. The connection at the motor end consists of a 12-pole circular signal connector on resolvers and Hyperface® – encoders, a 17-pole circular signal connector on ECN1313/EQN1325 and a 9-pole circular signal connector on ECN1325/EQN1337. The connection at the controller side consists of a 15-pole D-Sub connector. Alternatively, the signal connector on the motor side is available for Speed-Tec versions with trailing cables.

The dragable cable is suitable for mobile applications such as drag chains, for example. Unlike non-dragable cables made from PVC, the cable sheath is made from durable PU (suitable for environments where acids and bases are present).

#### 3.4.1. Technical data

##### Technical description - non-dragable for resolver/ SinCos Hiperface®-interface / SinCos - and TTL - incremental encoder

- LiYCY, 5x (2x0.14mm<sup>2</sup>) + 2 x 0.5mm<sup>2</sup> copper strand, twisted pairs
- PVC sheath, grey; inscription with Baumüller logo, black
- 1st side: 12-pole circular signal plug connector with 12 socket contacts
- 2nd side: 15-pole Sub-D plug connector with pin contacts and locking screws 4-40UNC
- Outer diameter 9.0 mm (+/- 0.3mm)
- Bending radius:  $r \geq 60$  mm (fixed routing),  $r \geq 135$  mm (flexible use)
- Nominal voltage: 250V<sub>AC</sub>

##### Technical description - dragable for resolver/ SinCos Hiperface®-interface / SinCos - and TTL - incremental encoder

- Li12YC11Y, 5x (2x0.14mm<sup>2</sup>) + 2 x 0.5mm<sup>2</sup> copper strand, twisted pairs
- PU sheath, black; inscription with Baumüller logo, white
- 1st side: 12-pole circular signal plug connector with 12 socket contacts
- 2nd side: 15-pole Sub-D plug connector with pin contacts and locking screws 4-40UNC
- Outer diameter 9.0 mm (+/- 0.3mm)
- Bending radius:  $r \geq 70$  mm (fixed routing),  $r \geq 100$  mm (flexible use)
- Nominal voltage: 300V<sub>AC</sub>

##### Technical description - non-dragable for EnDat® 2.1-interface

- LiYCY, 5x (2x0.14mm<sup>2</sup>) + 2 x 0.5mm<sup>2</sup> copper strand, twisted pairs
- PVC sheath, grey; inscription with Baumüller logo, black
- 1st side: 17-pole circular signal plug connector with 17 socket contacts
- 2nd side: 15-pole Sub-D plug connector with pin contacts and locking screws 4-40UNC
- Outer diameter 9.0 mm (+/- 0.3mm)
- Bending radius:  $r \geq 60$  mm (fixed routing),  $r \geq 135$  mm (flexible use)
- Nominal voltage: 250V<sub>AC</sub>

##### Technical description - dragable for EnDat® 2.1-interface

- Li12YC11Y, 5x (2x0.14mm<sup>2</sup>) + 2 x 0.5mm<sup>2</sup> copper strand, twisted pairs
- PU sheath, black; inscription with Baumüller logo, white
- 1st side: 17-pole circular signal plug connector with 17 socket contacts
- 2nd side: 15-pole Sub-D plug connector with pin contacts and locking screws 4-40UNC
- Outer diameter 9.0 mm (+/- 0.3mm)
- Bending radius:  $r \geq 70$  mm (fixed routing),  $r \geq 100$  mm (flexible use)
- Nominal voltage: 300V<sub>AC</sub>

**Technical description - dragable for EnDat® 2.2-interface**

- PUR sheath, 1x(4x0.14mm<sup>2</sup>) + (4x0.34mm<sup>2</sup>)
- 1 twisted foursome 0.14mm<sup>2</sup>, 4 wires 0.34mm<sup>2</sup>, copper, tin-plated
- Total shield CuSn, inscription Heidenhain
- 1st side: 9-pole circular signal plug connector with 8 socket contacts
- 2nd side: 15-pole Sub-D plug connector with pin contacts and locking screws 4-40UNC
- Outer diameter 6.0 mm
- Bending radius:  $r \geq 20$  mm (fixed routing),  $r \geq 75$  mm (flexible use)
- Dielectric strength wire/wire and wire/shield: 0.5kV at 50Hz, 1 minute

**3.4.2. Application references**

- **Operating temperature of encoder cable resolver/ SinCos Hiperface®-interface / SinCos - and TTL - incremental encoder / EnDat® 2.1**

	Dragable	Not dragable
Limit temperature	on the surface	on the surface
Static use/minimal movement	- 40 °C to + 80 °C	- 30 °C to + 80 °C
Permanent movement	- 30 °C to + 80 °C	- 5 °C to + 70 °C

- **Operating temperature of encoder cable EnDat® 2.2**

	Dragable
Limit temperature	on the surface
Static use/minimal movement	- 40 °C to + 80 °C
Permanent movement	- 10 °C to + 80 °C

- **Routing of cable on motor**

The cables must not touch the surface of the motor.



### 3.4.3. Order information for encoder cables

Encoder cables for resolver/ SinCos Hiperface®-interface / SinCos - and TTL - incremental encoder - prefabricated cables with connector

Not dragable, prefabricated Cable 5 x (2x0.14mm <sup>2</sup> ) + 2 x 0.5 mm <sup>2</sup> with plug connector		Dragable, prefabricated Cable 5 x (2x0.14mm <sup>2</sup> ) + 2 x 0.5 mm <sup>2</sup> with plug connector		
Länge [m]	Art. Nr.	Länge [m]	Art. Nr.	Art. Nr. (Speed Tec)
1	243601	3	246658	448944
2	211338	4	243379	448945
3	219333	5	239540	448948
4	231166	6	242954	448946
5	209879	8	239541	448949
6	220197	10	239542	448956
7	216455	15	239543	448962
8	220429	20	239544	448967
10	210052	25	239545	448970
15	215716	30	239546	448971
20	218568	35	239547	448973
25	218569	40	240520	448976
30	217094	45	240521	448978
35	216444	50	240522	448980
40	217095	55	244033	448981
45	217567	60	245484	448982
50	217568			
55	217569			
60	217570			
70	232088			

Encoder cables for EnDat® 2.1- prefabricated cables with plug connector

Not dragable, prefabricated Cable 5 x (2x0.14mm <sup>2</sup> ) + 2 x 0.5 mm <sup>2</sup> with plug connector		Dragable, prefabricated Cable 5 x (2x0.14mm <sup>2</sup> ) + 2 x 0.5 mm <sup>2</sup> with plug connector		
Länge [m]	Art. Nr.	Länge [m]	Art. Nr.	Art. Nr. (Speed Tec)
2	383152	2	393889	448816
3	383923	3	369864	448817
5	393885	5	394014	448818
7	389445	7	389807	448819
8	380138	8	393890	448820
9	389446	9	389808	448821
10	393886	10	393891	448822
15	388505	15	393892	448823
20	388418	17	371494	448824
25	393887	20	393893	448825
30	393888	25	393894	448826
35	387958	30	380358	448827
40	382006	35	391216	448828
50	388419	40	382005	448830
70	384473	50	378022	448832
90	387391			

**Encoder cables for EnDat® 2.2 - prefabricated cables with plug connector**

**Dragable, prefabricated**

cable 1x4x0.14 + 4x0.34 PUR Ø 6mm with plug connector

Länge [m]	Art. Nr.	Art. Nr. (Speed Tec)
2	434056	459031
3	434057	459032
5	434058	459033
10	434059	459035
15	434060	459036
20	434061	459037
25	434062	459038
50	434063	459042

**3.5. Encoder cables for b maXX 5000**

A prefabricated encoder cable is used for all encoder systems. The connection at the motor end consists of a 12-pole circular signal connector on resolvers and Hyperface® encoder, a 17-pole circular signal connector on ECN1313/EQN1325. The connection at the controller side consists of a 26-pole D-Sub connector. Alternatively, the signal connector on the motor side is available in a Speed-Tec version.

**3.5.1. Technical data**

**Technical description - dragable for resolver**

- Li9YC, 1 x (2 x 0,25) + Li9Y, 2 x (2x0,25) + Li9YC11Y, 1 x (2 x 0,34), copper strand, twisted pairs
- PUR sheat, green; inscription with Baumüller Nürnberg and encoder cable Resolver
- 1st side: 12-pole circular signal plug connector with 12 socket contacts
- 2nd side: 26-pole Sub-D plug connector with pin contacts and locking screws 4-40UNC
- Outer diameter 7.3 mm (+/- 0.3mm)
- Bending radius:  $r \geq 4 \times D$  (fixed routing),  $r \geq 10 \times D$  (flexible use)

**Technical description - dragable for SinCos Hiperface®-interface und SinCos - and TTL - incremental encoder**

- Li9YC, 3 x (2 x 0,25) , + Li9Y, 3 x (2 x 0,25) + Li9YC11Y, 1 x (2x0,34), copper strand, twisted pairs
- PUR sheat, green; inscription with Baumüller Nürnberg and encoder cable Hyperface or Incremental
- 1st side: 12-pole circular signal plug connector with 12 socket contacts
- 2nd side: 26-pole Sub-D plug connector with pin contacts and locking screws 4-40UNC
- Outer diameter 9.6 mm (+/- 0.3mm)
- Bending radius:  $r \geq 4 \times D$  (fixed routing),  $r \geq 10 \times D$  (flexible use)

**Technical description – dragable for EnDat® 2.1-interface**

- Li9YC, 3 x (2 x 0,25) , + Li9Y, 3 x (2 x 0,25) + Li9YC11Y, 1 x (2x0,34), copper strand, twisted pairs
- PUR sheat, green; inscription with Baumüller Nürnberg and encoder cable Endat 2.1
- 1st side: 17-pole circular signal plug connector with 17 socket contacts
- 2nd side: 26-pole Sub-D plug connector with pin contacts and locking screws 4-40UNC
- Outer diameter 9.6 mm (+/- 0.3mm)
- Bending radius:  $r \geq 4 \times D$  (fixed routing),  $r \geq 10 \times D$  (flexible use)

**Technical description – Draggable hybrid cable for Hiperface DSL®**

- Hybrid cable
- Shielding braid Copper wires, tinned
- PUR sheath, orange, flame-retardant, self-extinguishing
- 1st side: metal round plug speedtec M23 hybrid socket 8-pole for wire with 4G1.5 and 4G2.5  
metal round plug speedtec M40 hybrid socket 5+4-pole + 2 -pole insulating body for wire with 4G2.5, 4G4 and 4G6
- 2nd side: Metal 45°-D-Sub plug, 26-pole with electronics
- Ready-for-use cable for bmaXX 5300
- Cable for bmaXX 5500 being prepared

**3.5.2. Application references**

**Operating temperature of encoder cable resolver/ SinCos Hiperface®-interface / SinCos - and TTL - incremental encoder / EnDat® 2.1**

Limit temperature	on the surface
Static use/minimal movement	- 40 °C to + 80 °C
Permanent movement	- 20 °C to + 60 °C

**Routing of cable on motor**

The cables must not touch the surface of the motor.

**3.5.3. Order information for encoder cables**

**Encoder cable - prefabricated with plug**

**For Resolver**

Length [m]	Item Number	Item Number. (Speed Tec)
1	429914	448746
2	429915	448747
3	429916	448748
5	429917	448749
7	429918	448750
10	429919	448751
15	429920	448752
20	429921	448753
25	429922	448754
30	429923	448755
35	429924	448756
40	429925	448757
50	429926	448758
75	429927	448759

**For SinCos Hiperface® - interface**

Length [m]	Item Number	Item Number (Speed Tec)
1	429958	448761
2	429959	448762
3	429960	448763
5	429961	448764
7	429962	448765
10	429963	448766
15	429964	448767
20	429965	448768
25	429966	448769
30	429967	448770
35	429968	448772
40	429969	448773
50	429970	448774
75	429971	448775

**For SinCos - and TTL - incremental encoder**

Length [m]	Item Number	Item Number. (Speed Tec)
1	430015	448777
2	430016	448778
3	430017	448779
5	430018	448780

**For SinCos EnDat® 2.1 - interface**

Length [m]	Item Number	Item Number (Speed Tec)
1	429986	448796
2	429987	448797
3	429988	448798
5	429989	448799

## Three-phase synchronous motors DSD2-028-132

7	430019	448781	7	429990	448800
10	430020	448782	10	429991	448801
15	430021	448783	15	429992	448802
20	430022	448784	20	429993	448803
25	430023	448785	25	429994	448804
30	430024	448786	30	429995	448805
35	430025	448787	35	429996	448806
40	430026	448788	40	429997	448807
50	430027	448789	50	429998	448808
75	430028	448790	75	429999	448809

### For Hiperface DSL® hybrid cables size 1 for bmaXX 5300<sup>1)</sup>

Length [m]	Rated current 15A 4G1.5+(2x0.75)+ (2x22AWG)	Rated current 20A 4G2.5+(2x1.0)+ (2x22AWG)
	Item No.	Item No.
3	464201	464217
5	464202	464218
7	464203	464219
10	464204	464220
15	464205	464221
20	464206	464222
25	464207	464223
30	464208	464224
35	464209	464225
40	464210	464226
50	464211	464227
60	464212	464228

### For Hiperface DSL® hybrid cables size 1.5 for bmaXX 5300<sup>1)</sup>

Length [m]	Rated current 21A 4G2.5+(2x1.0)+(2x22AWG)	Rated current 28A 4G4.0+(2x1.0)+(2x22AWG)	Rated current 36A 4G6.0+(2x1.0)+(2x22AWG)
	Item No.	Item No.	Item No.
3	464235	448798	464278
5	464236	448799	464279
7	464237	448800	464280
10	464238	448801	464281
15	464239	448802	464282
20	464240	448803	464283
25	464241	448804	464284
30	464242	448805	464285
35	464243	448806	464286
40	464244	448807	464287
50	464245	448808	464288
60	464246	448809	464289

<sup>1)</sup> Cables are being prepared for bmaXX 5500

### 3.6. Motor cables

The motor cables are highly flexible trailing cables with overall shielding. They comply with VDE, UL and CSA regulations. The control cables are integrated as star quads. The brake control and the temperature sensor are connected via the main connector. The cables are particularly suited for the optimum use of cable racks thanks to their small cross-section, low weight, and non-impeding surface. As a result, they can be used efficiently in trailing chains. The overall shielding with an optical coverage of more than 85% makes the cable non-critical from an EMC perspective.

#### 3.6.1. Technical data

- Sheath resistance to media such as coolants and machine and gearbox oils
- Abrasion resistance thanks to a special surface in cable racks and trailing chains
- Highly flexible trailing cable, minimum bending radius for flexible use: 12 x D
- Non-blocking sheath surface with satin finish
- Shield made of tinned copper braid with optical coverage of  $\geq 85\%$
- Core insulation made from TPE or polyester, sheath material: Halogen-free PUR
- Cable is CFC and silicone-free
- Behavior in the event of fire: Fire-inhibiting, halogen-free
- Cable color RAL 1028, melon yellow
- Label features Baumüller logo and VDE, UL and CSA marks

#### Rated voltage

- $U_0/U$  600/1.000 V (power cores)
- U 24 V DC (control cores)

#### Core labeling

- Power cores U, VV, WWW
- Colored control cable pairs as star quads in red, white, black, yellow

#### Assignment of pairs: (note the polarity)

- Red – black (brake)
- white – yellow (temperature)

#### 3.6.2. Main connection via connector

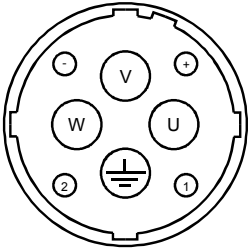
##### Note:

The connector size is determined by the standstill current  $I_0$  of the motor used. Motors with a standstill current of  $\leq 20A$  feature a size 1 main connector. For standstill currents of  $20 A < I_0 \leq 36 A$ , a size 1.5 main connector is used. A terminal box must be used at a  $I_0 > 36A$ .

#### Poles of the female main connectors:

		Pin	Signal	Color/labeling
Size 1 $I_0 \leq 20 A$		1	Phase U	U
			PE	Green/yellow
		3	Phase V	V V
		4	Phase W	W W W
		A	B+	Red
		B	B-	Black
		C	K+	White
		D	K-	Yellow


View of contact side of female connector

		Pin	Signal	Color/labeling
Size 1.5 $I_0 \leq 36 \text{ A}$		U V W ⏏ + - 1 2	Phase U Phase V Phase W PE B+ B- K- K+	U V V W W W green / yellow Red Black White Yellow

View of contact side of female connector

Cable cross-section <sup>2)</sup>	Rated current [A] <sup>1) 2)</sup>	Connector 540 V Size <sup>2)</sup>	Cable diameter <sup>2)</sup> [mm]
4x1.5 mm <sup>2</sup> + 4x0.75 mm <sup>2</sup>	15	1	11.7-12.3
4x2.5 mm <sup>2</sup> + 4x0.75 mm <sup>2</sup>	20	1	12.7-14.6
4x4 mm <sup>2</sup> + 4x0.75 mm <sup>2</sup>	28	1.5	14.2-15.4
4x6 mm <sup>2</sup> + 4x0.75 mm <sup>2</sup>	36	1.5	16.6-17.9
4x10 mm <sup>2</sup> + 4x0.75 mm <sup>2</sup>	50	1.5	20.5-21.5
4x16 mm <sup>2</sup> + 4x0.75 mm <sup>2</sup>	66	-	23.0-25.8
4x25 mm <sup>2</sup> + 2x(2x1.5 mm <sup>2</sup> )	84	-	26.3-29.7
4x35 mm <sup>2</sup> + 2x(2x1.5 mm <sup>2</sup> )	104	-	30.8-32.5

<sup>1)</sup> Current carrying capacity acc. to Table 5, laying type C or E VDE 0113/EN 60204 Part 1 issue 1997)  
Ambient temperature 40 °C

<sup>2)</sup> Deviating regulations apply for  approved motors.

### 3.6.3. Application notes

#### Operating temperature

The cables can be operated within a temperature range of between -20 °C and +80 °C.

#### Cable laying at the motor

The cables must not touch the motor surface.

#### Smallest permissible bending radii

12x outer cable diameter.

### 3.6.4. Ordering data for main connection cables

#### Rated current: 15 A

Cable 4 x 1.5 mm<sup>2</sup> + 4 x 0.75 mm<sup>2</sup>

With connector size 1

Length in m	Item Number	Item Number	Speed	Tec
5	324781	445872		
7	324782	445887		
10	324783	445889		
15	324784	447675		
20	324785	447676		
25	324786	447677		
30	324787	447678		
35	324788	447679		
40	324789	447680		
50	324790	447681		
75	324791	447682		
100	324792	447683		

#### Rated current: 28 A

Cable 4 x 4 mm<sup>2</sup> + 4x 0.75 mm<sup>2</sup>

With connector size 1.5

Length in m	Item Number	Item Number	Speed	Tec
5	326589	448063		
7	326591	448064		
10	326592	448065		
15	326593	448066		
20	326594	448067		
25	326596	448069		
30	326597	448070		
35	326598	448071		
40	326599	448072		

#### Rated current: 20 A

Cable 4 x 2.5 mm<sup>2</sup> + 4x 0.75 mm<sup>2</sup>

With connector size 1

Length in m	Item Number	Item Number	Speed	Tec
5	414840	447684		
7	380967	447687		
10	413410	447688		
15	414841	447692		
20	414842	447698		
25	414843	447852		
30	414846	447853		
35	414848	447854		
40	414849	447855		
50	414850	447856		
75	414851	447857		
100	414852	447858		

#### Rated current: 36 A

Cable 4 x 6 mm<sup>2</sup> + 4x 0.75 mm<sup>2</sup>

With connector size 1.5

Length in m	Item Number	Item Number	Speed	Tec
5	326600	448080		
7	326601	448118		
10	326602	448119		
15	326603	448120		
20	326604	448121		
25	326605	448122		
30	326606	448123		
35	326607	448124		
40	326608	448125		

#### Rated current: 21 A

Cable 4 x 2.5 mm<sup>2</sup> + 4x 0.75 mm<sup>2</sup>

With connector size 1.5

Length in m	Article number	Item Number	Speed	Tec
5	326577	447686		
7	326578	447689		
10	326579	447690		
15	326580	447691		
20	326581	447693		
25	326582	447694		
30	326583	447695		
35	326584	447696		
40	326585	447697		
50	326586	447699		
75	326587	448060		
100	326588	448061		

#### Rated current: 50 A


Cable 4 x 10 mm<sup>2</sup> + 4x 0.75 mm<sup>2</sup>

With connector size 1.55

Length in m	Article number	Item Number	Speed	Tec
5	326609	448129		
7	326610	448131		
10	326611	448132		
15	326612	448133		
20	326613	448134		
25	326614	448135		
30	326615	448136		
35	326616	448137		
40	326617	448138		

#### Mating plug

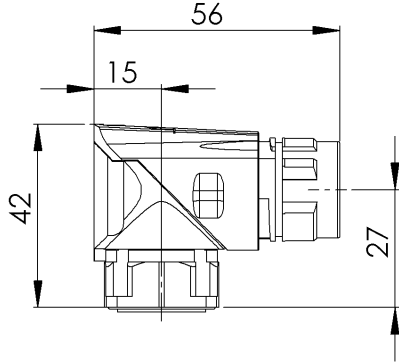
Type	Article number	Art. Nr.	Speed	Tec
Gr. 1 f. 4x1,5mm <sup>2</sup> o. x2,5mm <sup>2</sup>	261740	445486		
Gr. 1,5 f. 4x2,5mm <sup>2</sup> bis 4x6mm <sup>2</sup>	326574	445487		
Gr. 1,5 f. 4x10mm <sup>2</sup>	326569	445488		

Deviating regulations apply for  approved motors.

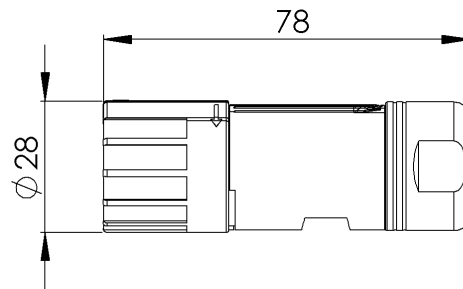
### 3.7. Dimensional drawings for equipment socket and plug

#### 3.7.1. Main connection:

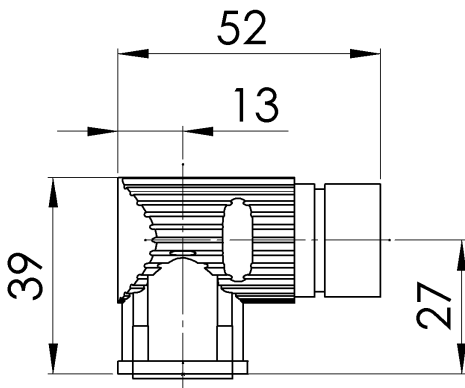
Speed-Tec - rotary angle socket  
(Size 1 for Current  $I_0$  up to 20 A)  
or hybrid socket DSL Hiperface



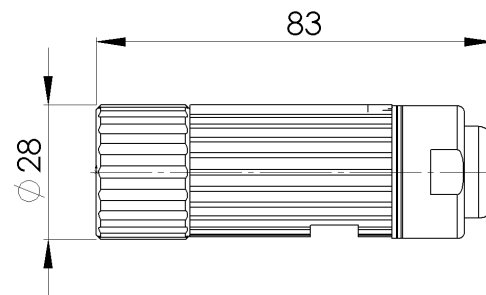
Speed-Tec - mating connector  
(Size 1 for Current  $I_0$  up to 20 A)



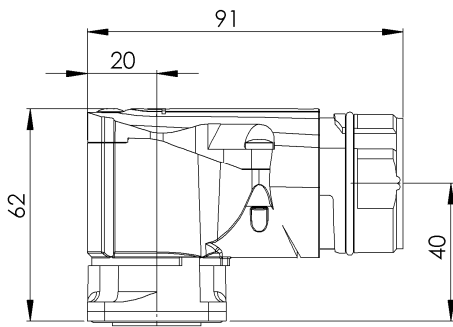
Rotary angle socket  
(Size 1 for Current  $I_0$  up to 20 A)



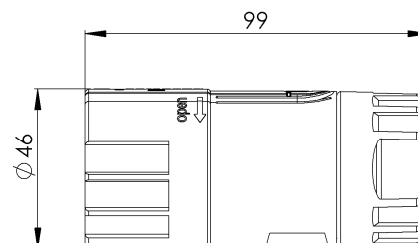
Mating connector  
(Size 1 for Current  $I_0$  up to 20 A)



Speed-Tec - rotary angle socket  
(Size 1.5 for Current  $I_0$  up to 36 A)  
or hybrid socket DSL Hiperface

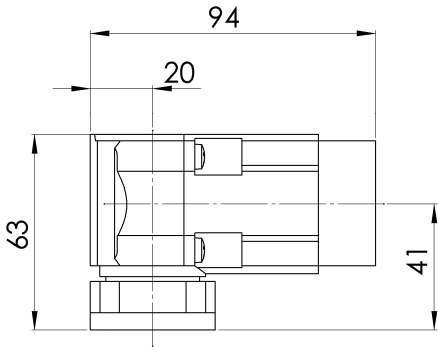


Speed-Tec - mating connector  
(Size 1.5 for Current  $I_0$  up to 36 A)

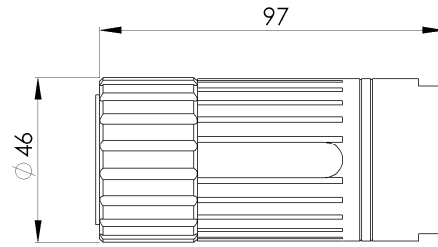




Rotating accessory socket  
(Size 1.5 for Current  $I_0$  up to 36 A)

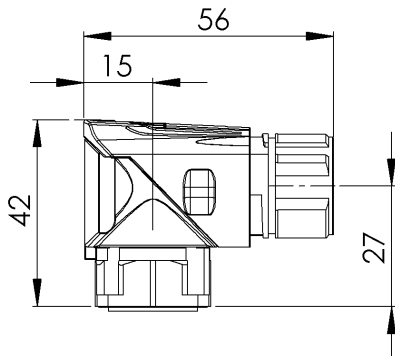


Rotating accessory socket  
(Size 1.5 for Current  $I_0$  up to 36 A)

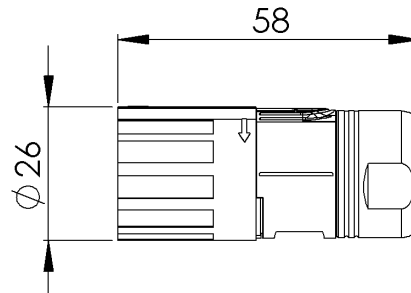


### 3.7.2. Encoder connection

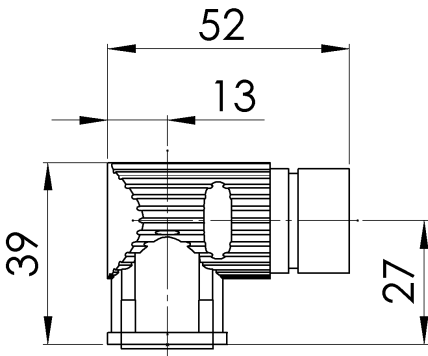
Speed-Tec - rotary angle socket



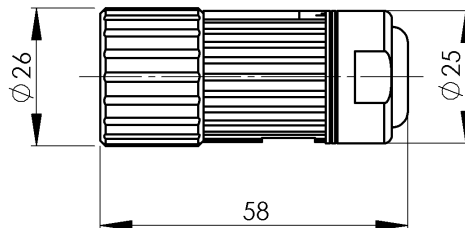
Speed-Tec - mating connector



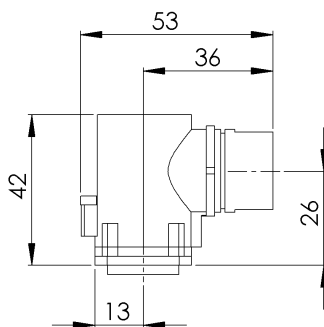
Rotary angle socket



Rotary angle socket - mating connector

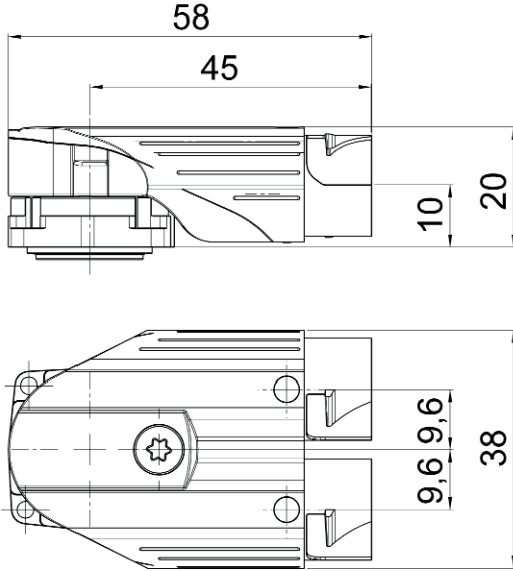


Rotary angle socket for ECN1325/EQN1337 encoder (mating plug cannot be supplied separately)

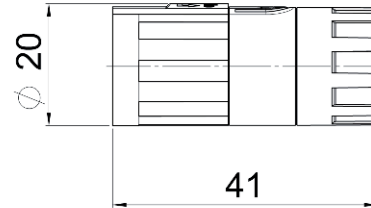


### 3.7.3. Combi angle socket

rotating combi angle socket  
(current  $I_0$  up to 14 A)



Opposing plug socket combi angle socket  
(current  $I_0$  up to 14 A)



**NOTE:**

The connection allocations of the combi angle socket or opposing plug socket are not identical with the sensor and main connection allocations described in this documentation. The connection allocation of the combi angle socket is available on request.

### 3.8. Fan

#### 3.8.1. DSD2-056-100

	DSD2-056..100			
Rated voltage [V]	24 V DC	115 V AC	230 V AC	
Rated frequency [Hz]	-	60	50	60
Rated current [A]	0.52	0,47	0,22	0,20
Rated speed [rpm]	2758	2394	2385	2099
Power rating [W]	12.4	35	32	30
Connection	6-pole plug			
Protection type	IP65			

#### Fan connection 24 V DC / 115 V AC / 230 V AC

Pin	1	2	4	5
Signal	/	/	L+ (+24V)	L- (0V)
Pin	6			
Signal	/	/		

Anschlußschema / Connection diagram:  
Steckeranschluß DC-Lüfter 24V  
DC-Fan-Motor 24V

KA 2038  
19.07.12

Baumüller Nürnberg GmbH

Pin	1	2	4	5
Signal	/	N	/	/
Pin	6			
Signal	U	/	/	/

Anschlußschema / Connection diagram:  
Steckeranschluß Lüfter 115V  
Fan-Motor 115V

KA 2039  
19.07.12

Baumüller Nürnberg GmbH

Pin	1	2	4	5
Signal	U	N	/	/
Pin	6			
Signal	/	/	/	/

Anschlußschema / Connection diagram:  
Steckeranschluß Lüfter 230V  
Fan-Motor 230V

KA 2028\_a  
AM 30764  
19.07.12

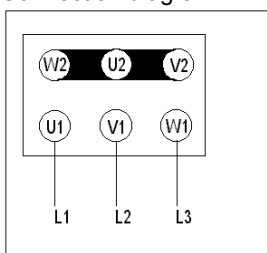
Baumüller Nürnberg GmbH

View on the contact side of the receptacle

#### 3.8.2. DSD2-132

#### Fan connection at a standardized blower motor via the terminal box

Connection diagram



U V W Power connection

#### Standardized blower motor for radial ventilation

$\Delta/Y$  200-265V / 345-460V 50 // 60Hz

## Three-phase synchronous motors DSD2-028-132

Size	Power [kW]	Rated current [A]	Blower/	Rated input power [kW]	Volume flow rate [m³/min]	Stat. pressure [Pa]	Speed [1/min]	Spez. ratio
132	0.2 // 0.3	0.91 / 0.52 // 1.4 / 0.8	FCA 63B-2	0.36	11.5	599	2790	1

Δ/Y 265-345V / 460-600V 50 // 60Hz

Size	Power [kW]	Rated current [A]	Blower/	Rated input power [kW]	Volume flow rate [m³/min]	Stat. pressure [Pa]	Speed [1/min]	Spez. ratio
132	0.2 // 0.3	0.96 / 0.4 // 1.03 / 0.59	FCA 63B-2	0.36	11.5	599	2790	1

The rated currents are maximum values.

### Standardized blower motor for axial ventilation

Δ/Y 200-265V / 345-460V 50 // 60Hz

Size	Power [kW]	Rated current [A]	Blower/	Rated input power [kW]	Volume flow rate [m³/min]	Stat. pressure [Pa]	Speed [1/min]	Spez. ratio
132	0,08 // 0,12	0,4 / 0,23 // 0,61 / 0,35	FCA 56A-2	0,16	5,15	514	2800	1

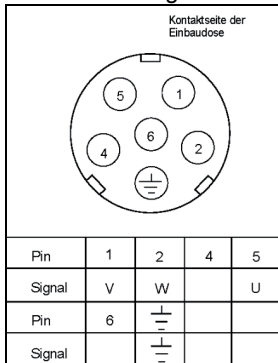
Δ/Y 265-345V / 460-600V 50 // 60Hz

Size	Power [kW]	Rated current [A]	Blower/	Rated input power [kW]	Volume flow rate [m³/min]	Stat. pressure [Pa]	Speed [1/min]	Spez. ratio
132	0,08 // 0,12	0,3/ 0,18 // 0,46 / 0,26	FCA 56A-2	0,16	5,15	514	2800	1

The rated currents are maximum values.

### Fan connector at axial integrated blower

Connection diagram



Y 400V // 460V 50 // 60Hz

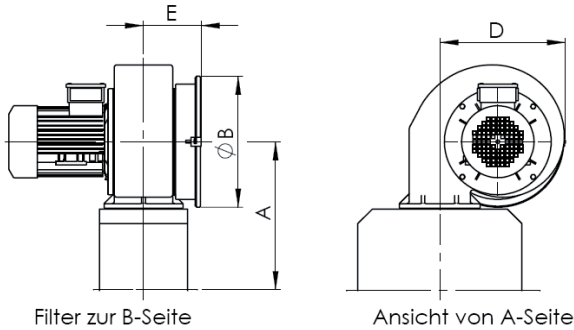
Size	Power [kW]	Rated current [A]
132	0,47 // 0,54	0,7 // 0,75

The rated currents are maximum values.

### 3.9. Filter

#### Flat filter for DSD2-132..R

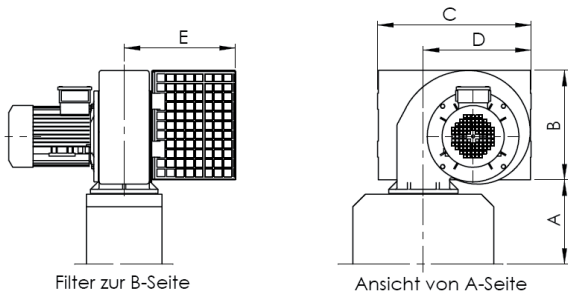
Dimensions at the fan on the top or at the side



Motor size	Fan type	A	Ø B	D	E
132	BFB 519	264	210	214	105

#### Rectangle filter for DSD2-132..R

Dimensions at the fan on the top or at the side

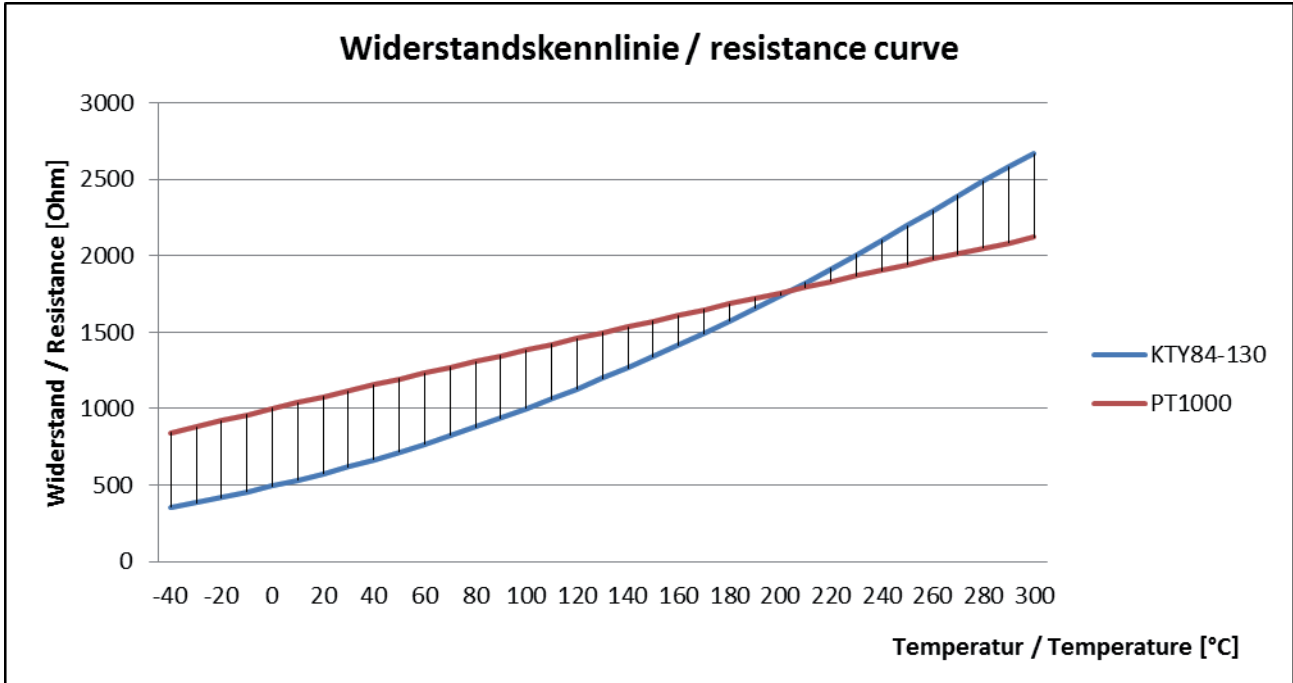


Motor size	Fan type	A	B	C	D	E
132	BFB 519	17 5	20 7	30 6	21 3	16 3

**Note:** At IP54 motors the filter mat rough is preferred.

### 3.10. Temperature sensor

The connection of the temperature sensor of the DSD2 series is implemented via the main connection. An option is the connection at the DSD2-028-100 via the encoder socket. The particular version must be marked in the ordering code.



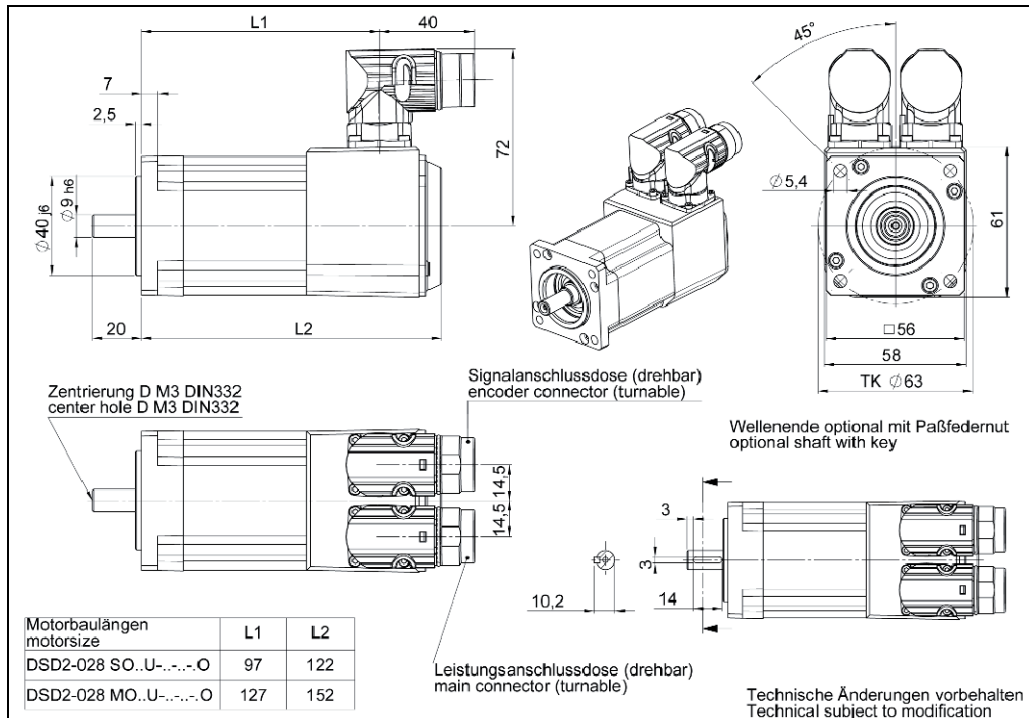
The temperature sensor PT1000 continuously monitors the motor temperature. If the sensor is supplied with a measured current of 2 mA the above shown resistance curve results.

## 4. Dimension drawings

### 4.1. Dimension drawings DSD2-028

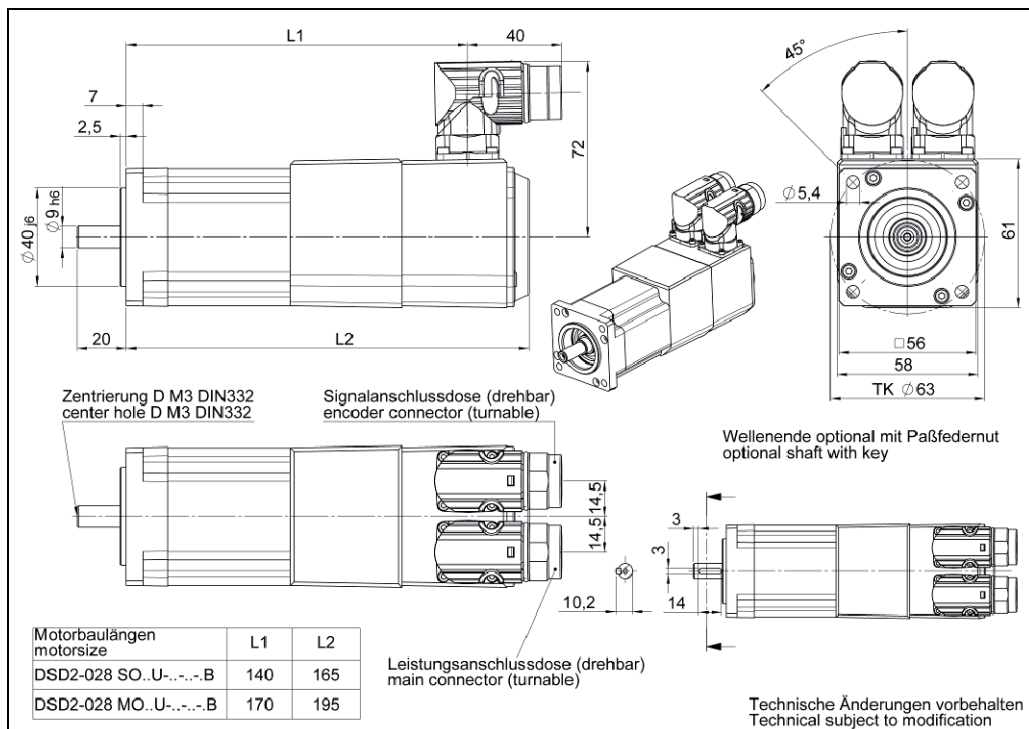
#### Dimension drawing DSD2-028...U-...-O.-SPP-...-O-000

Version IM B5



#### Dimension drawing DSD2-028...U-...-B.-SPP-...-O-000

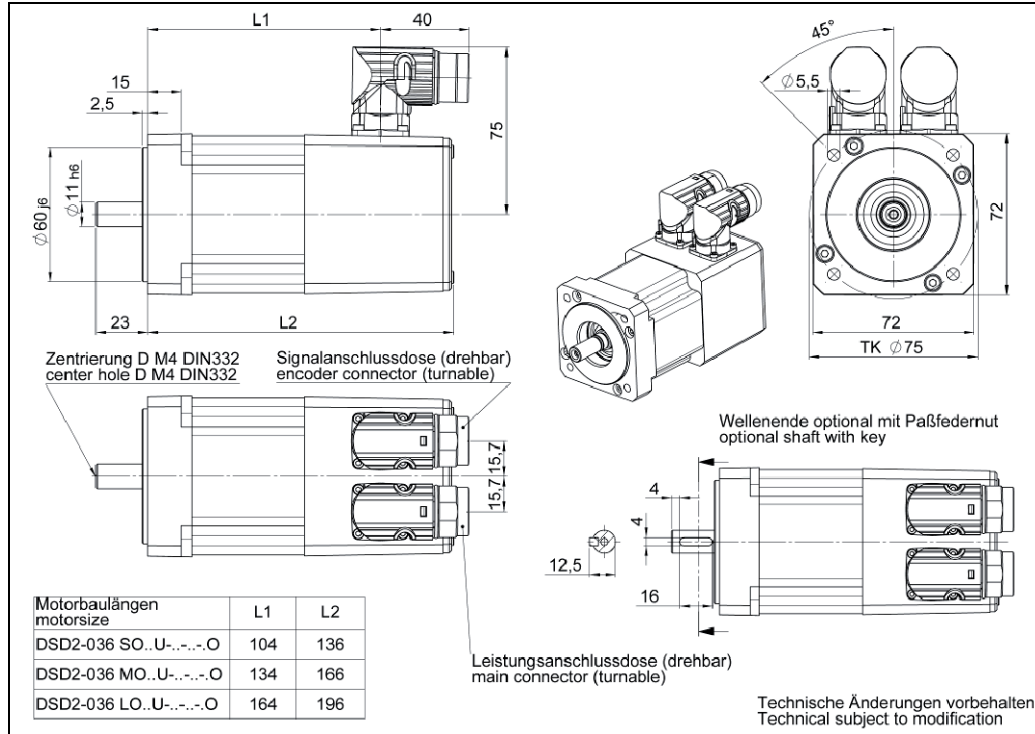
Version IM B5



## 4.2. Dimension drawings DSD2-036

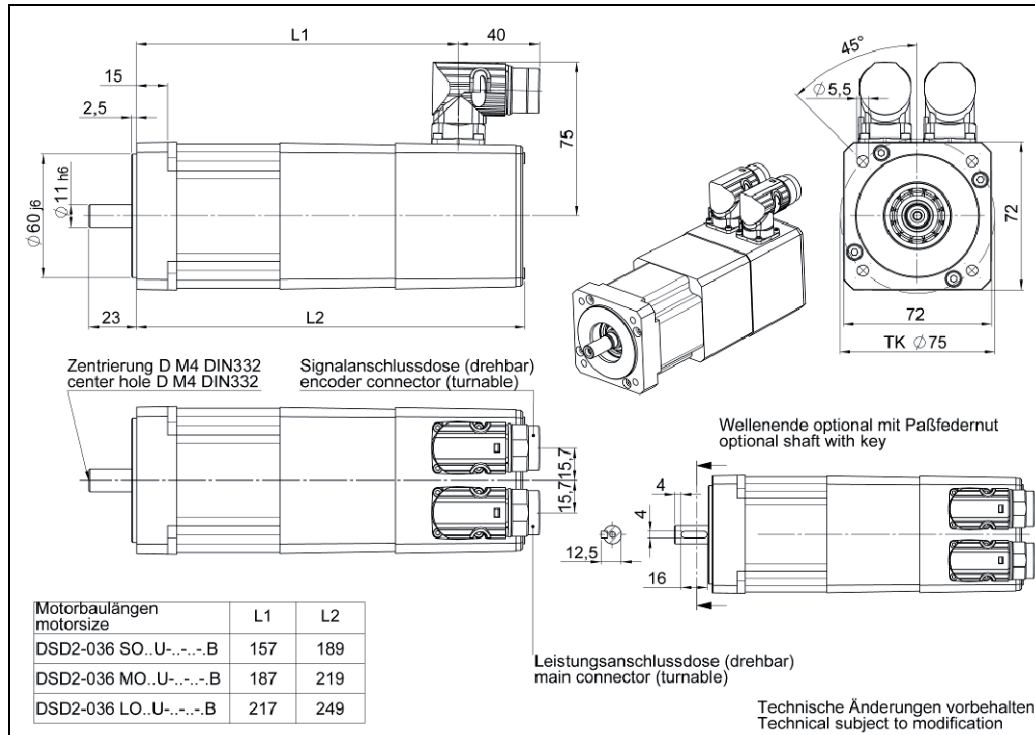
### Dimension drawing DSD2-036...U-...-O.-SPP-...-O-000

Version IM B5



### Dimension drawing DSD2-036...U-...-B.-SPP-...-O-000

Version IM B5

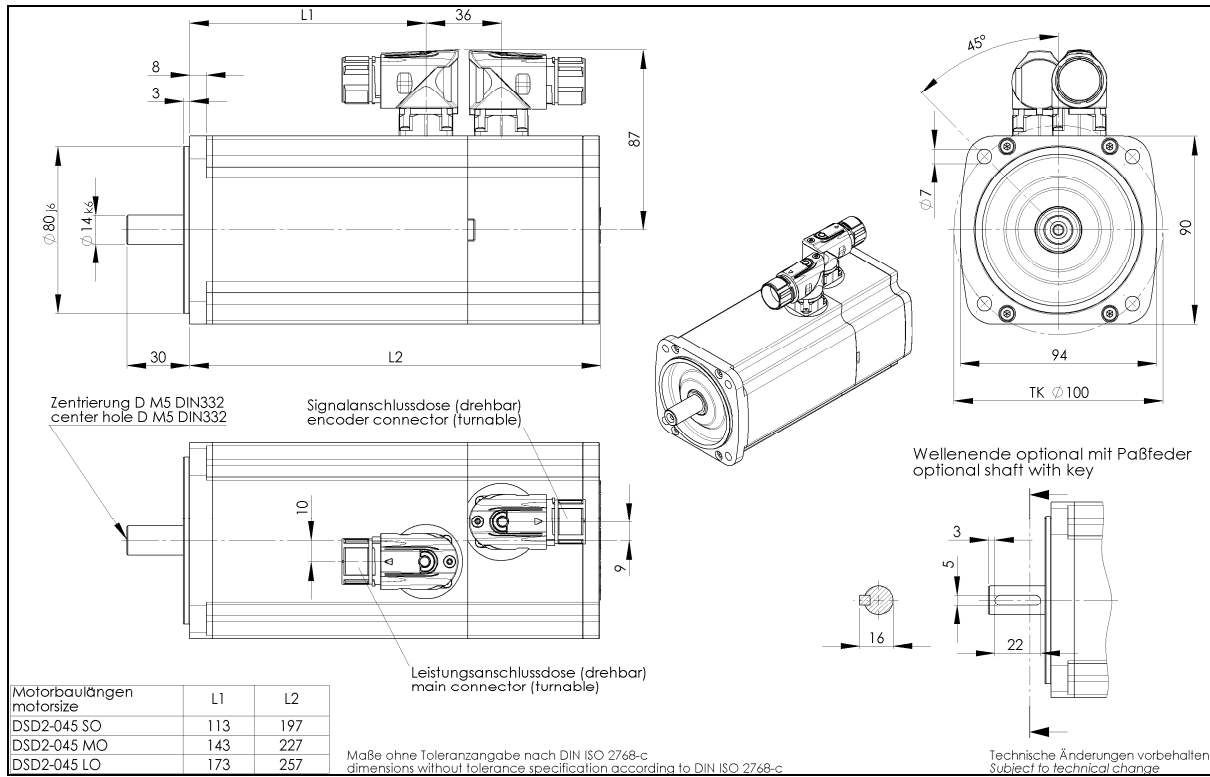




### 4.3. Dimension drawings DSD2-045

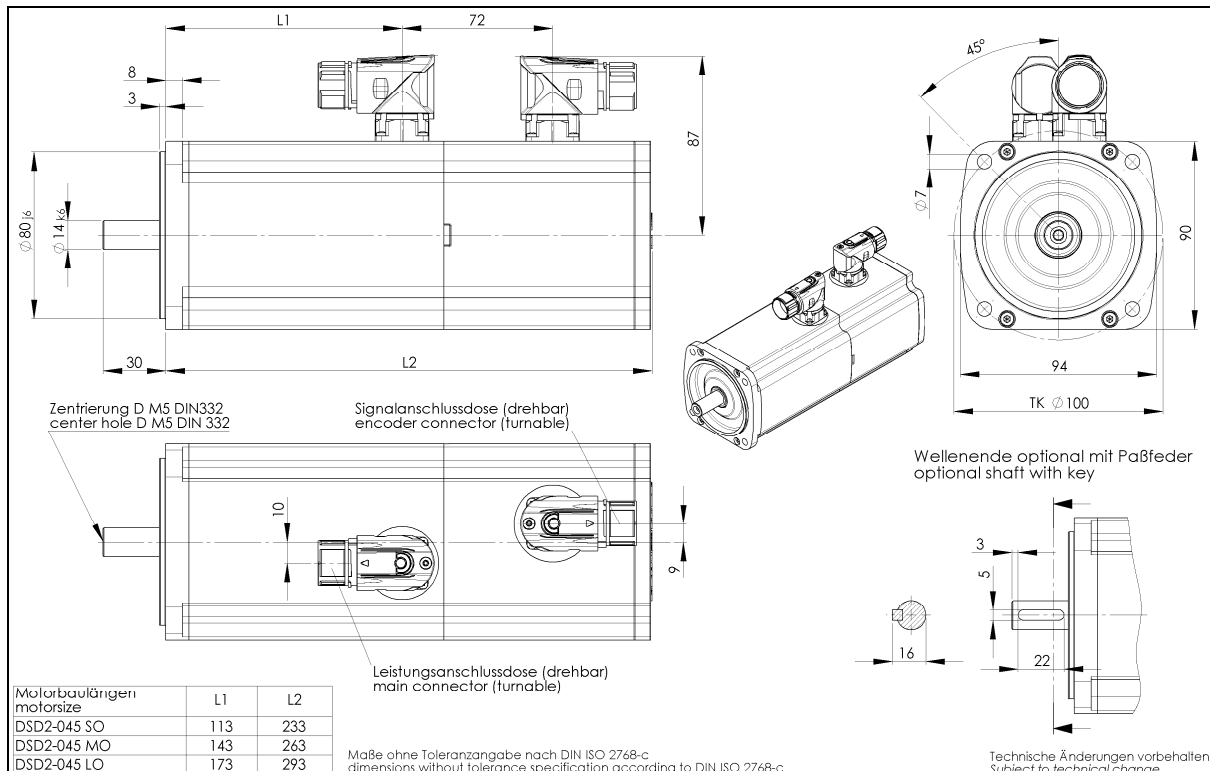
#### Dimension drawing DSD2-045...U-...-O.-SPP-...-O-000

Version IM B5



#### Dimension drawing DSD2-045...U-...-B.-SPP-...-O-000

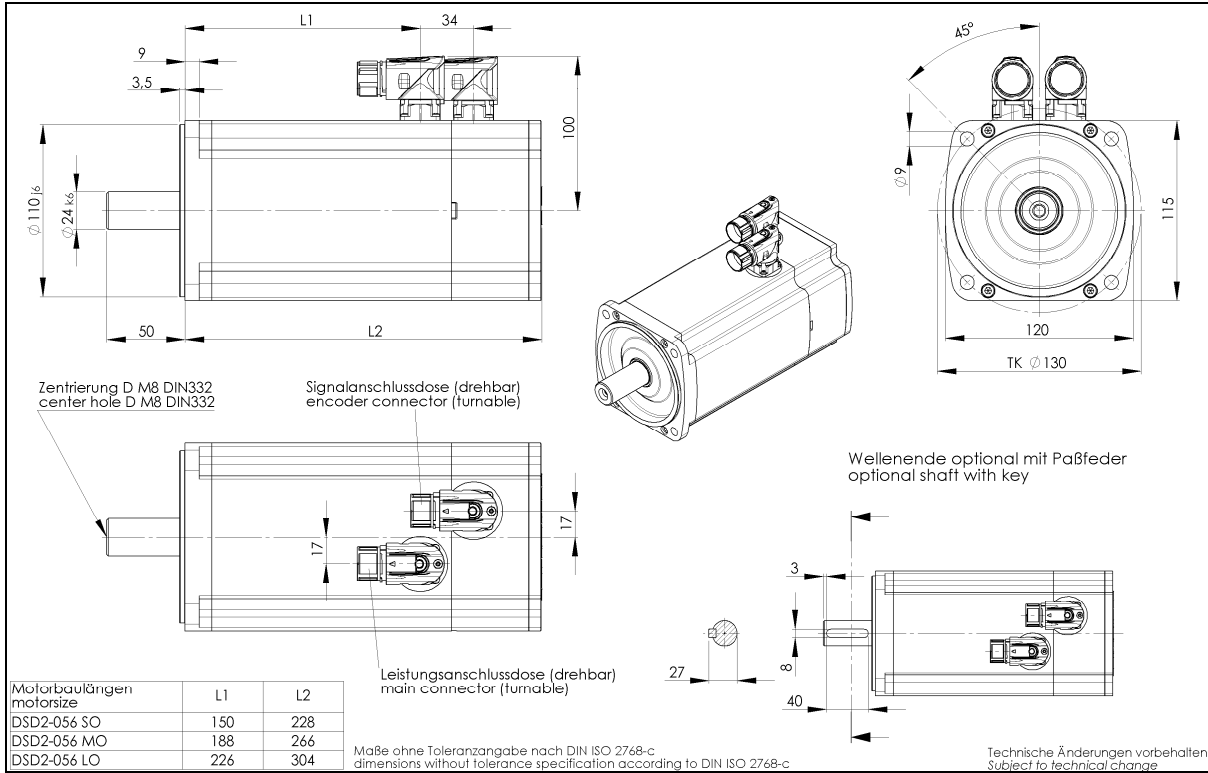
Version IM B5



### 4.4. Dimension drawings DSD2-056

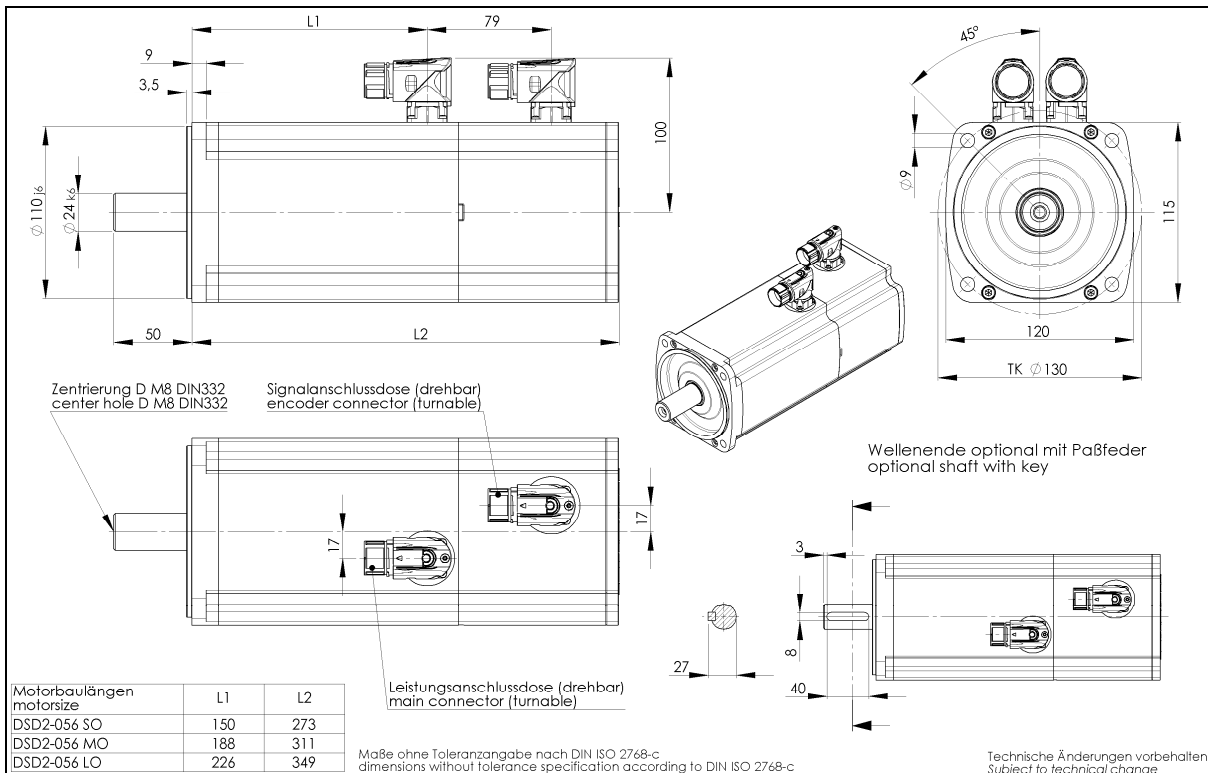
#### Dimension drawing DSD2-056....U-....-O.-SPP-....-O-000

Version IM B5

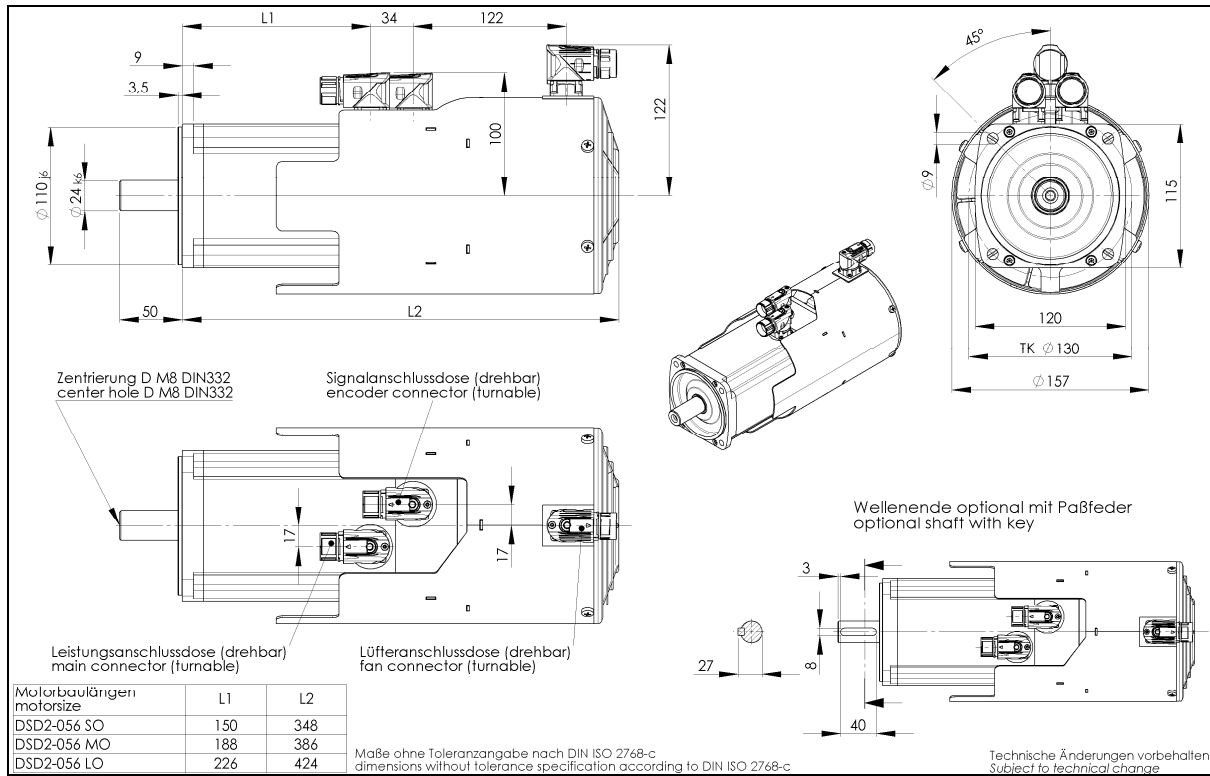


#### Dimension drawing DSD2-056....U-....-B.-SPP-....-O-000

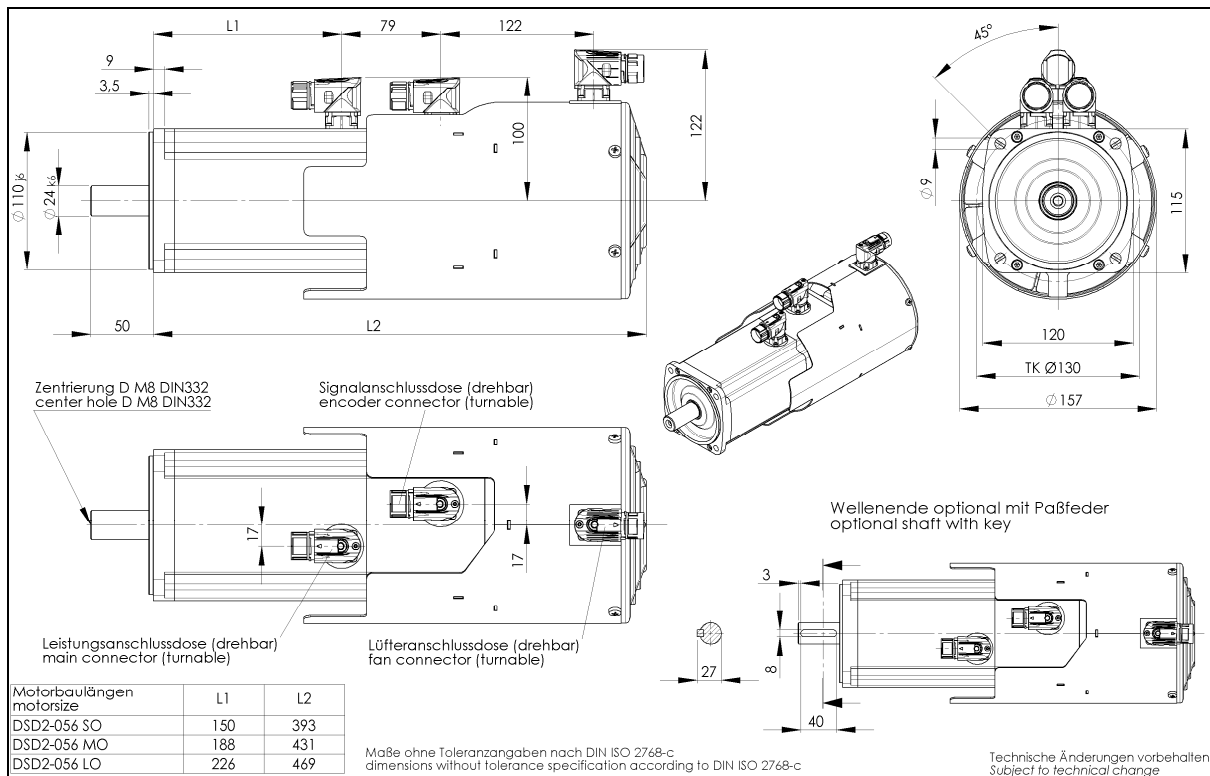
Version IM B5



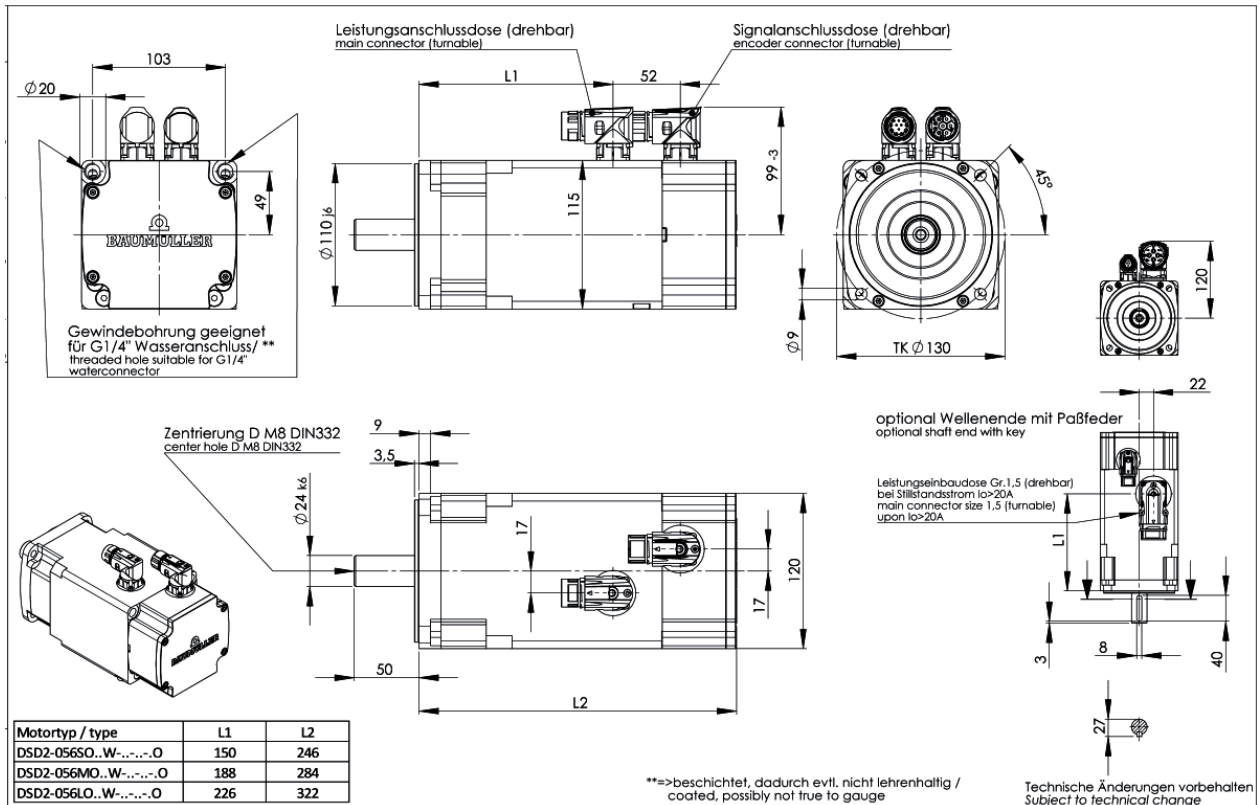
**Dimension drawing DSD2-056...O-...-O-SPP-...-O-000**  
Version IM B5



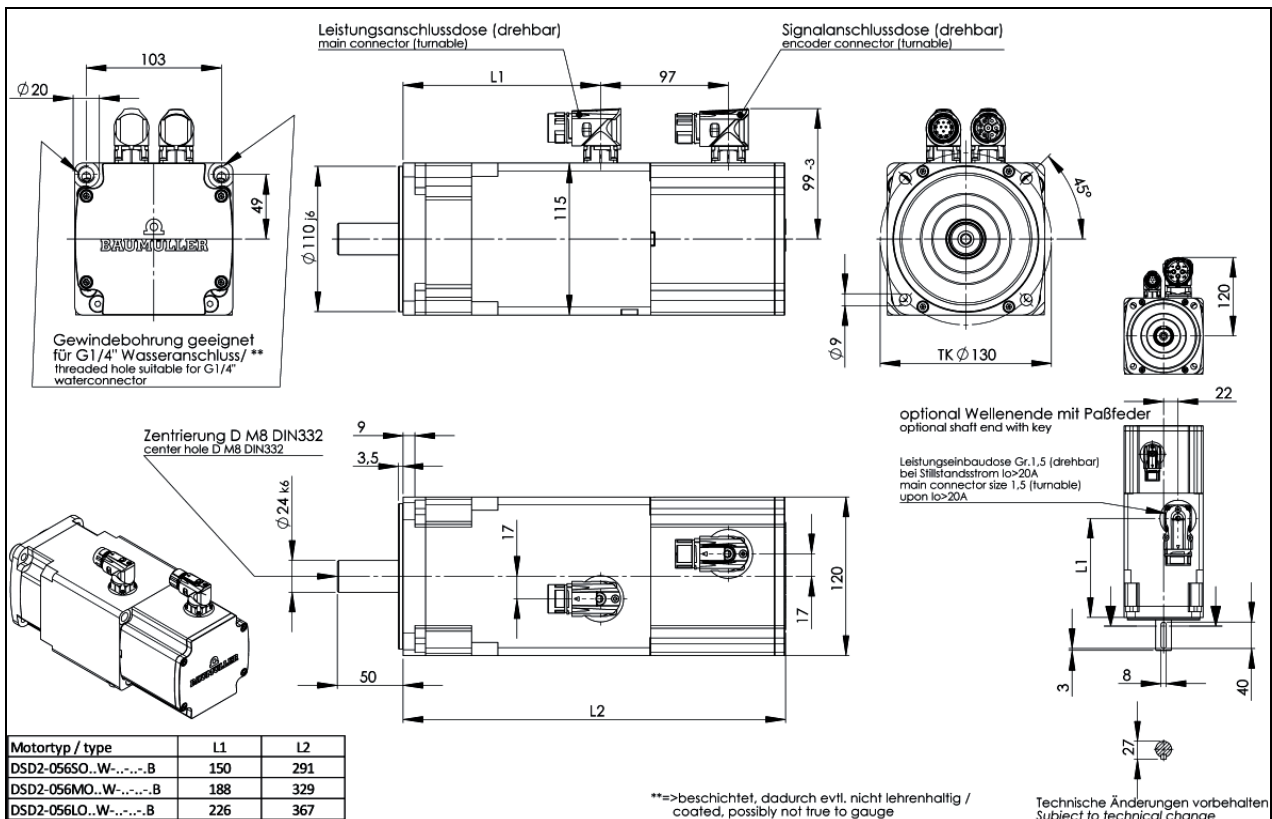
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Version IM B5



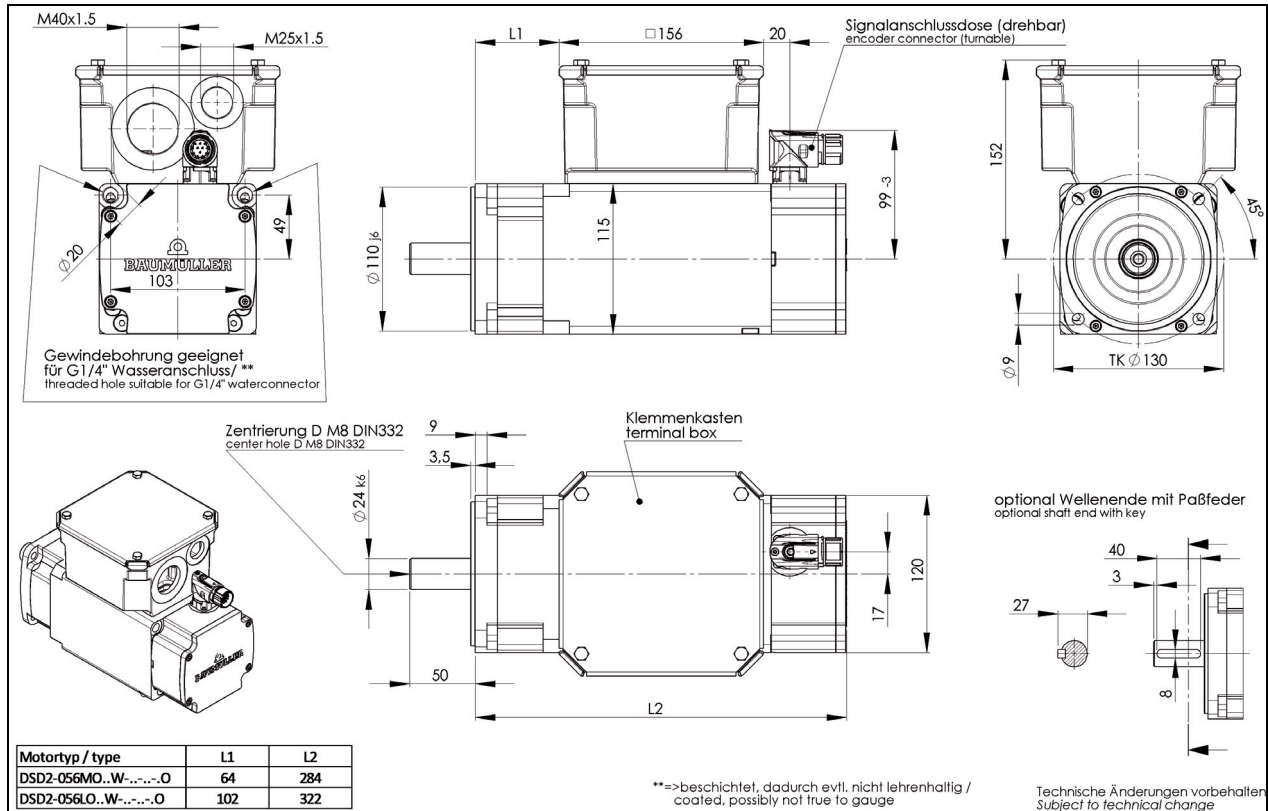
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Version IM B5



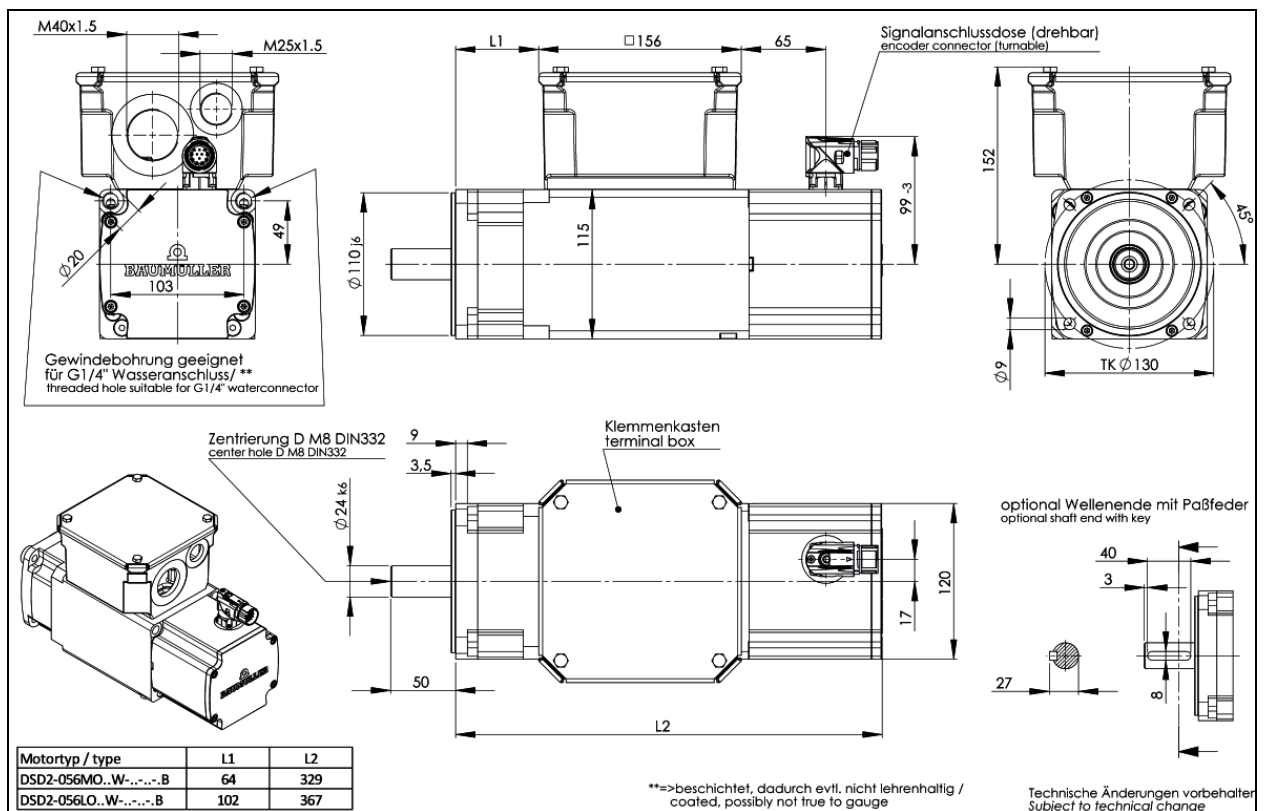
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Version IM B5



**Dimension drawing DSD2-056....W-....O.-NP-....O-000**  
Version IM B5



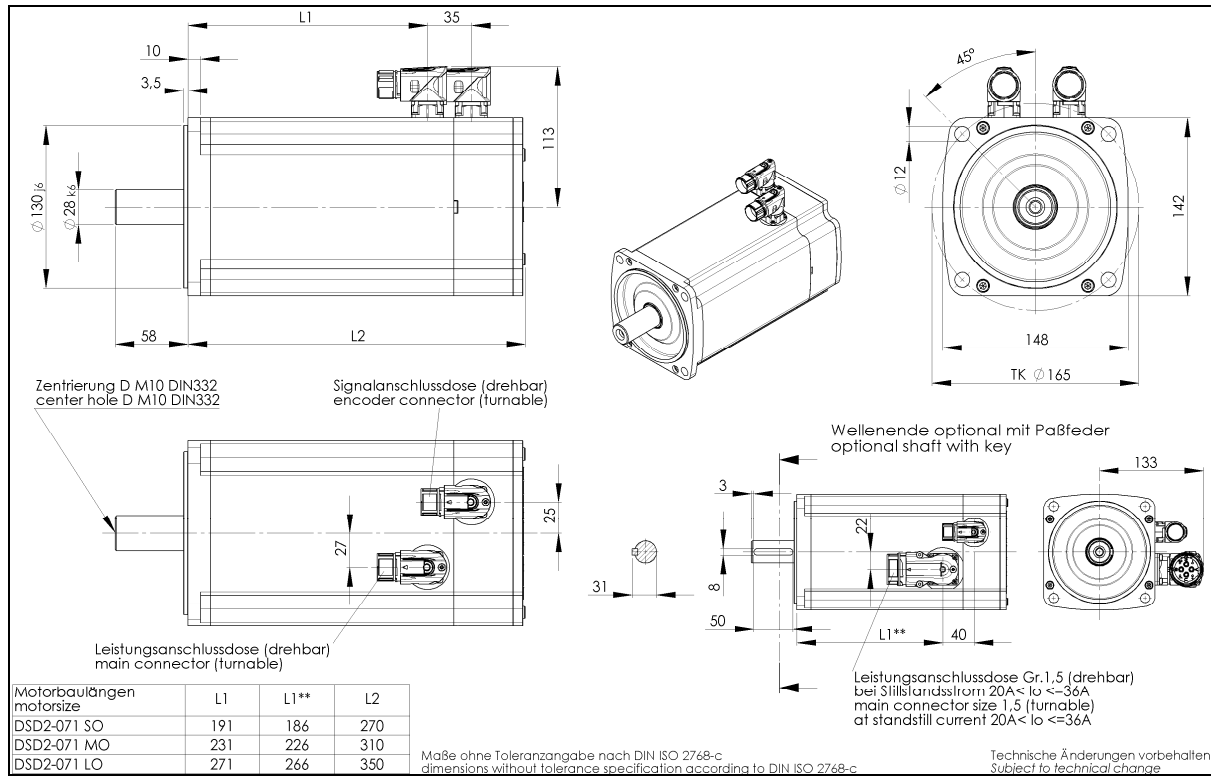
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Version IM B5



### 4.5. Dimension drawings DSD2-071

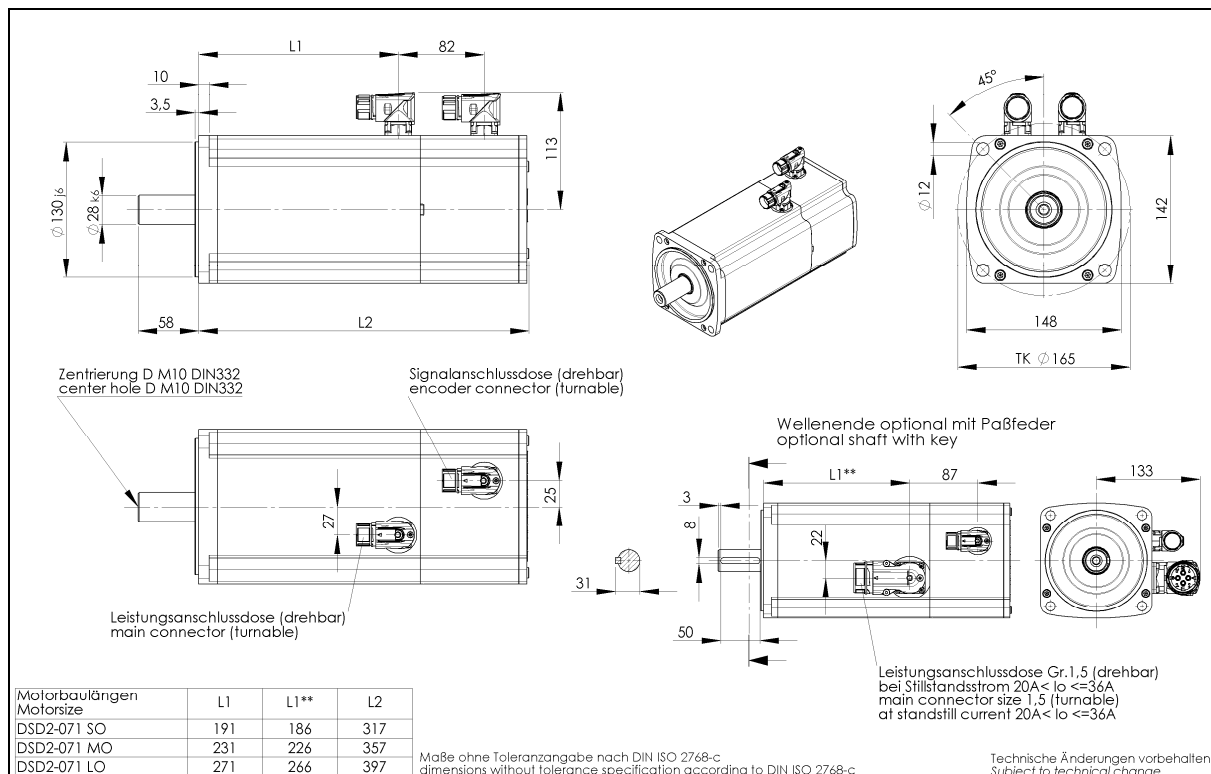
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Version IM B5

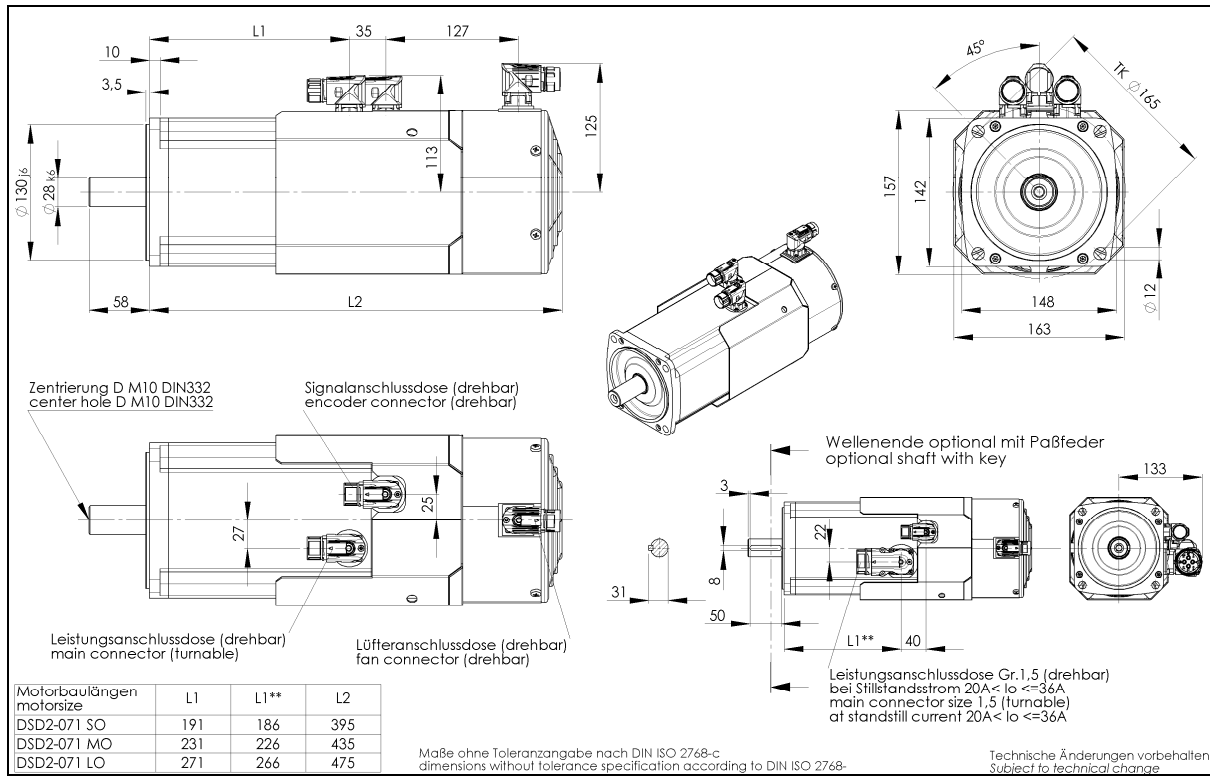


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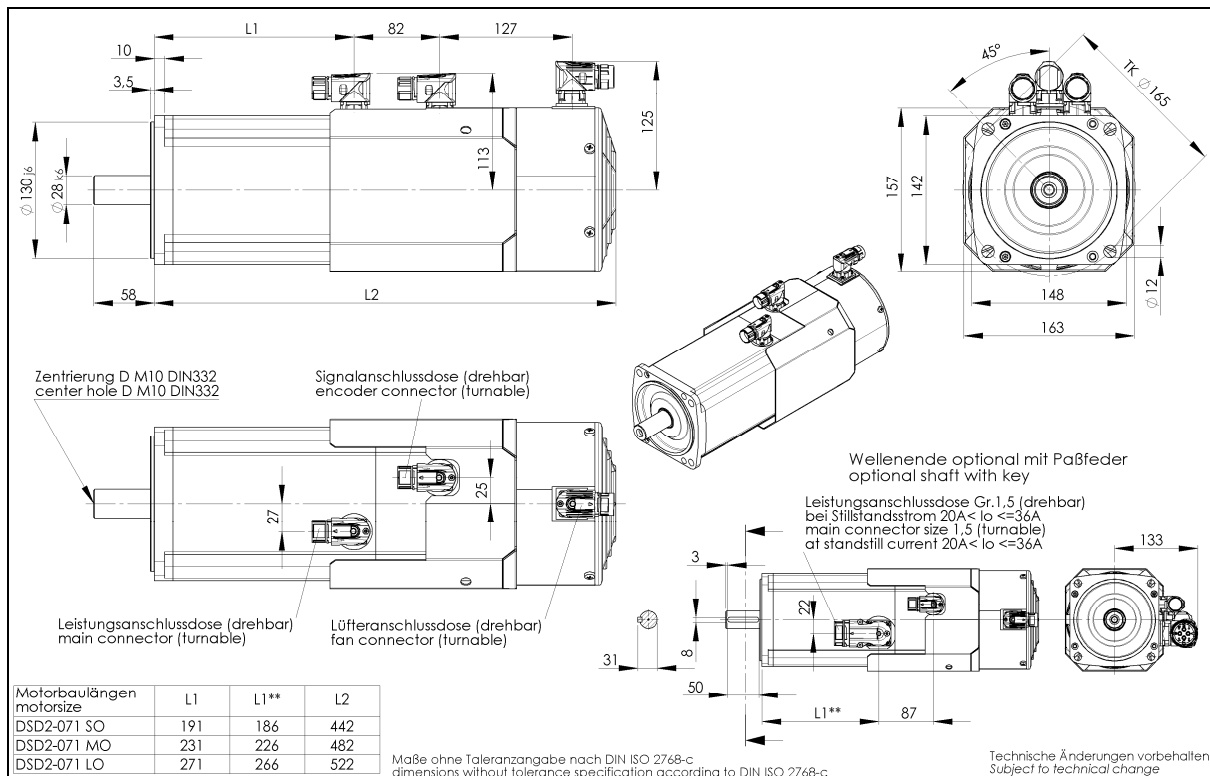
Version IM B5



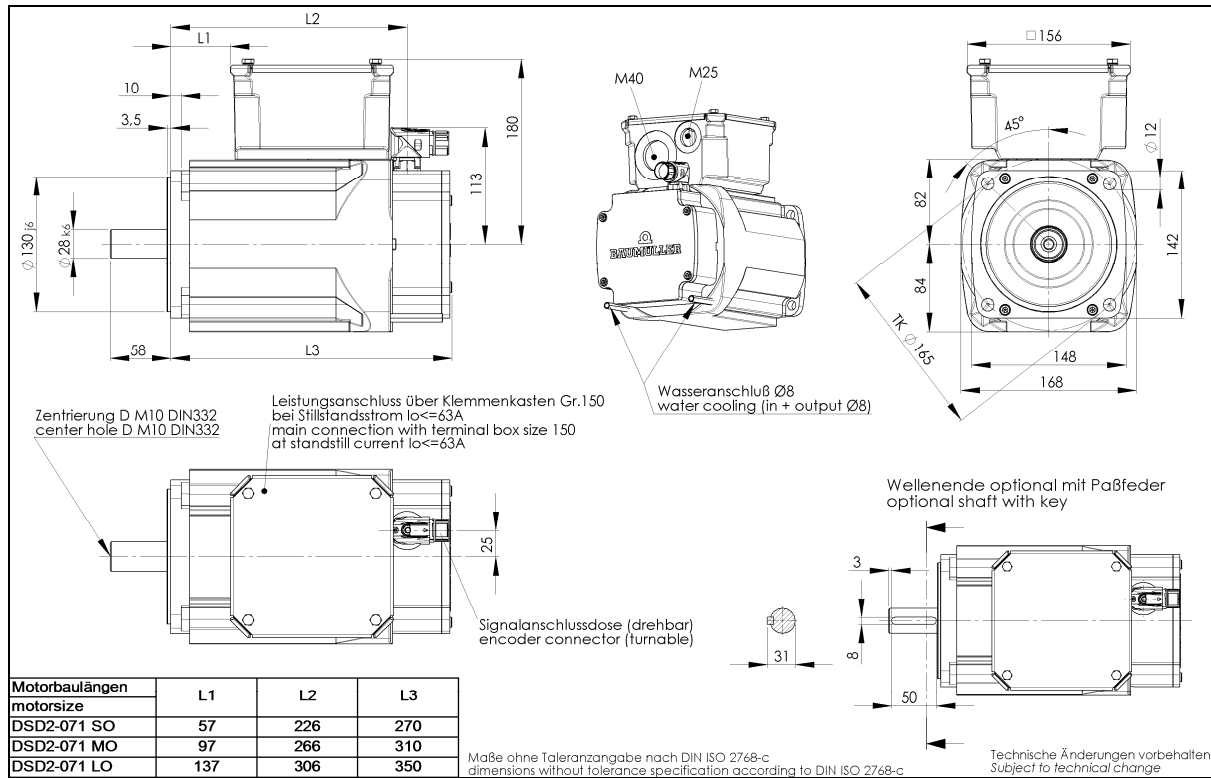
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Version IM B5



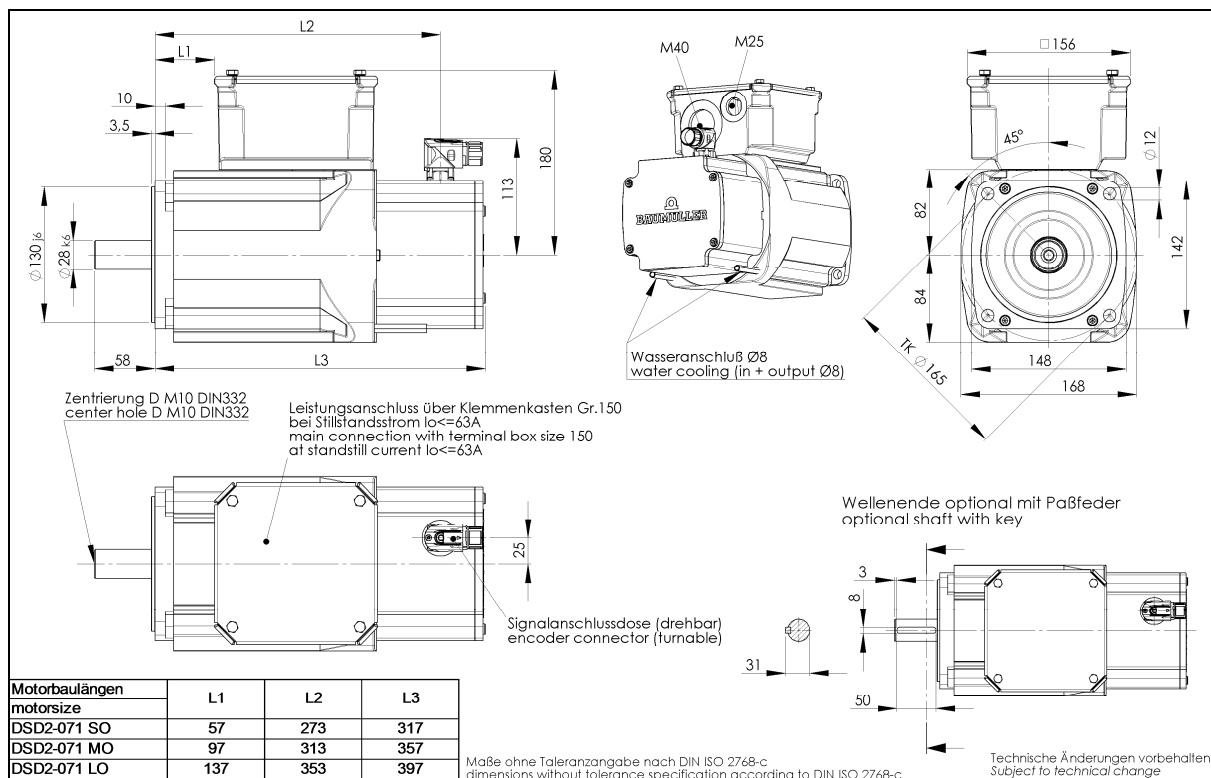
**Dimension drawing DSD2-071....O-.....B-SPP-....O-000**  
Version IM B5



**Dimension drawing DSD2-071....W-....O.-KNP-....O-000**  
Version IM B5



**Dimension drawing DSD2-071....W-....B.-KNP-....O-000**  
Version IM B5

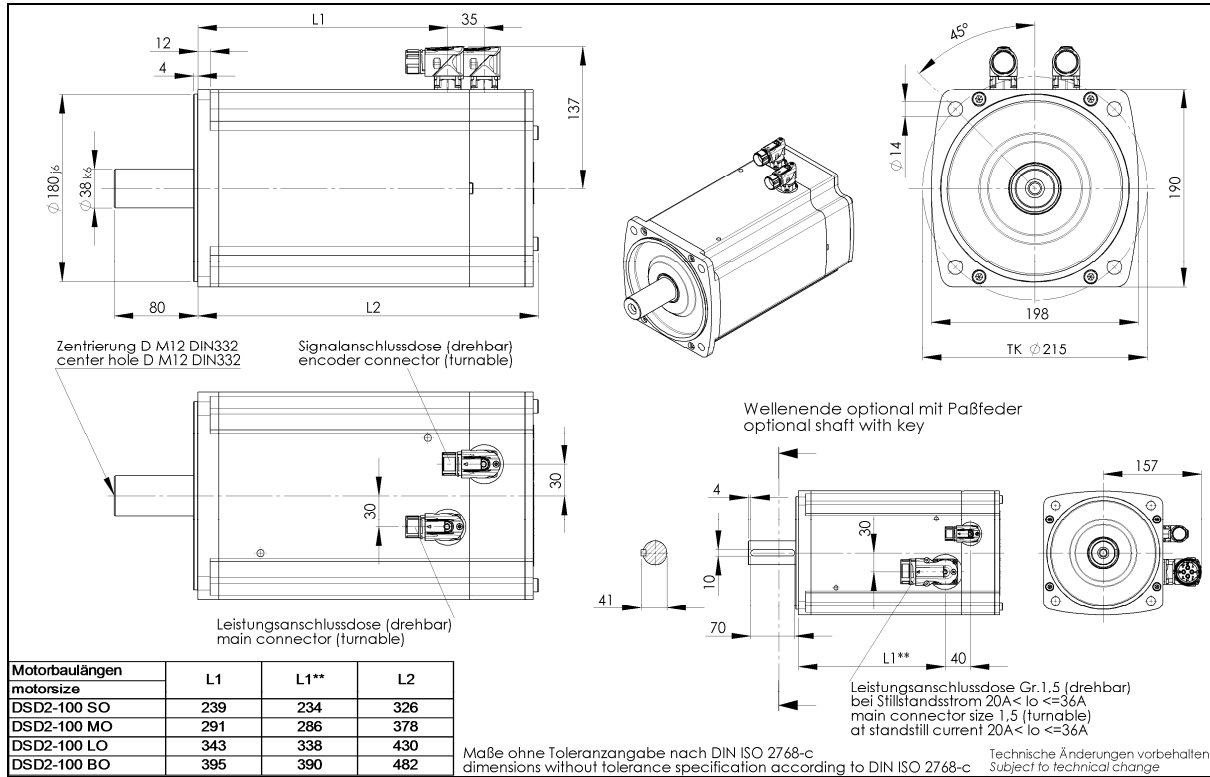




### 4.6. Dimension drawings DSD2-100

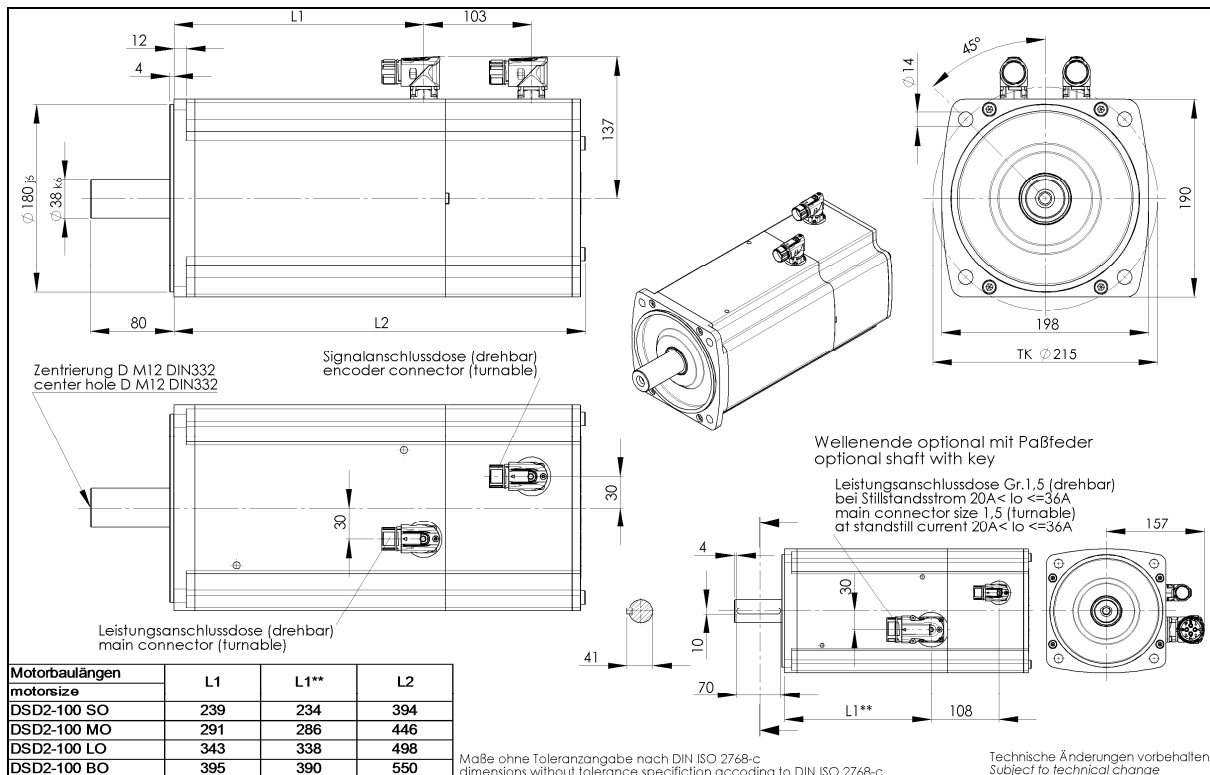
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Version IM B5

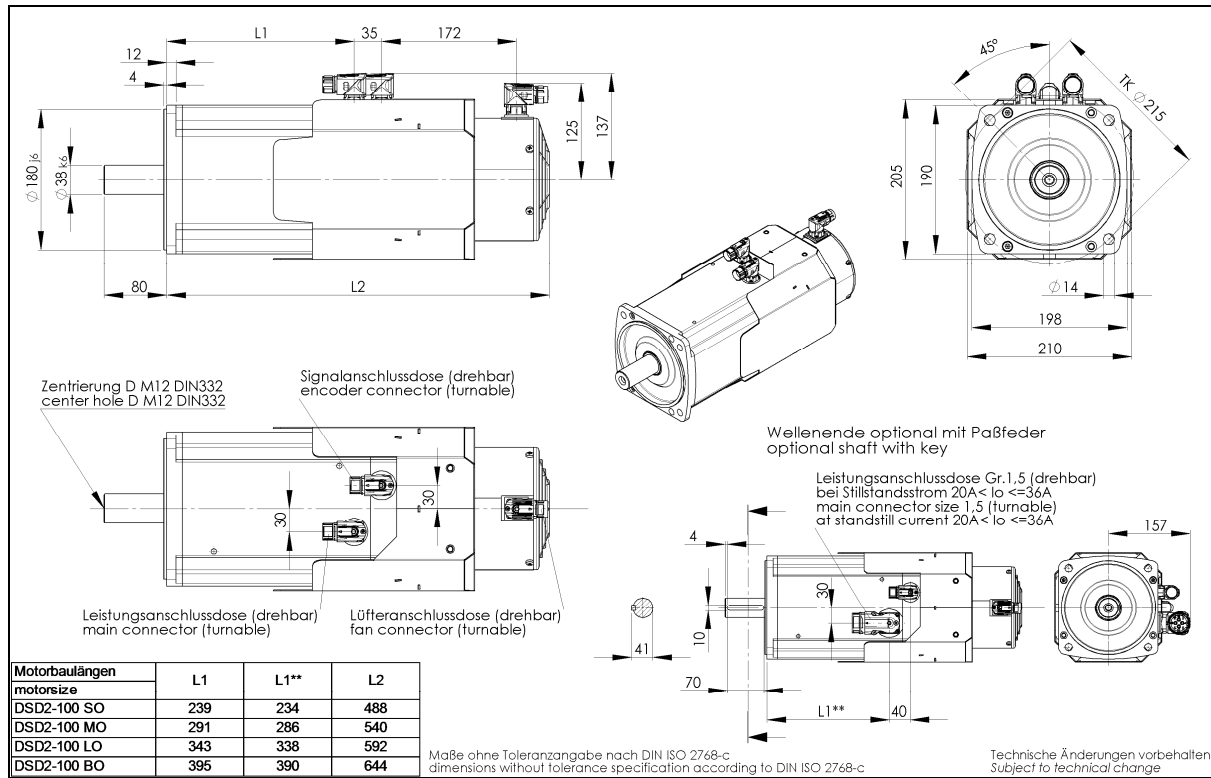


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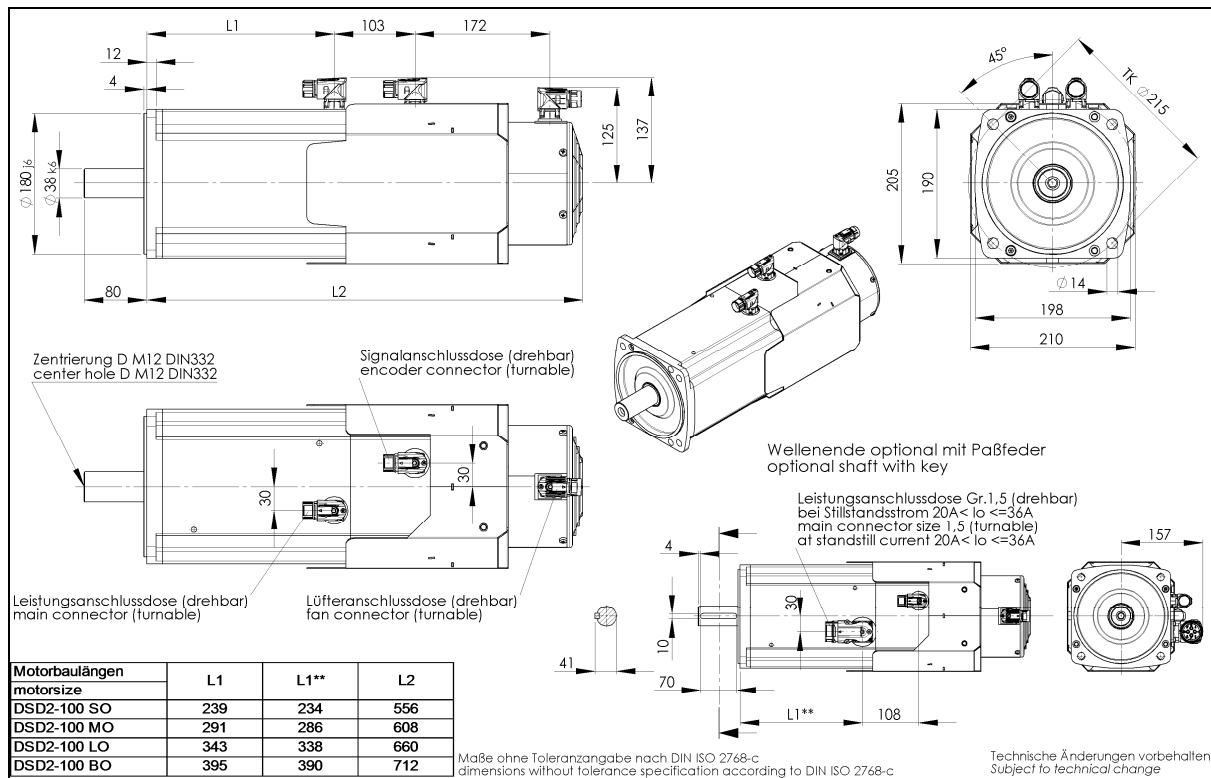
Version IM B5



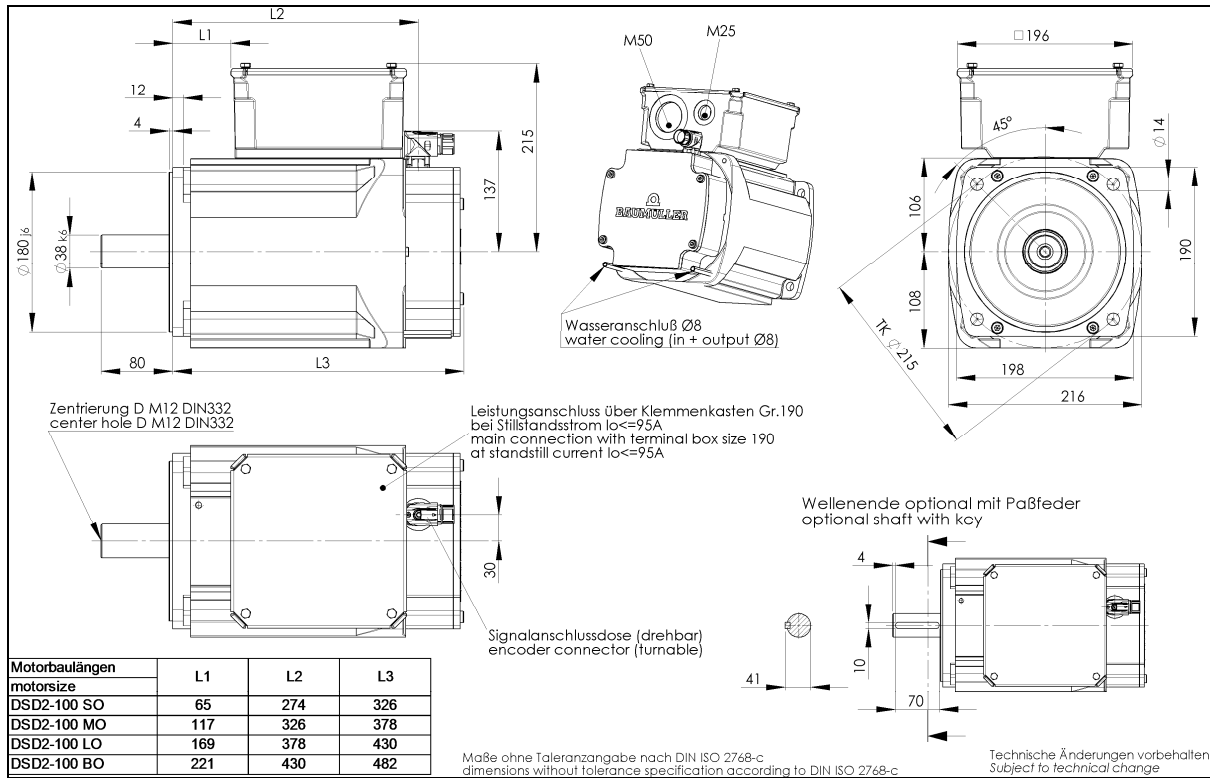
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Version IM B5



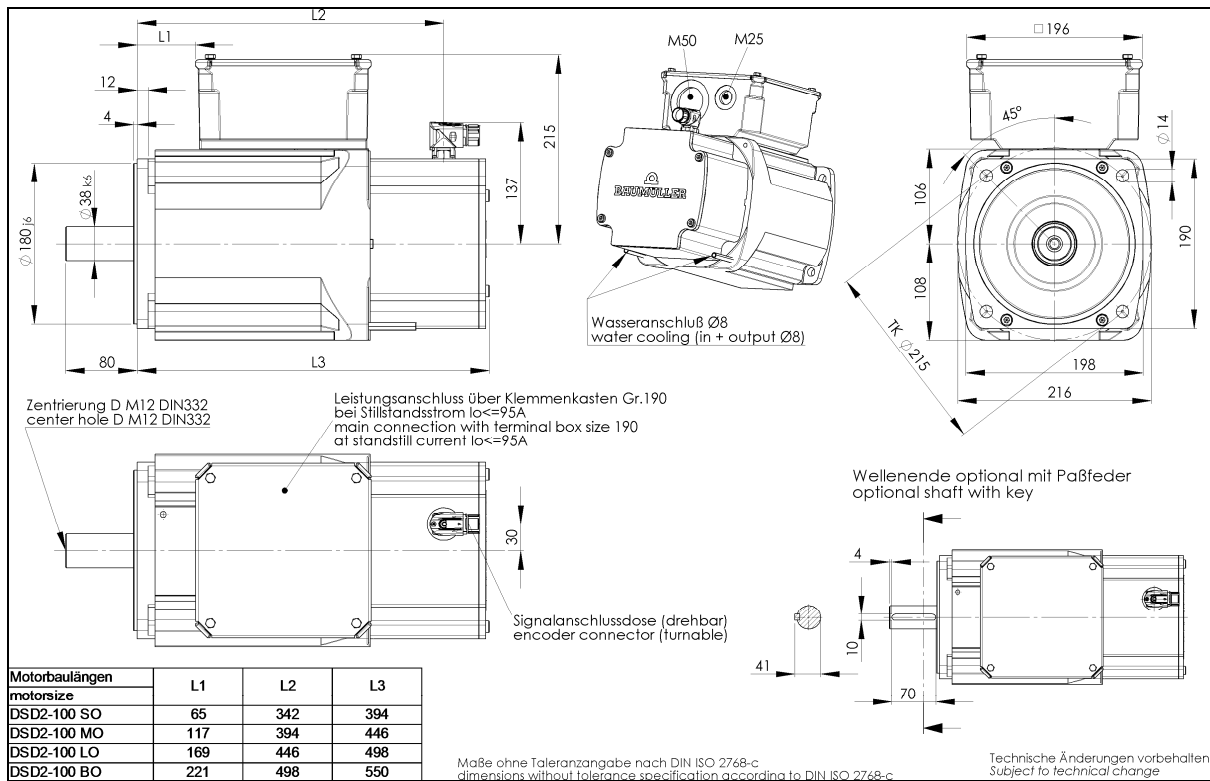
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Version IM B5



Dimension drawing DSD2-100...W-...-O.-KNP-...-O-000  
Version IM B5

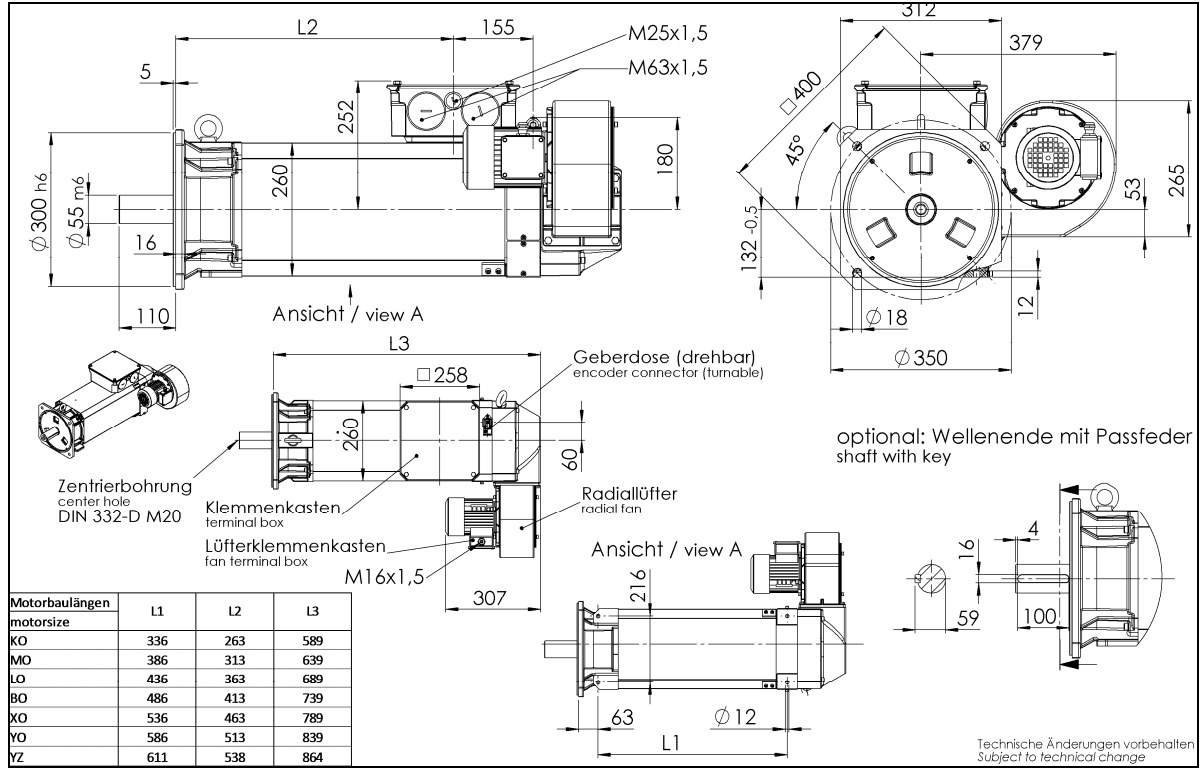


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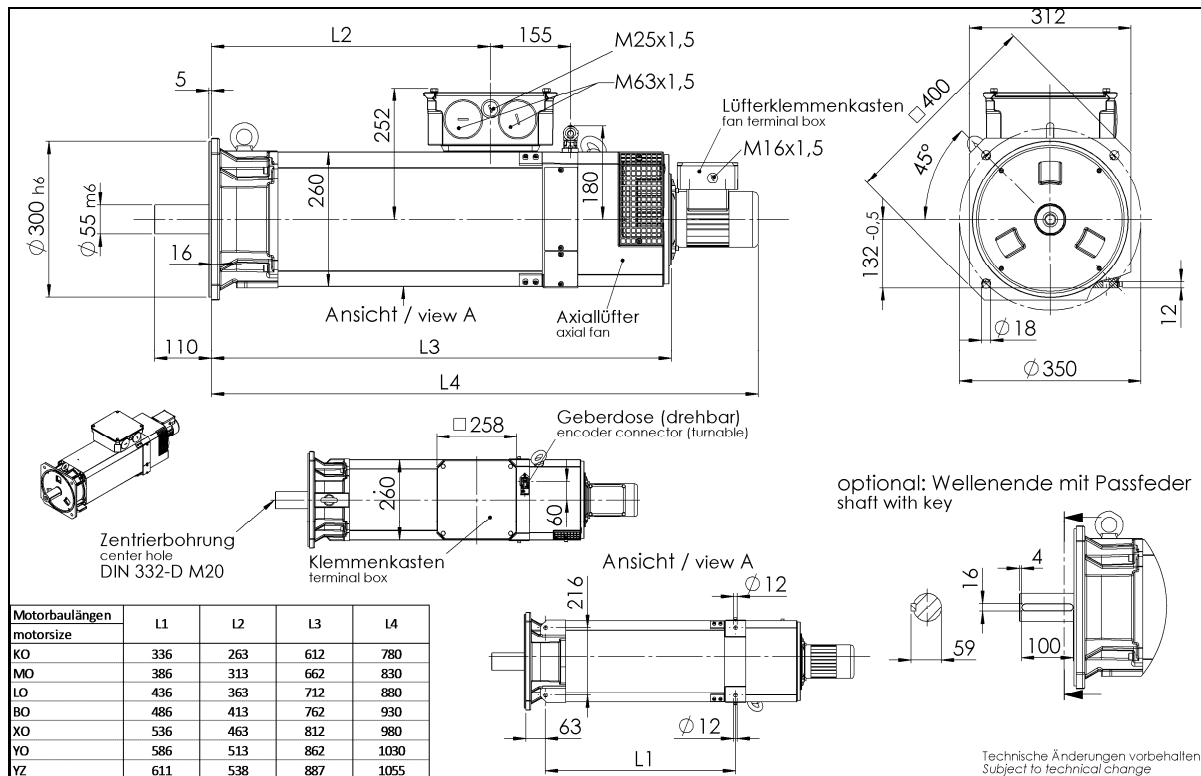


4.7. Dimension drawings DSD2-132

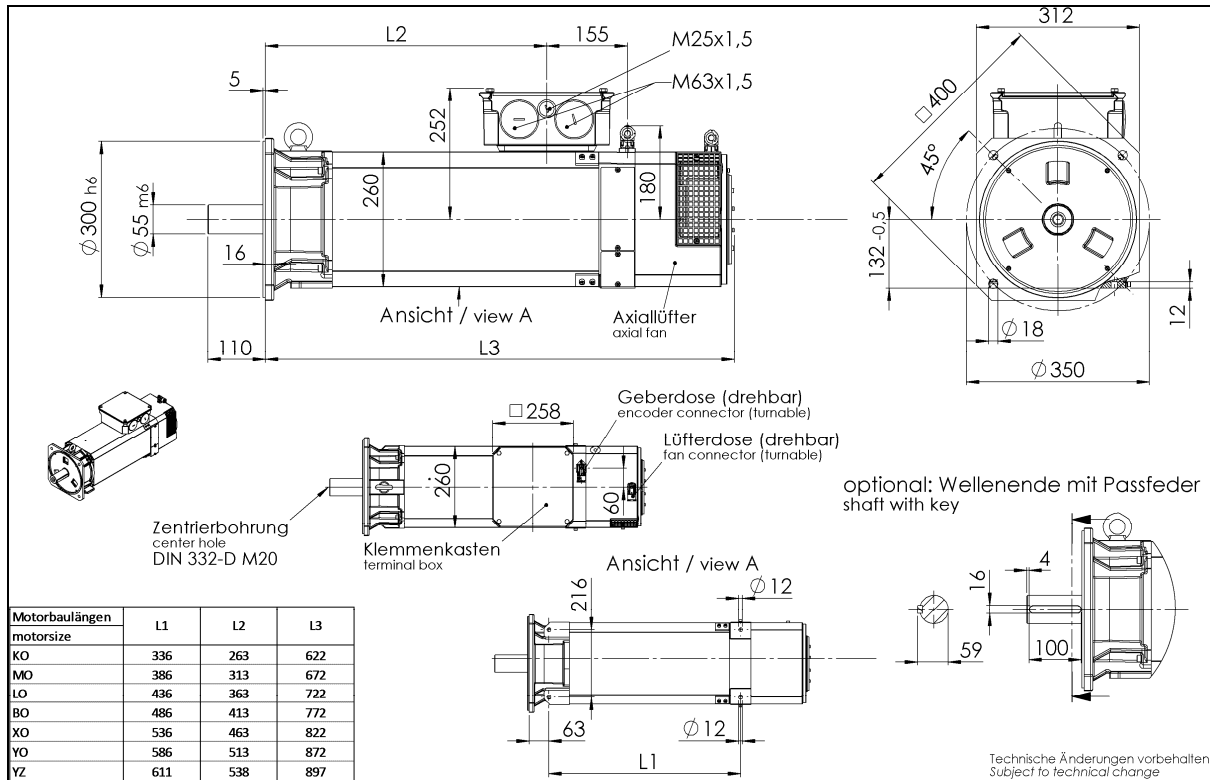
Dimension drawing DSD2-132....R-...-O-8-KTR-...-R.O-000  
Version IM B35



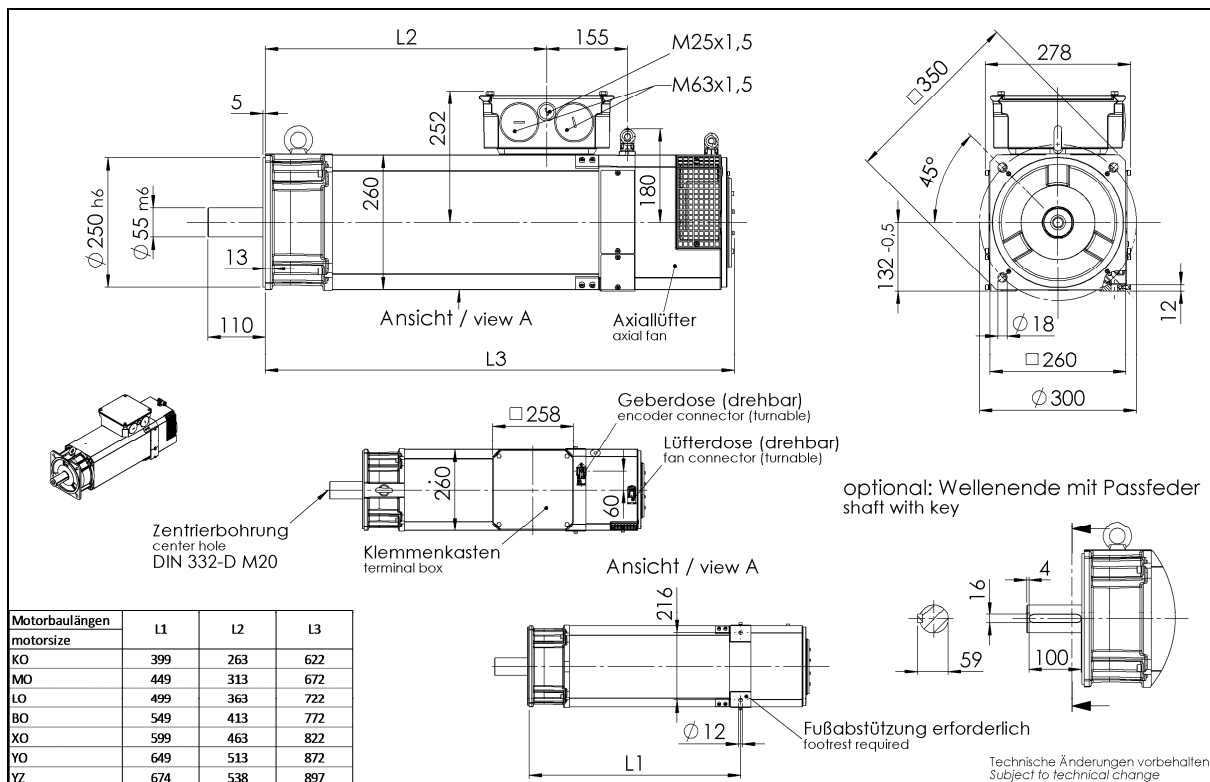
Dimension drawing DSD2-132....A-...-O-8-KTR-...-A.O-000  
Version IM B35



Dimension drawing DSD2-132....I-...-O-8-KTR-...-A.O-000\*  
Version IM B35

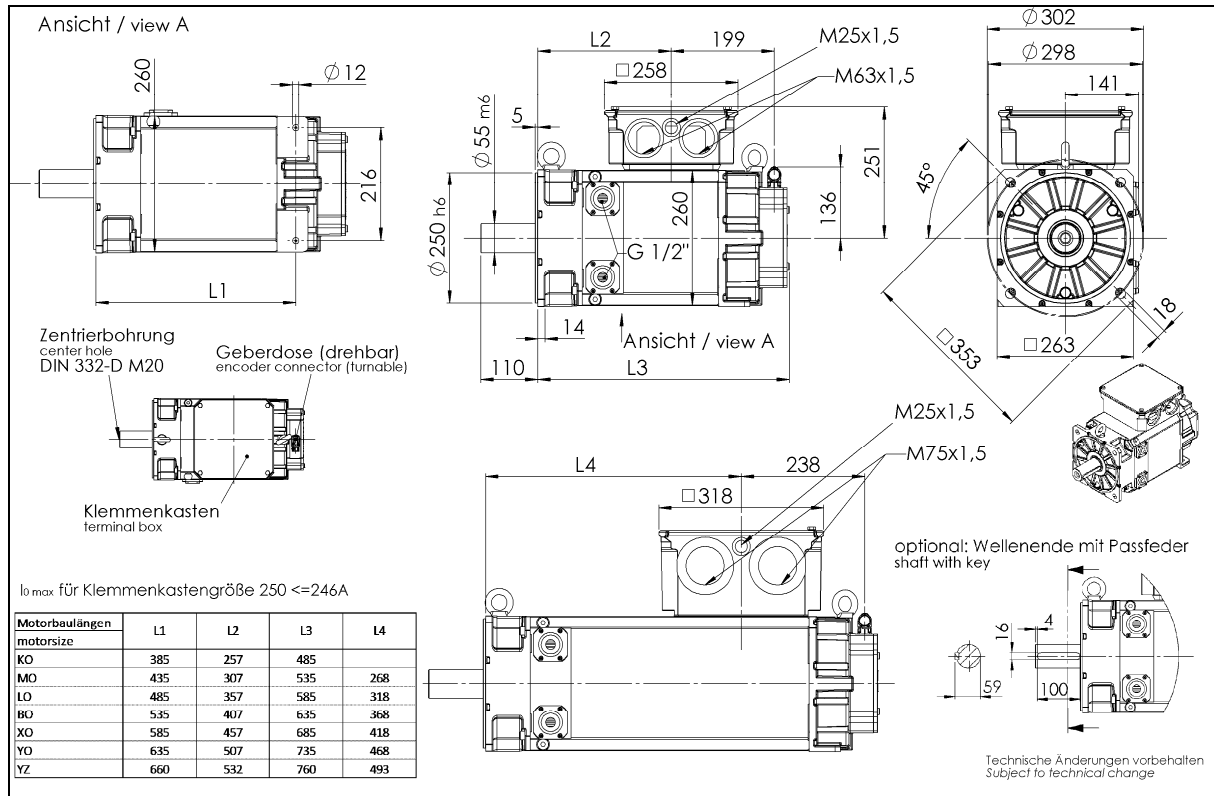


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Version IM B35



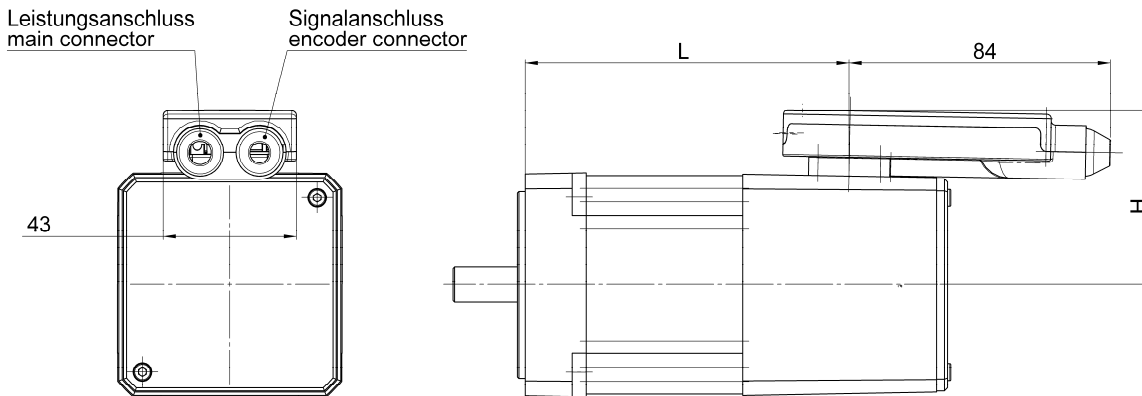
\* auf Anfrage verfügbar

Dimension drawing DSD2-132....W-....O-7-KTR-...-A-O-000  
Version IM B35



## 4.8. Terminal box dimensions

### 4.8.1. Terminal box dimensions DSD2-028-036



Motor size	L	H
DSD2-028SO	97	56
DSD2-028MO	127	56

DSD2-036SO	104	58
DSD2-036MO	134	58
DSD2-036LO	164	58

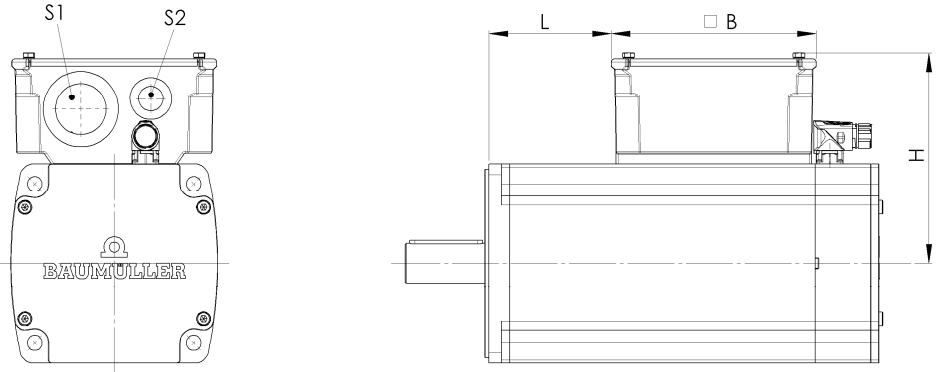
The terminal box can be mounted turned in steps of 90°. The discharge direction of the main and sensor connections is to be marked in the order index.

**NOTE:**

The connection allocation of the terminal box is not identical with the allocations of the sensor and main connection allocations described in this documentation. The connection allocation of the terminal box is available on request.

4.8.2. Terminal box dimensions DSD2-071-100

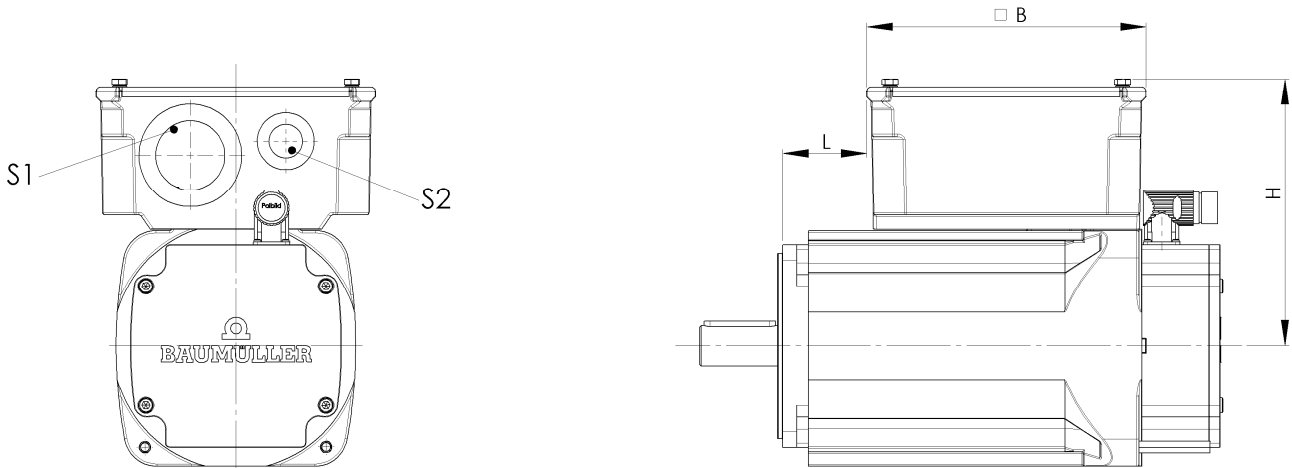
A terminal box must be used if  $I_0 > 36$  A. The outlet direction of the main connection is at the B side.



Motor Length	L	B	H	S1	S2	$I_0$
DSD2-071SO	57	156	170	M40	M25	$\leq 63$ A
DSD2-071MO	97	156	170	M40	M25	$\leq 63$ A
DSD2-071LO	137	156	170	M40	M25	$\leq 63$ A

DSD2-100SO	65	196	205	M50	M25	$\leq 95$ A
DSD2-100MO	117	196	205	M50	M25	$\leq 95$ A
DSD2-100LO	169	196	205	M50	M25	$\leq 95$ A
DSD2-100BO	221	196	205	M50	M25	$\leq 95$ A

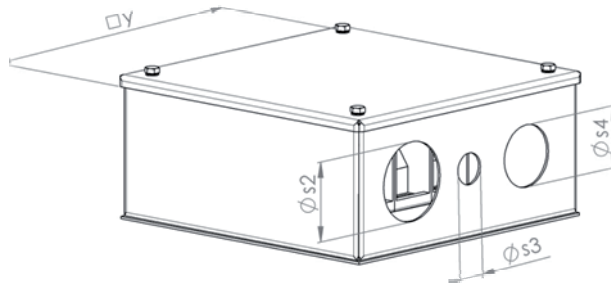
In a water cooled DSD2-71 with an  $I_0 > 63$  A the following terminal box has to be used. The discharge direction of the main connection is the N-side.



Motor Length	L	B	H	S1	S2	$I_0$
DSD2-071MO	59	196	190	M50	M25	$\leq 95$ A
DSD2-071LO	99	196	190	M50	M25	$\leq 95$ A



4.8.3. Terminal box dimensions DSD2-132



Nr.	Cable entries		Terminal	Thread	
	□ y [mm]	g1 [mm] compare dimensional drawings in chapter 44		s2 [mm]	s3 [mm]
20	258	250	3 x M8	2 x M25x1,5	1 x M25x1,5
22	258	250	3 x M8	2 x M40x1,5	1 x M25x1,5
24	258	250	3 x M8	2 x M63x1,5	1 x M25x1,5
26	258	250	3 x M10	2 x M63x1,5	1 x M25x1,5

4.8.4. Terminal designation

DSD2-071-100

	<p>Connection diagram</p> <p>U V W Power connection                  K+ / K- Termerature sensor (KT84-130)                  R1/ R2 Temperature sensor (PT1000)</p> <p>BD+ / BD- Brake                  SL Protective conductor</p>
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DSD2-132

		<p><b>Terminal designation</b>                  Connection diagram</p> <p>U V W Power connection                  K + K - Temperature sensor (KT84-130)                  R1/ R2 Temperature sensor (PT1000)                  R2-1/ R2-2 Temperature sensor reserve (PT1000)</p> <p>SL Protective conductor</p>
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**4.8.5. Position of the terminal boxes and the outlet direction of the main connection**

The terminal box is on the B-side. The following positions of the terminal box are possible at the DSD2-132:

- Terminal box at the top
- Terminal box on the left (with viewing direction A-side onto the shaft end)
- Terminal box on the right (with viewing direction A-side onto the shaft end)

Dependent on the position of the terminal box at the DSD2-132 the following outlet directions of the main connection can be configured (also see product configurator).

Cooling type	Position of junction box	Outlet direction of main connection				
		Top	Bottom	left <sup>3)</sup>	right <sup>3)</sup>	B-side
radially-mounted forced fan <sup>1)</sup>	Top	-	-	☒	☒	☒ <sup>2)</sup>
	left <sup>3)</sup>	☒	☒	-	-	☒
	right <sup>3)</sup>	☒	☒	-	-	☒
Water cooling	Top	-	-	☒	☒ <sup>2)</sup>	☒
	left <sup>3)</sup>	-	-	-	-	-
	right <sup>3)</sup>	-	-	-	-	-
axially mounted forced fan	Top	-	-	☒	☒ <sup>2)</sup>	-
	left <sup>3)</sup>	☒	☒	-	-	-
	right <sup>3)</sup>	☒	☒	-	-	-

<sup>1)</sup> At motors with a radial blower the position of the terminal box is dependent of the position of the cooling (e.g. position of the terminal box (“on the top” isn’t possible if the position of the cooling is „on the top“).

<sup>2)</sup> Preferred option

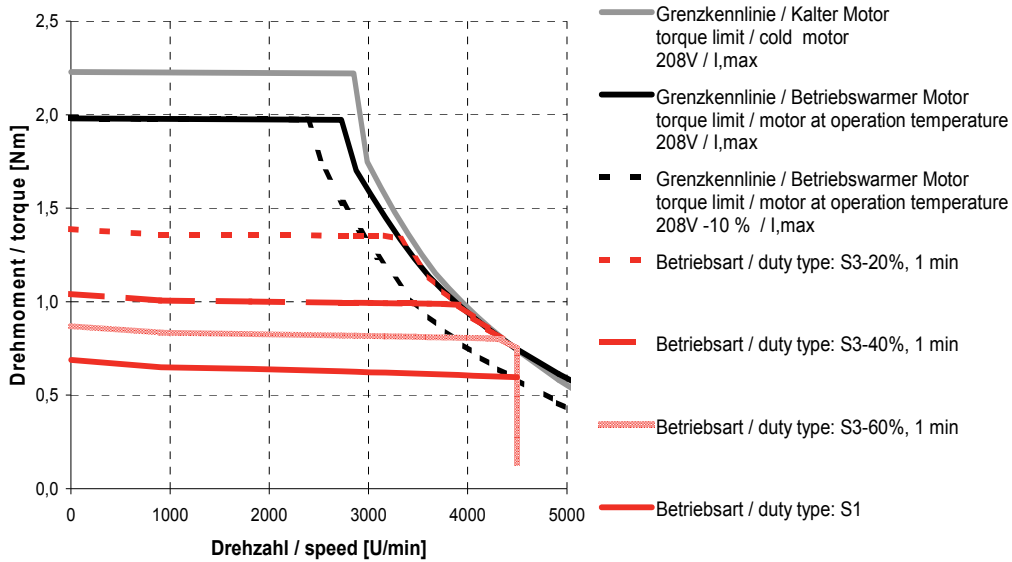
<sup>3)</sup> Viewing direction A-side onto the shaft end

At the DSD2-071-100 the position of the terminal box is on the top and the outlet direction of the main connection is on the B-side.

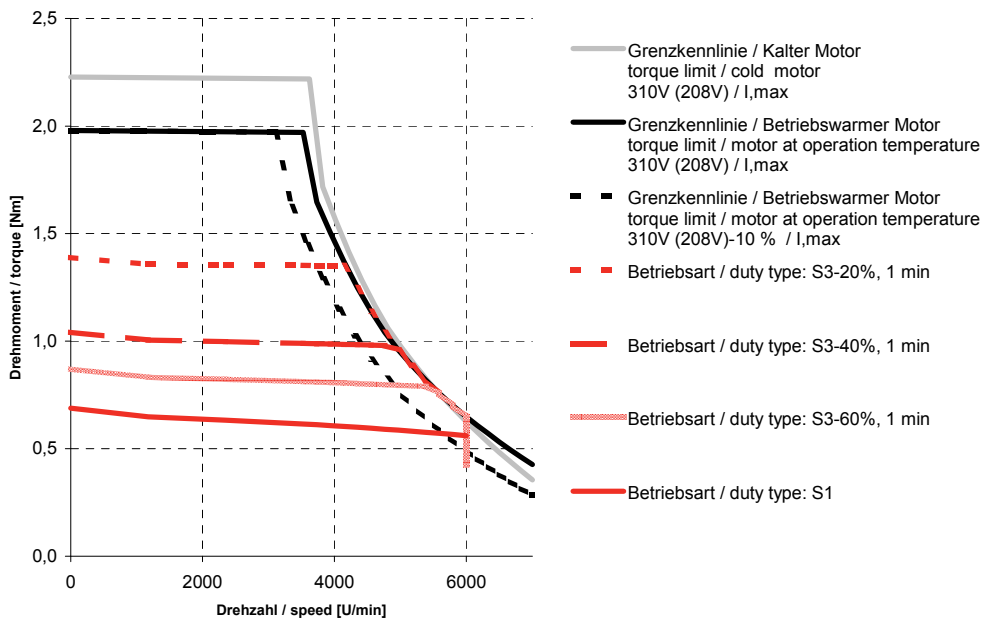
## 5. Motor characteristic curves

### 5.1. Motor characteristic curve DSD2-028

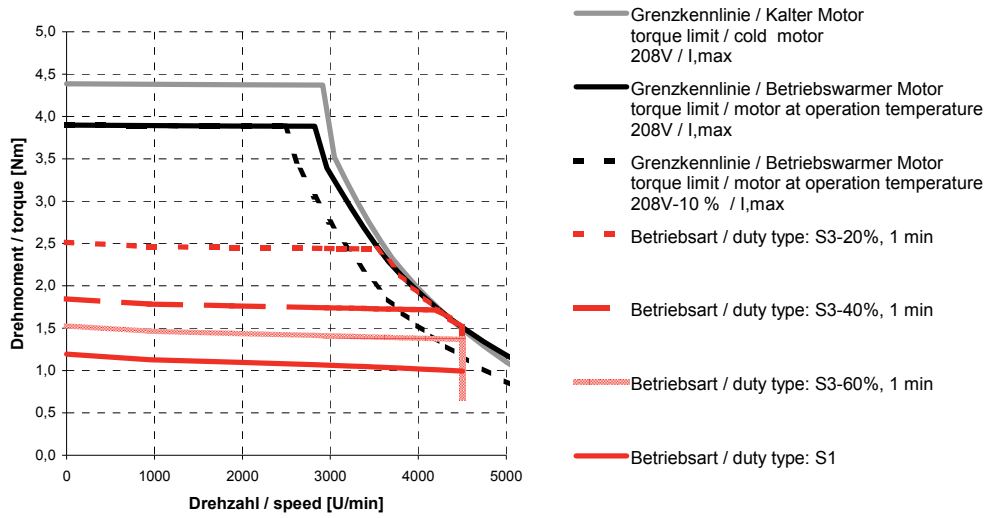
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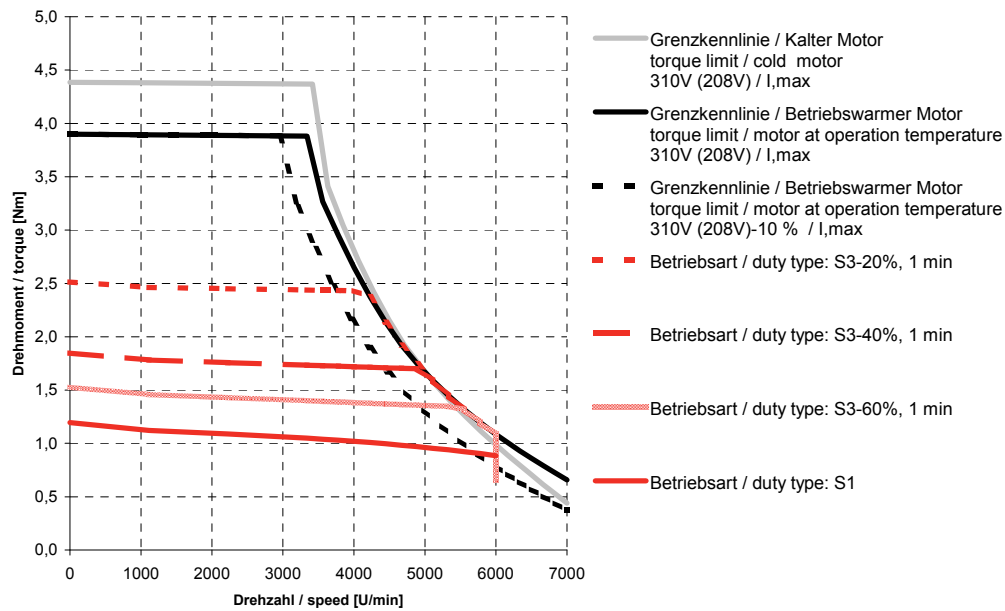
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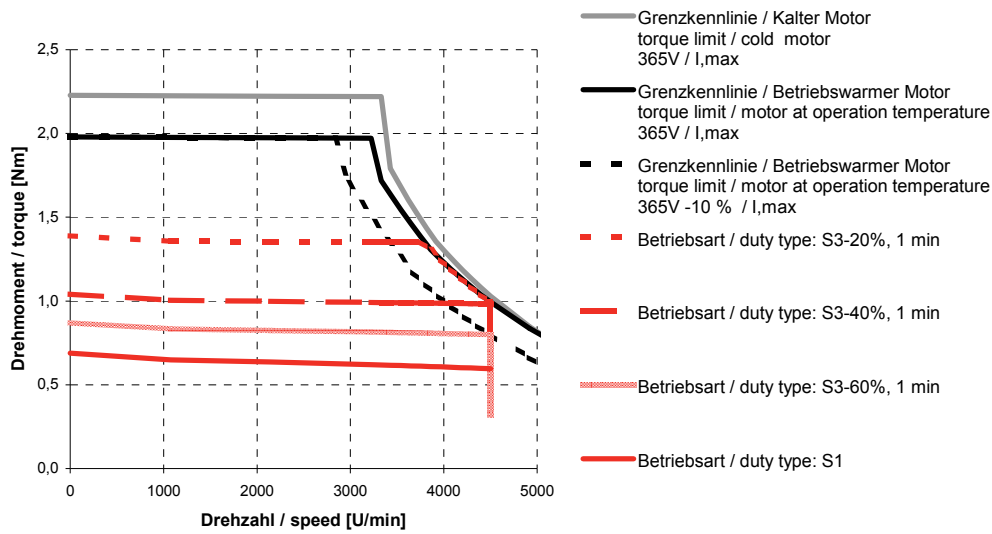
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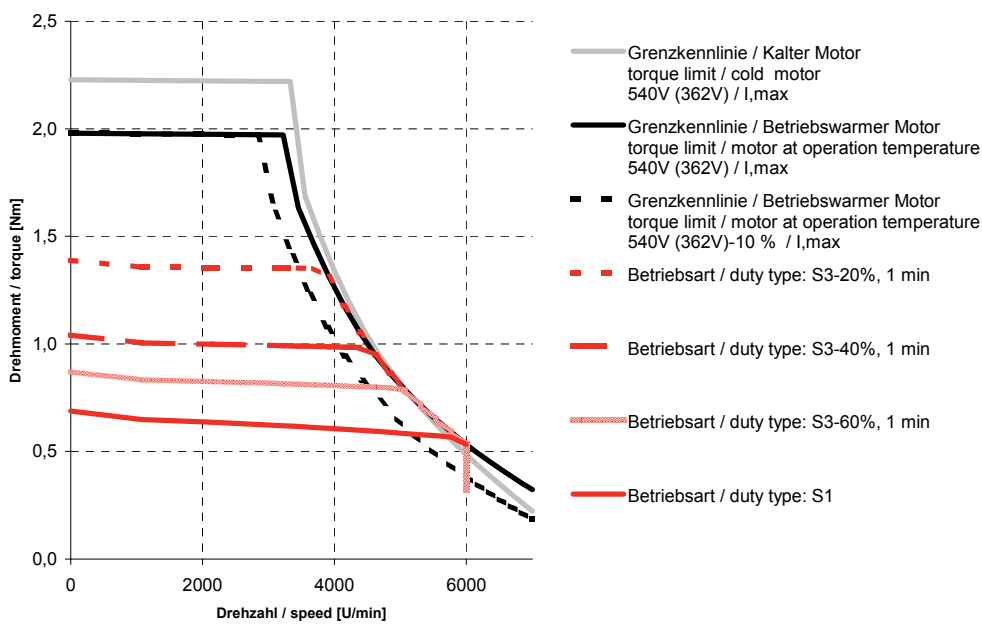
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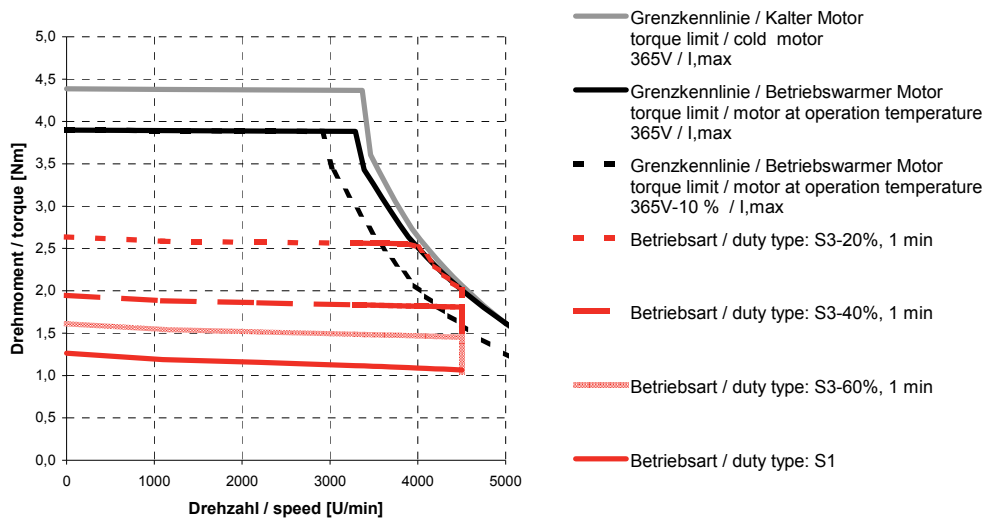
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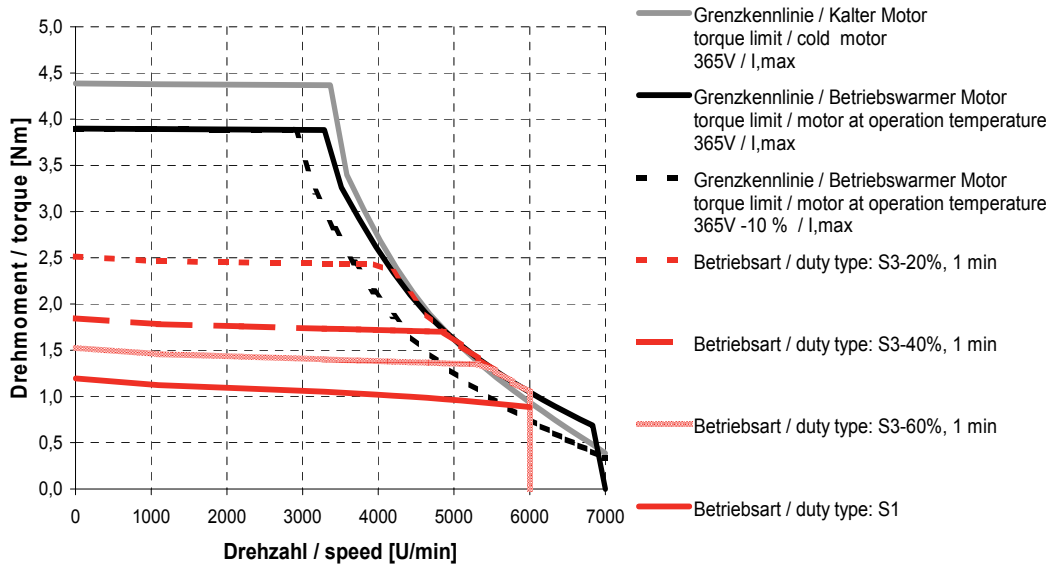
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DSD2-028MO44U-45-54

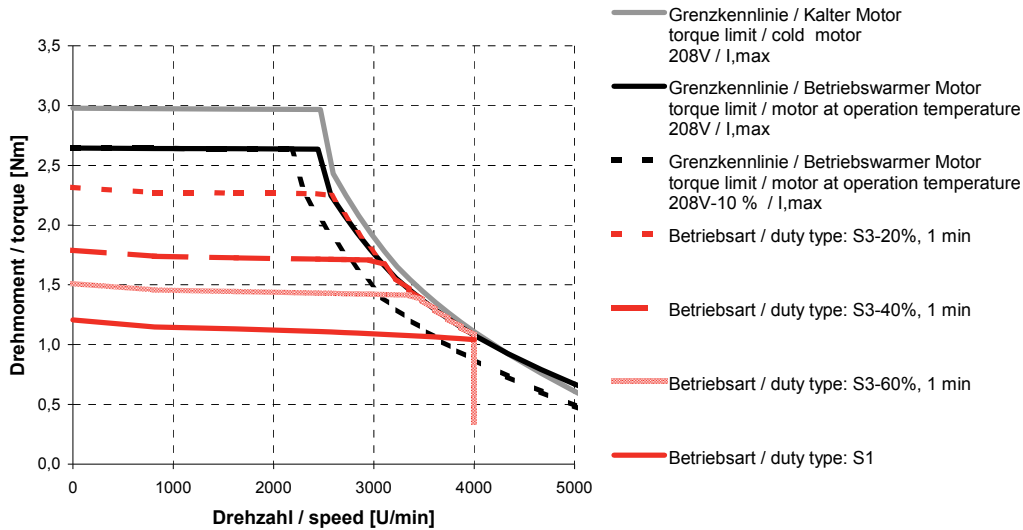


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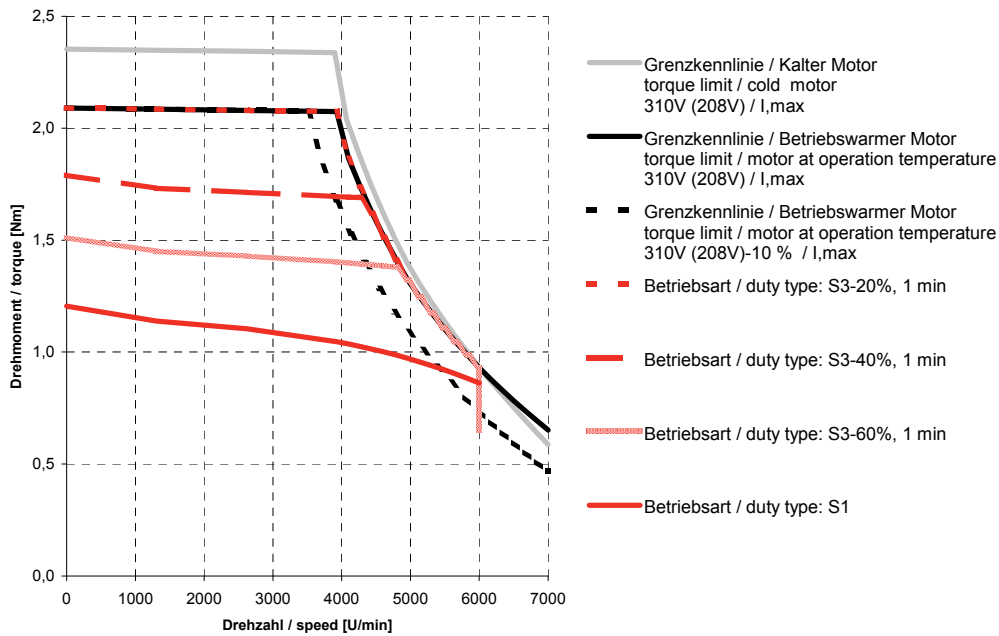


## 5.2. Motor characteristic curve DSD2-036

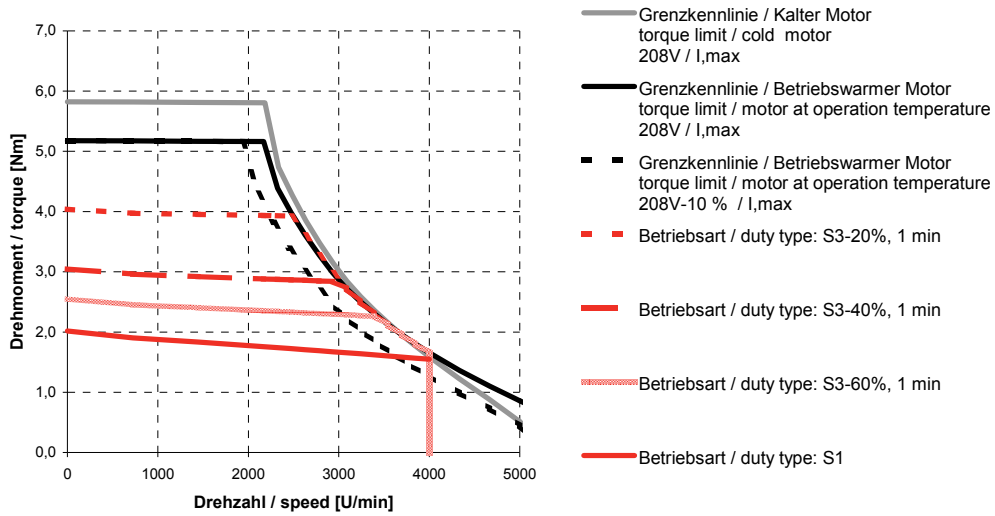
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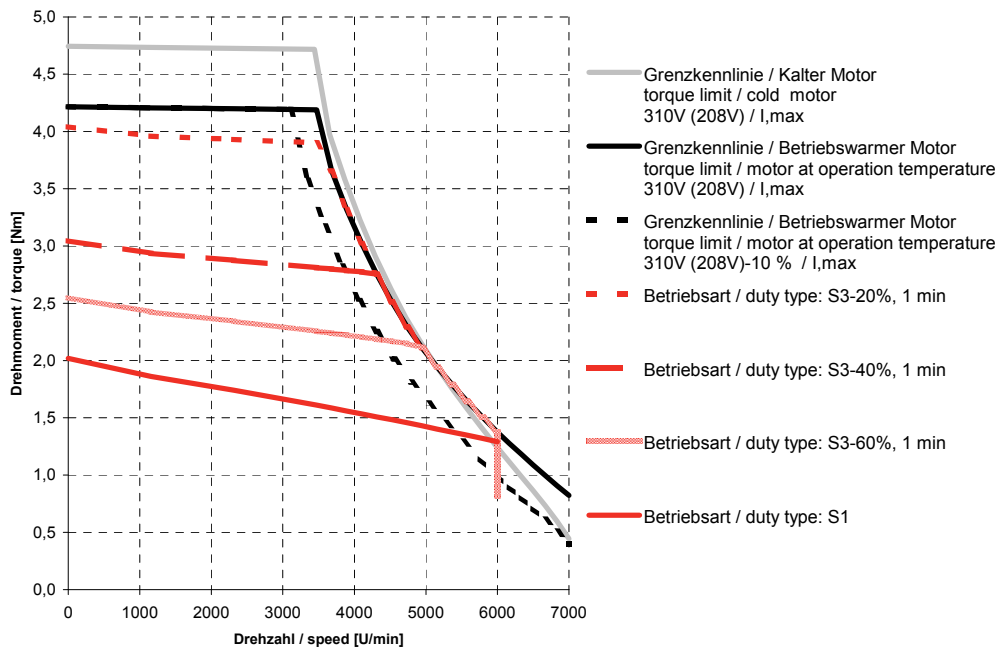
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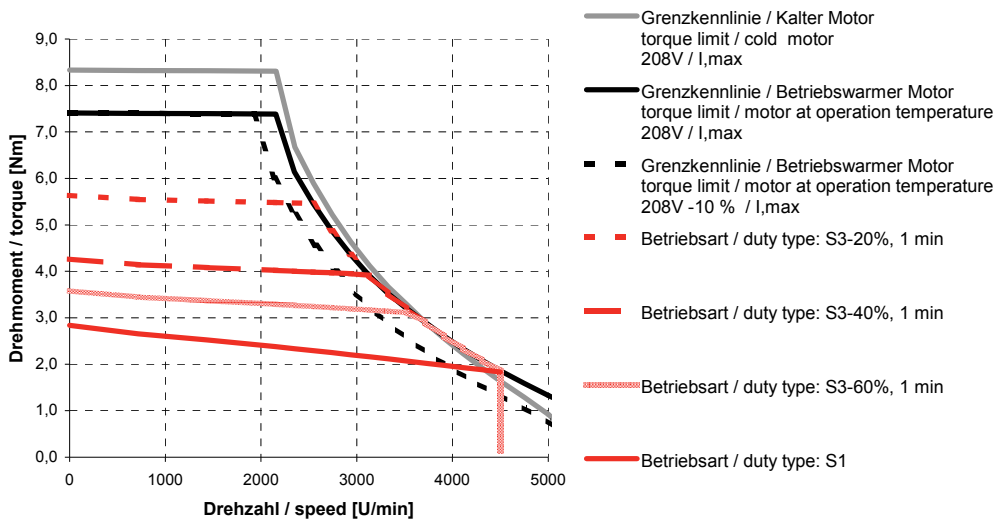


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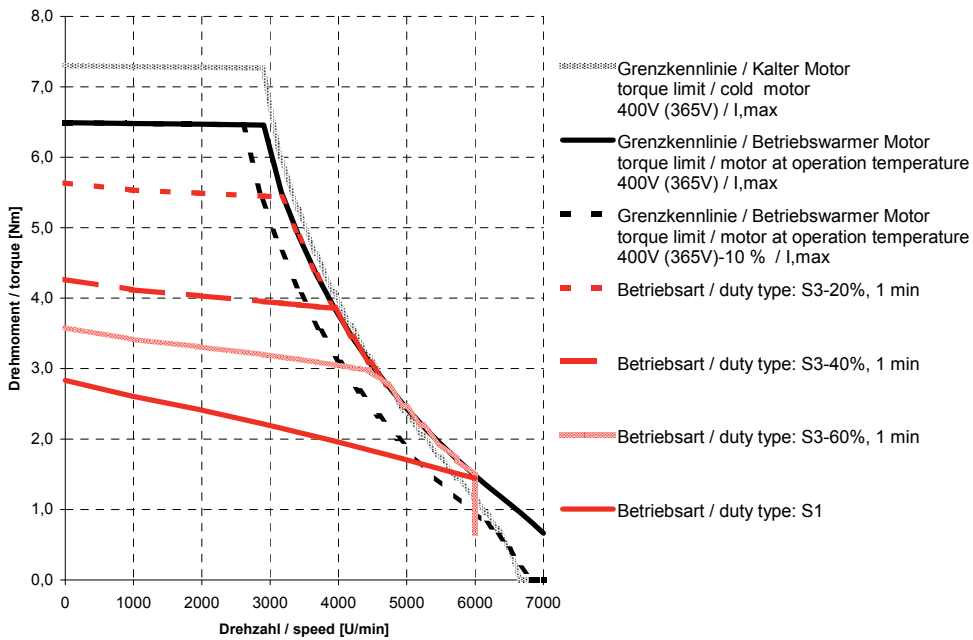




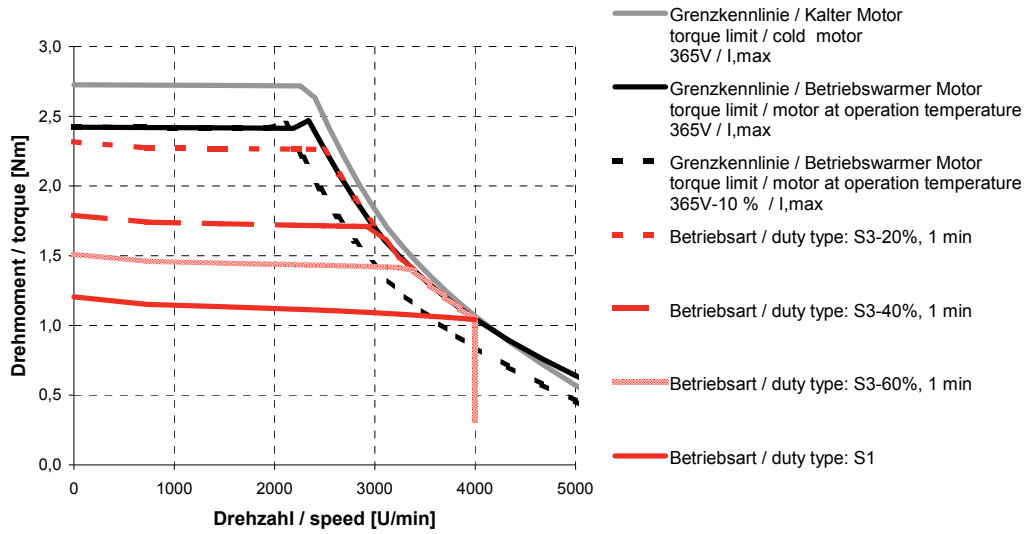
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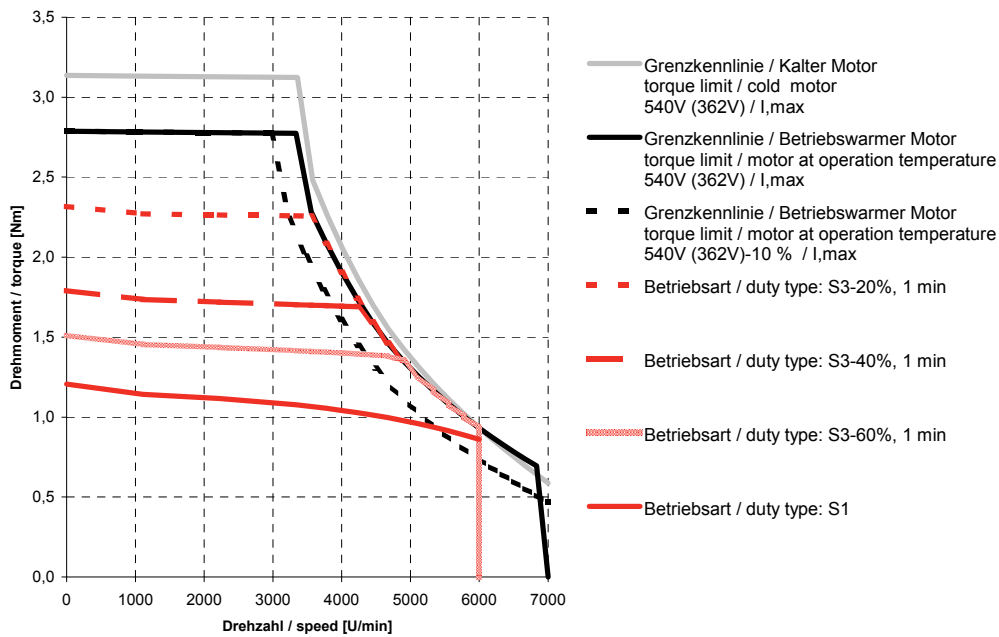
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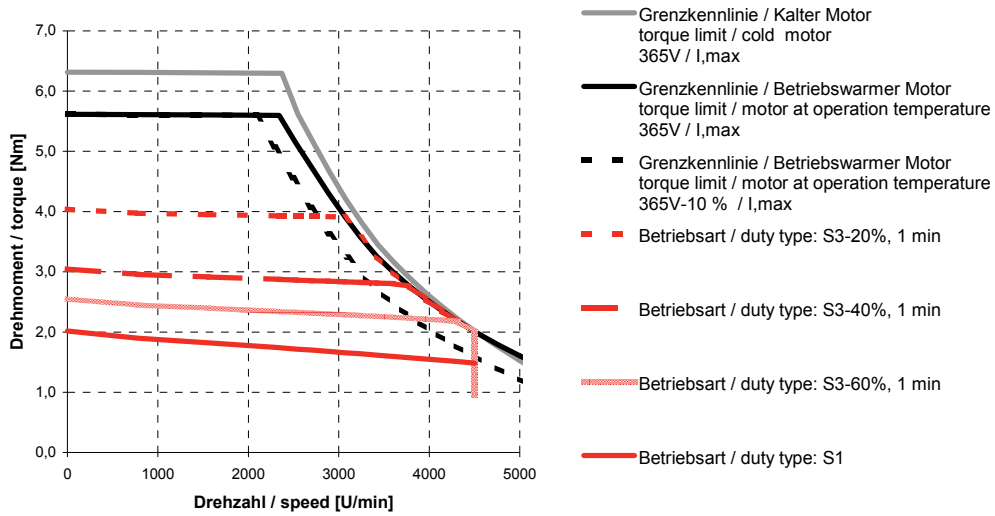
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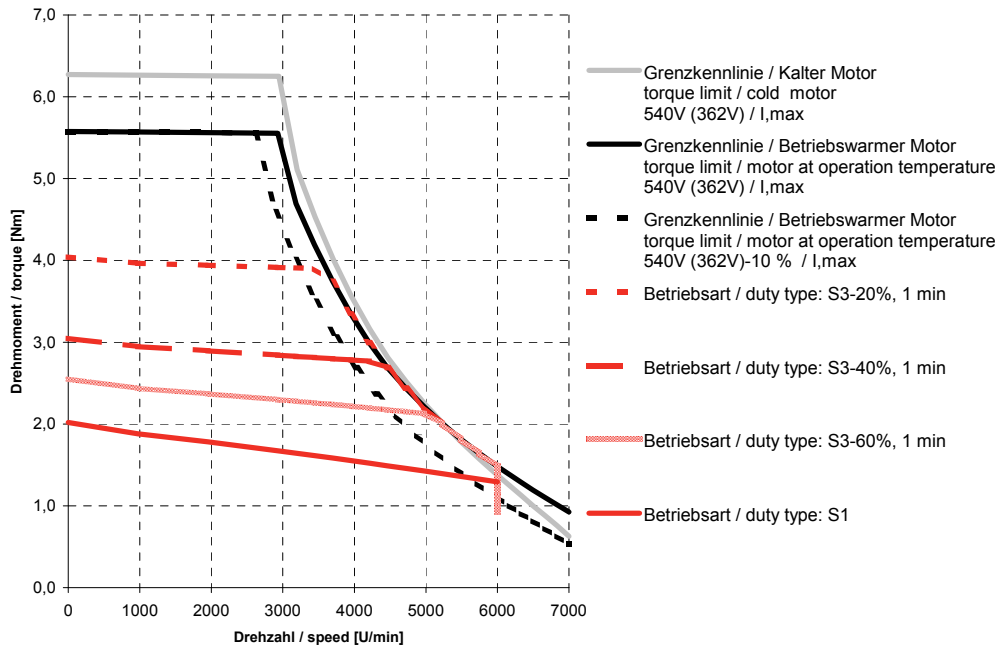
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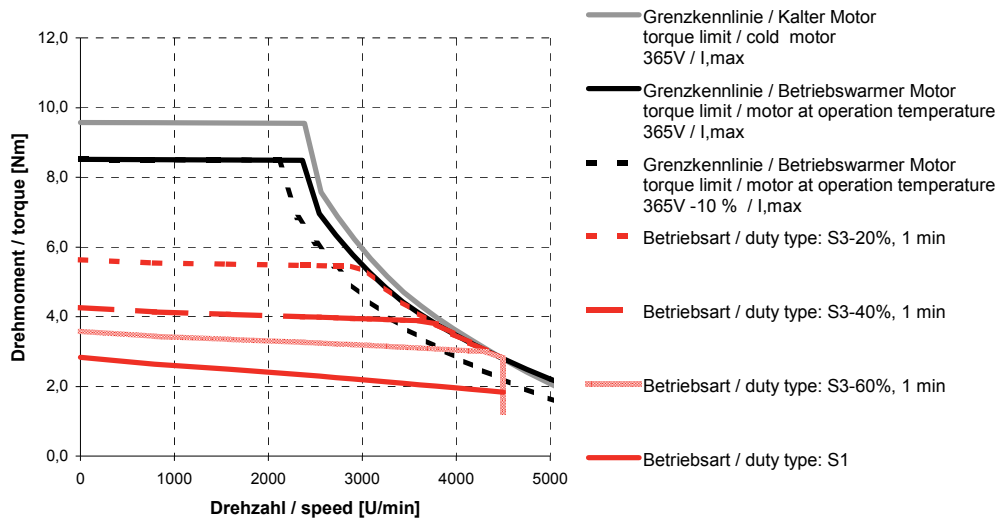
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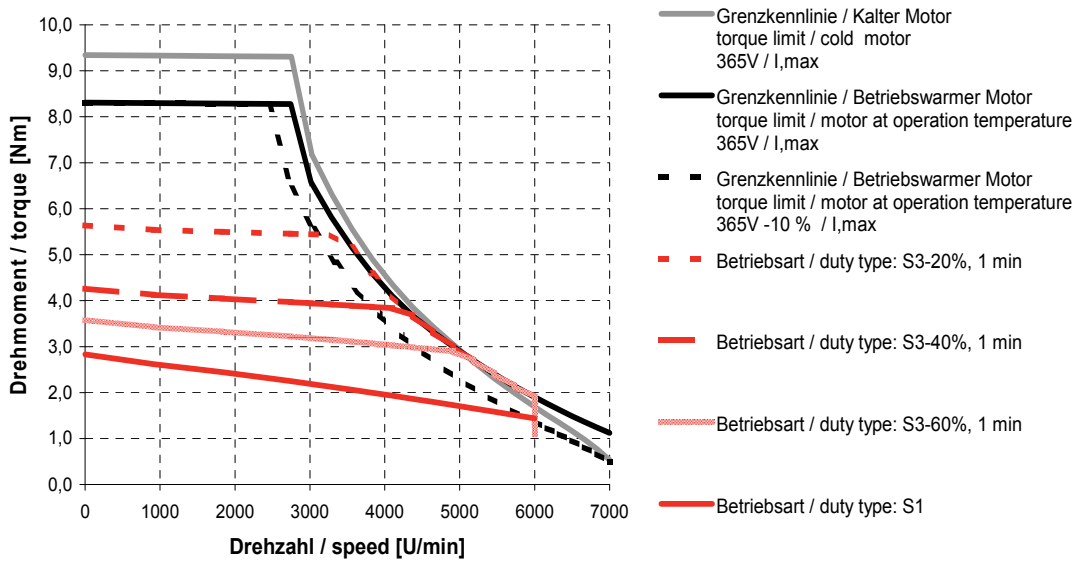
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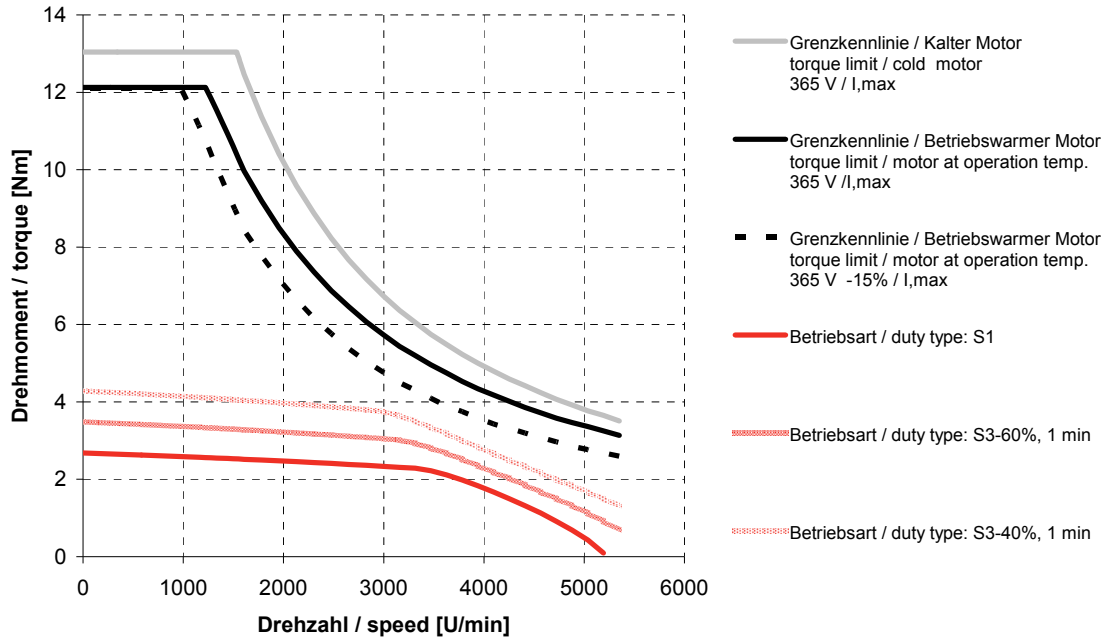


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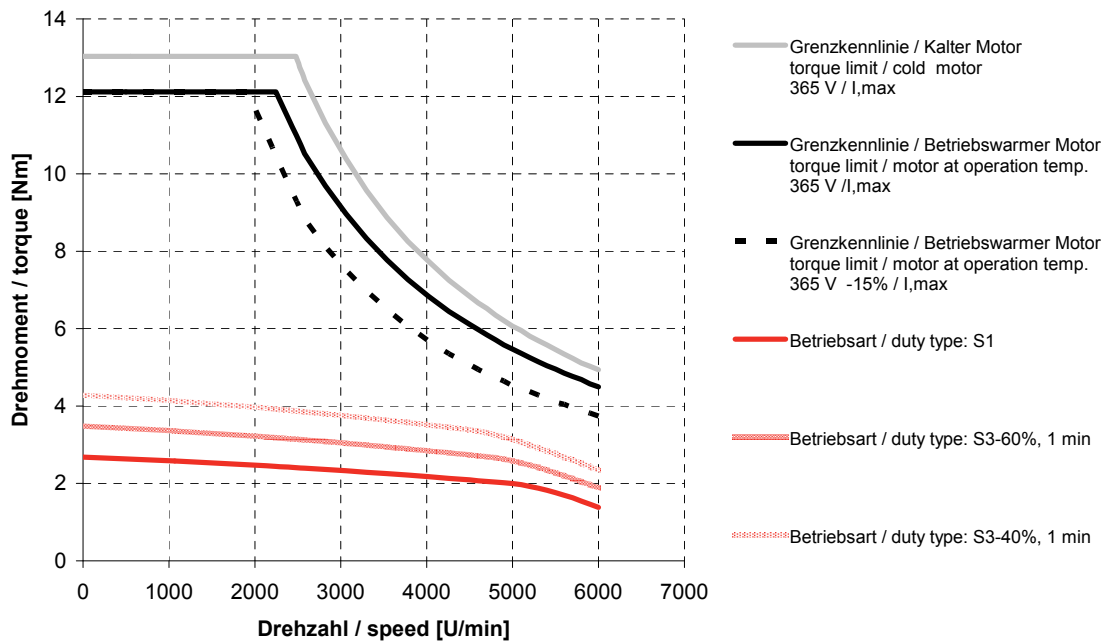


### 5.3. Motor characteristic curve DSD2-045

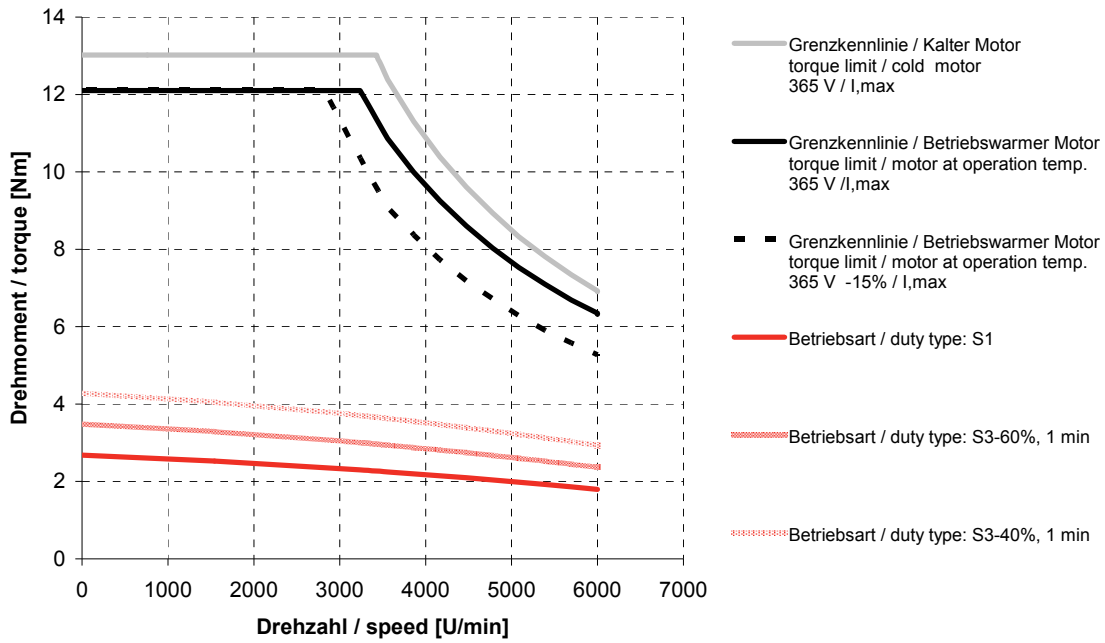
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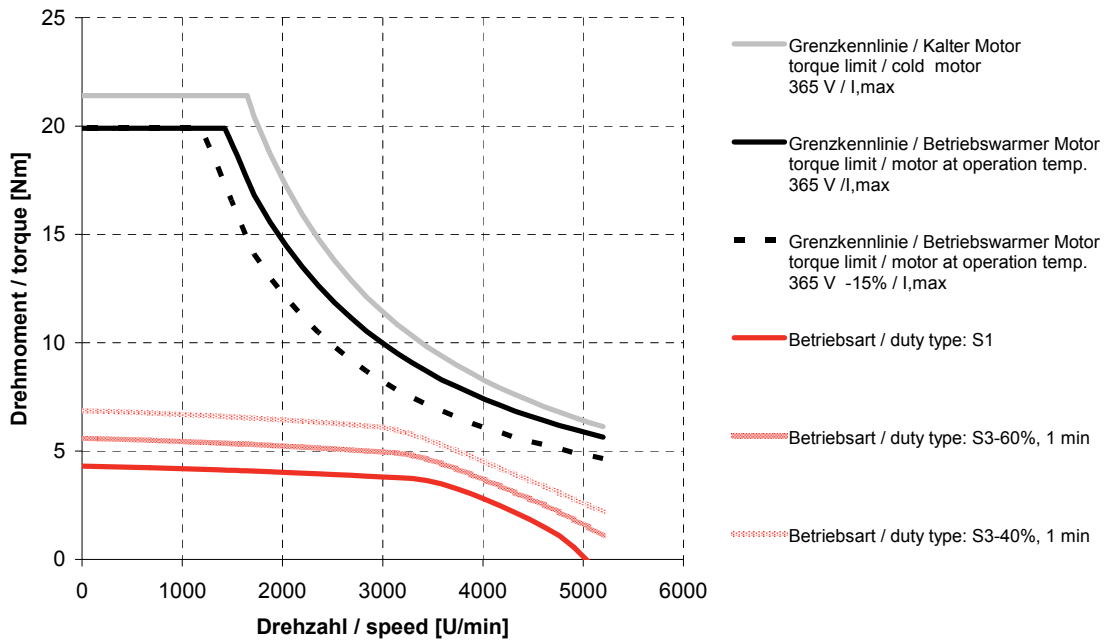
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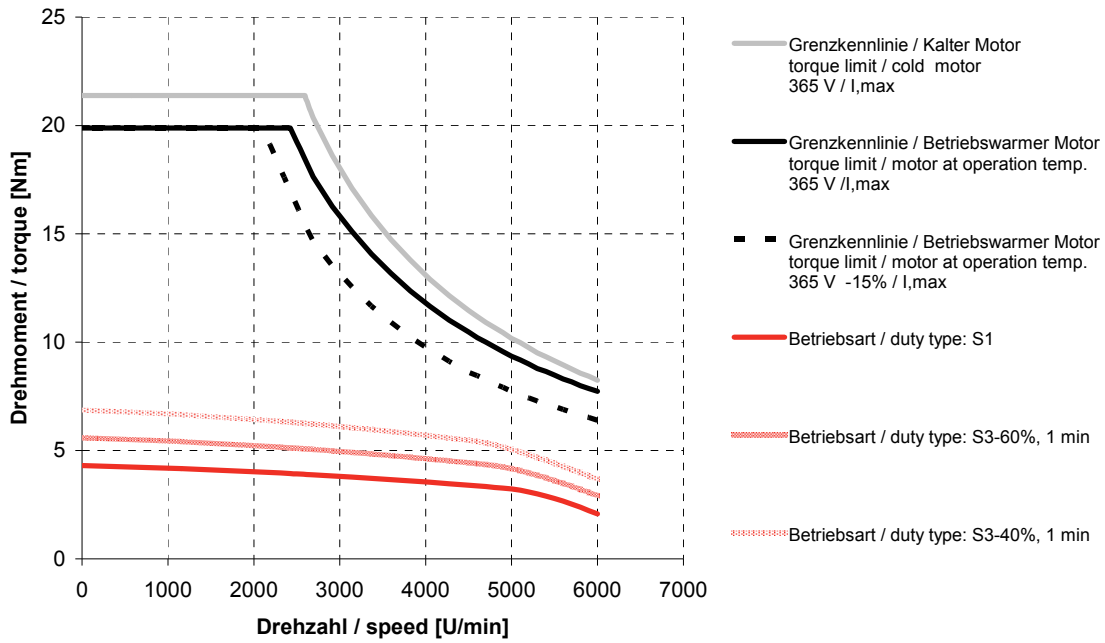
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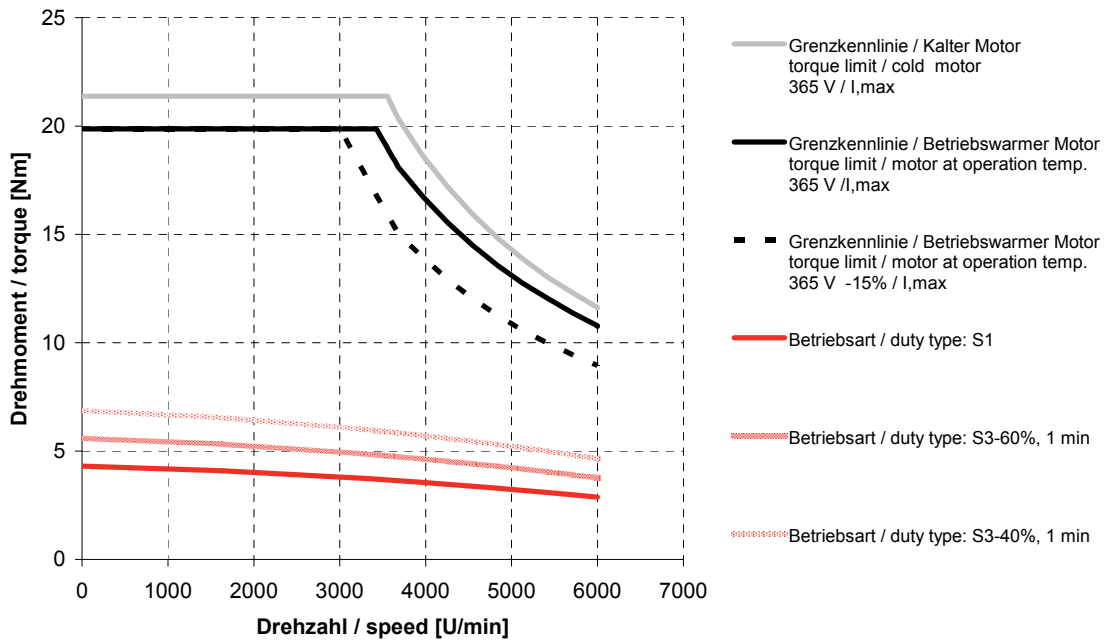
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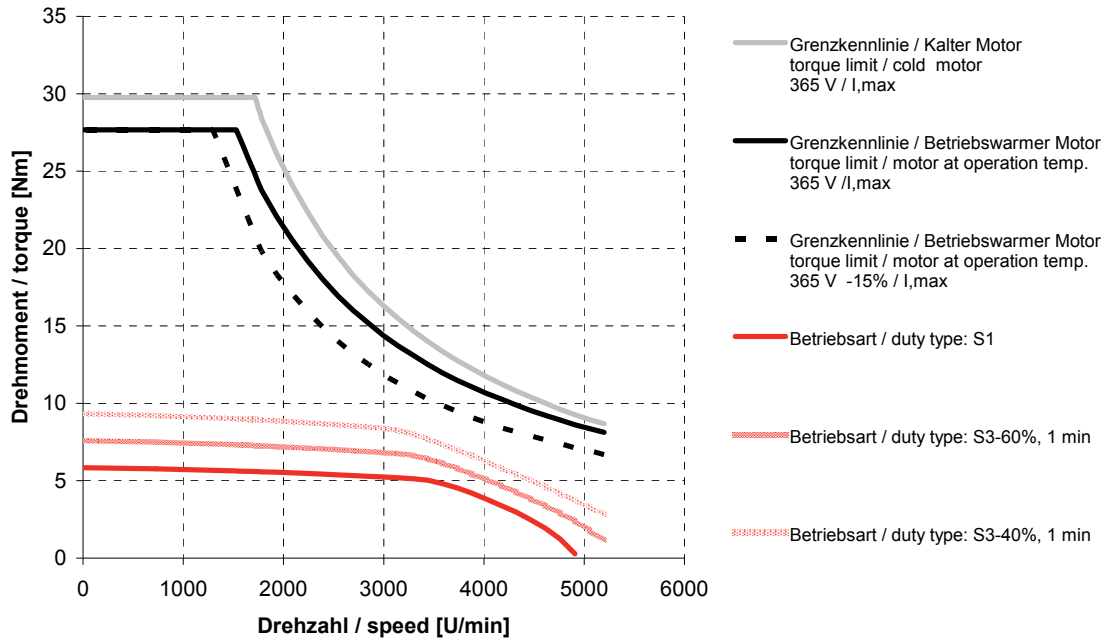
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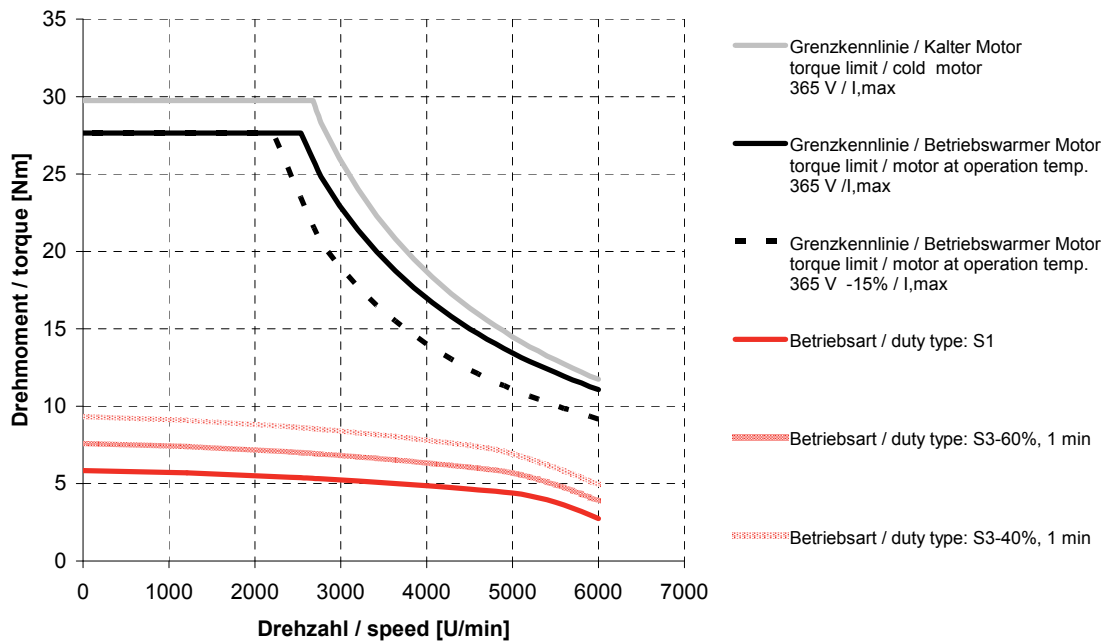
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DSD2-045LO64U-30-54

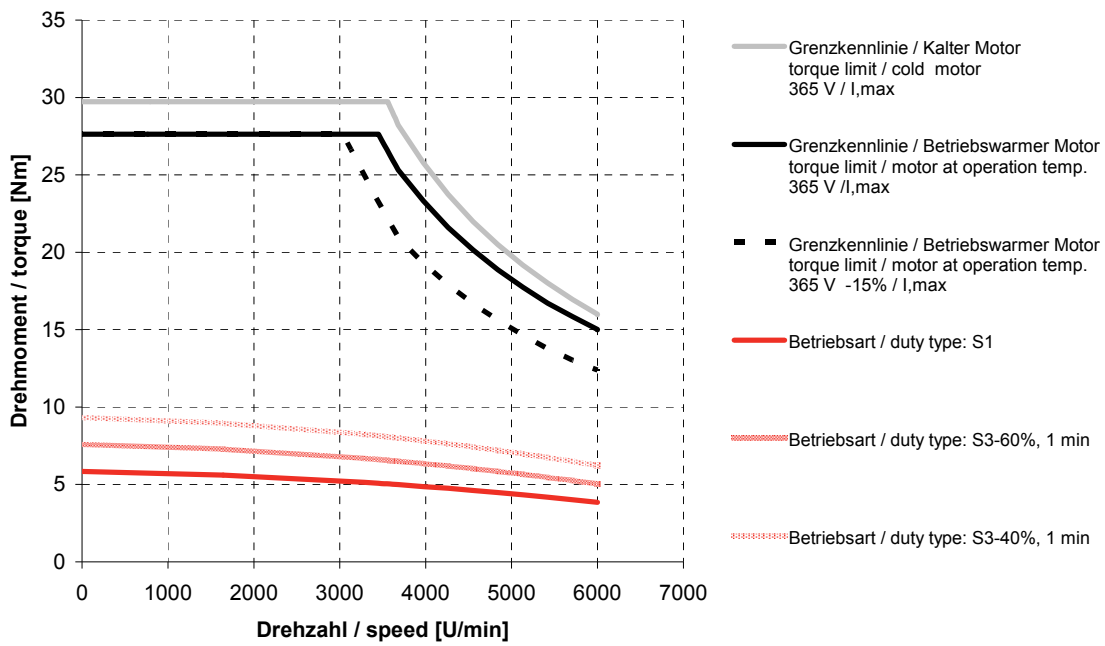


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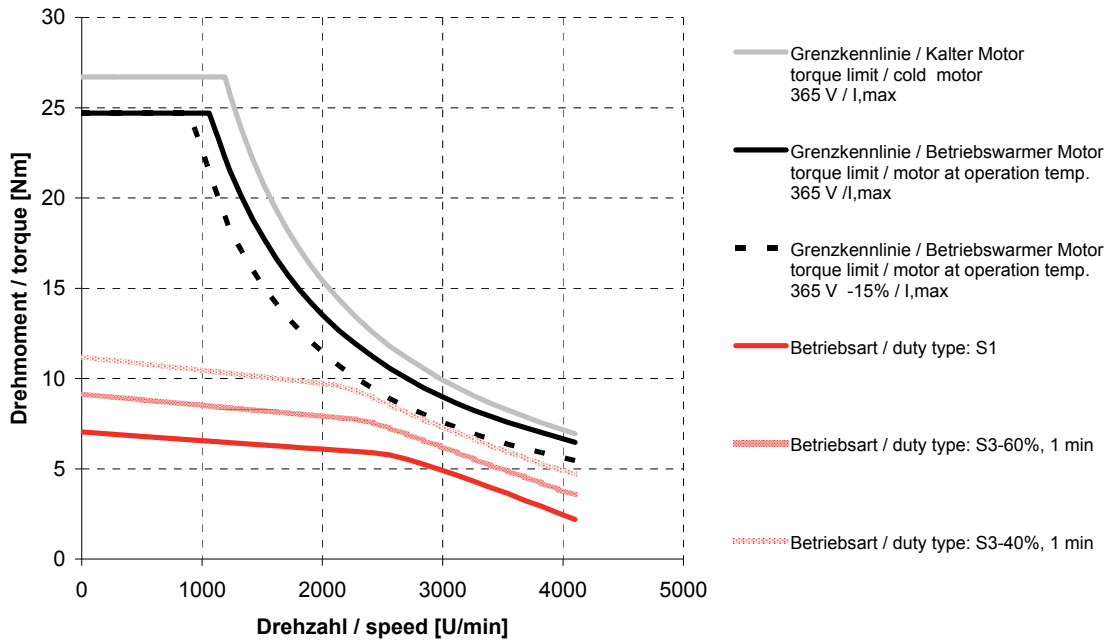
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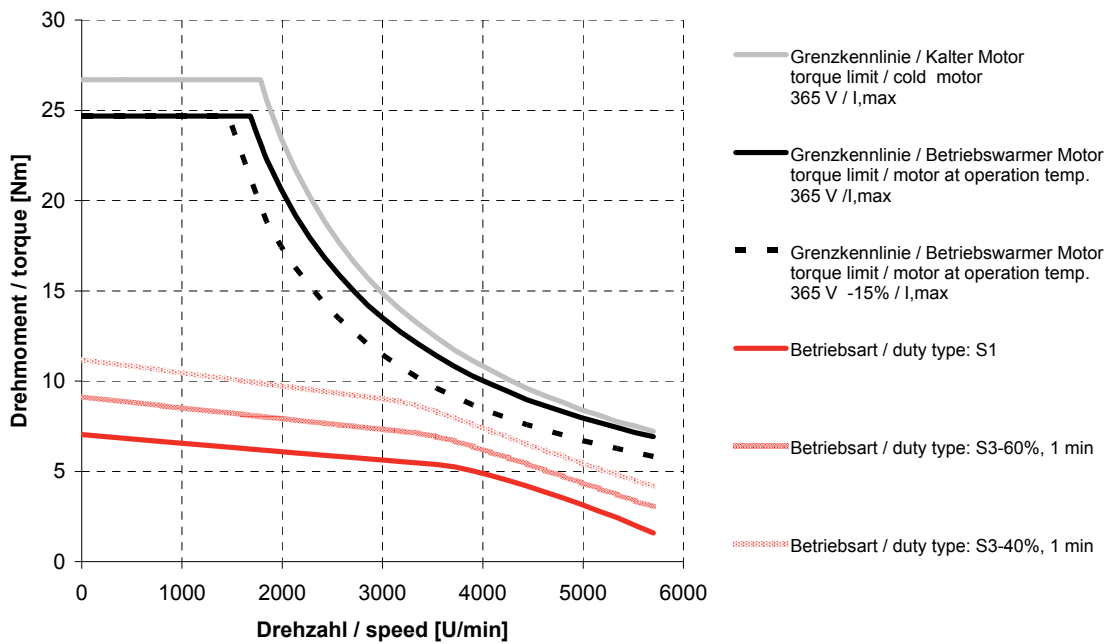
5.4. Motor characteristic curve DSD2-056

5.4.1. DSD2-056..64U.. (without fan)

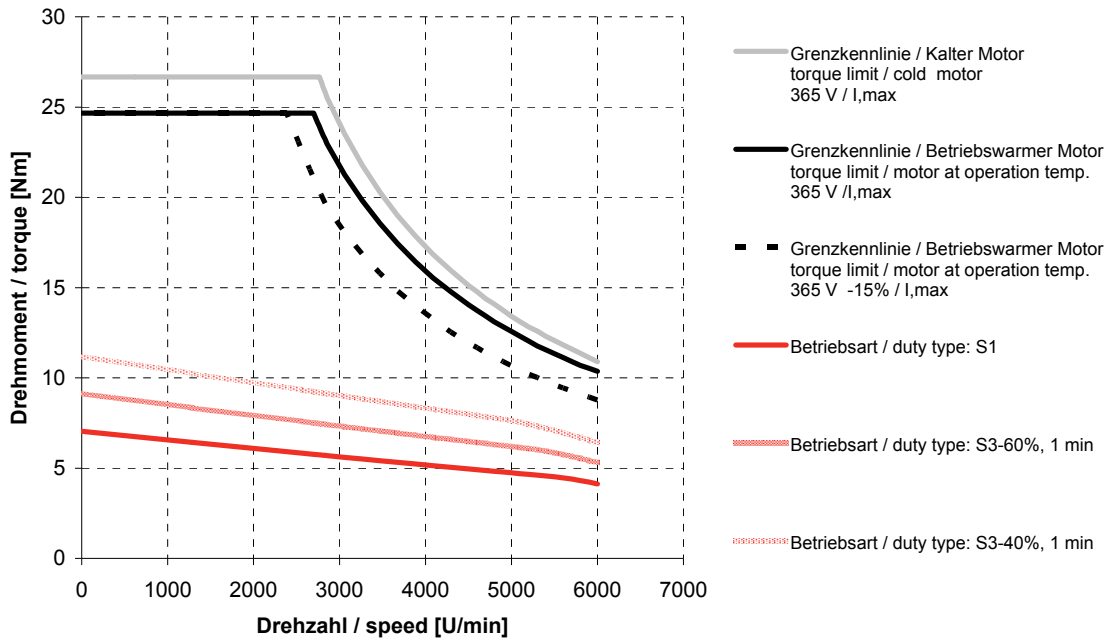
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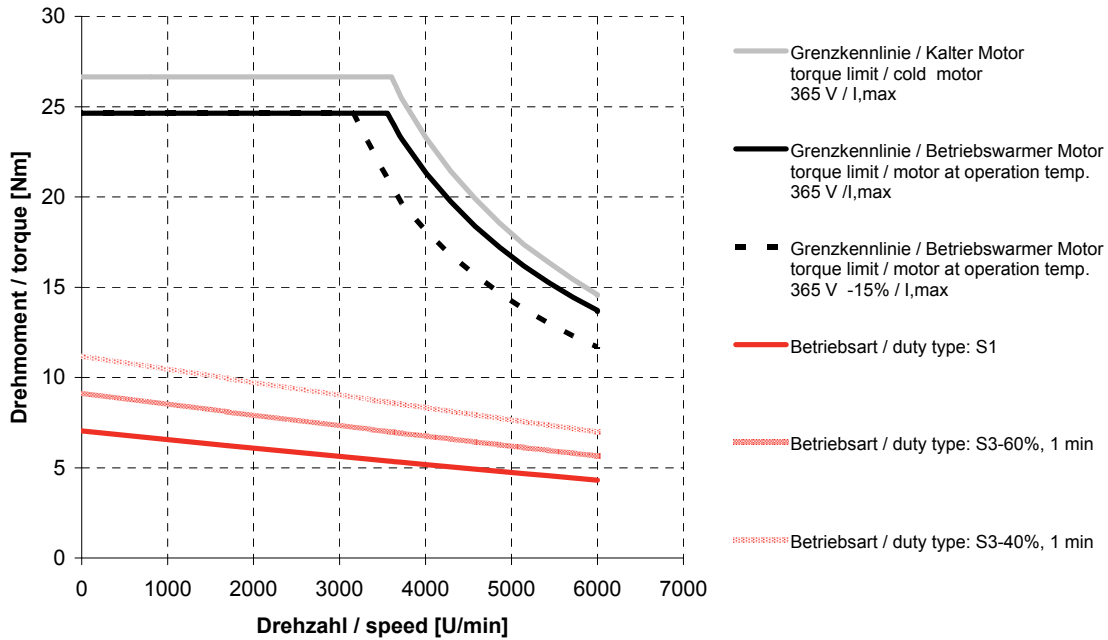
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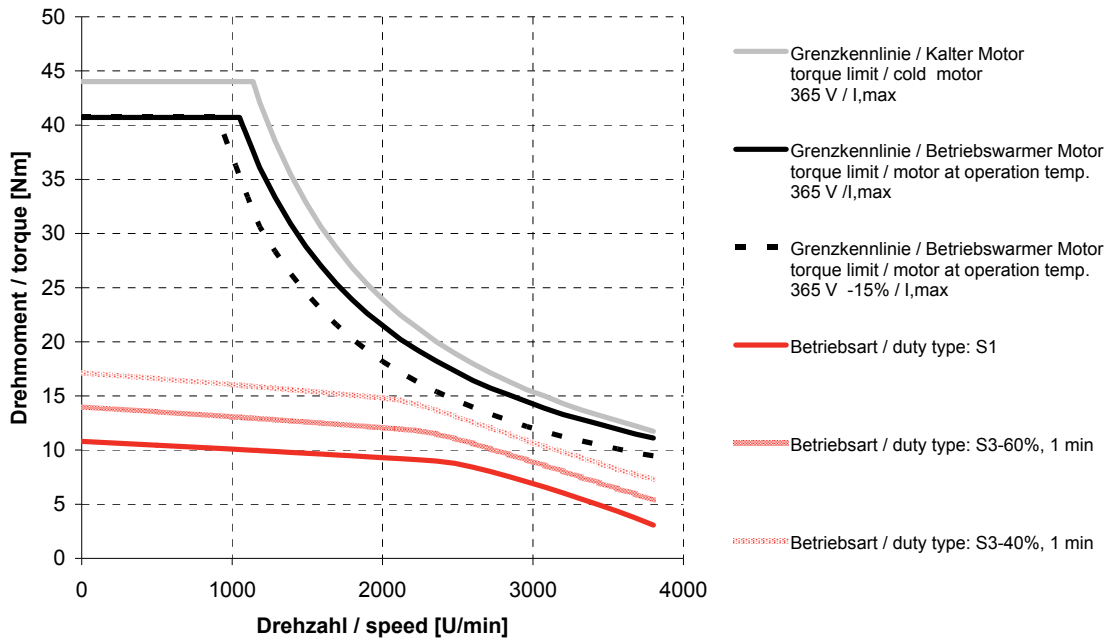
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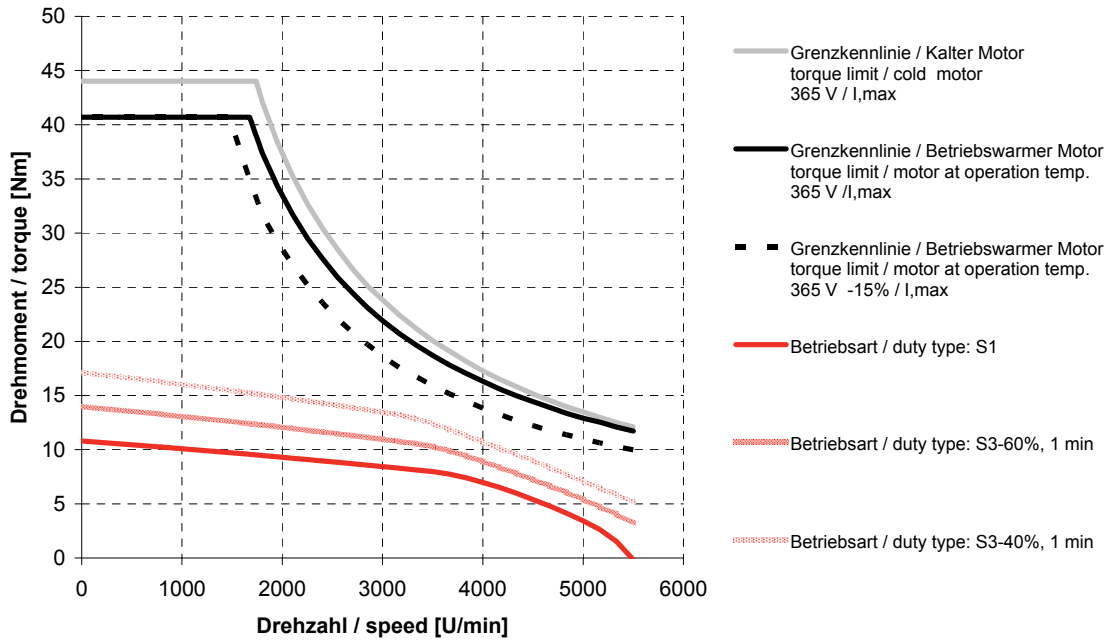
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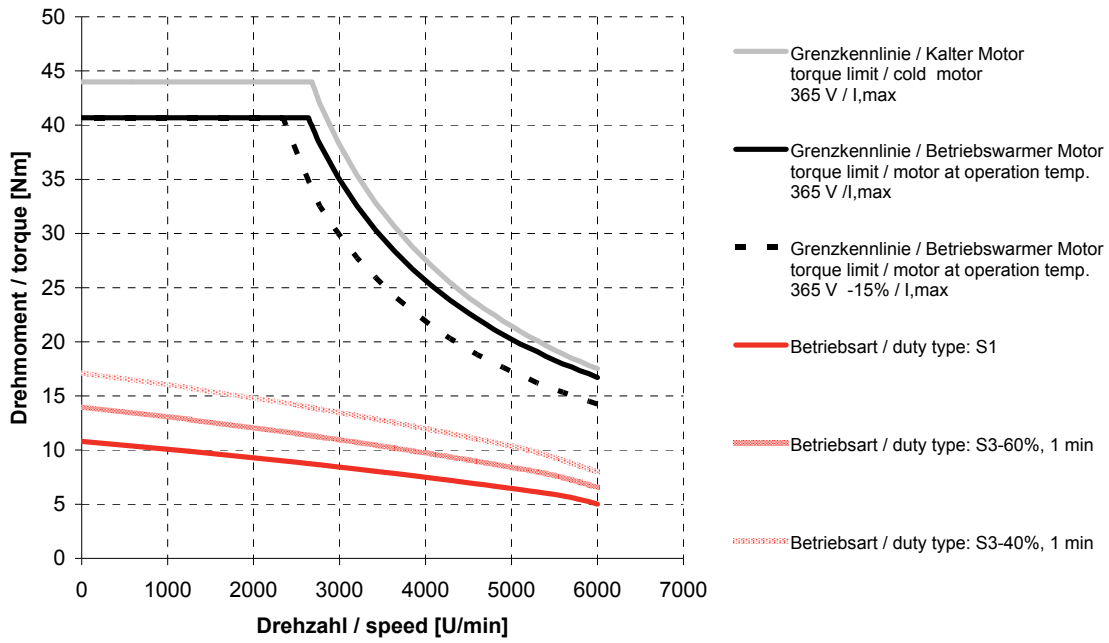
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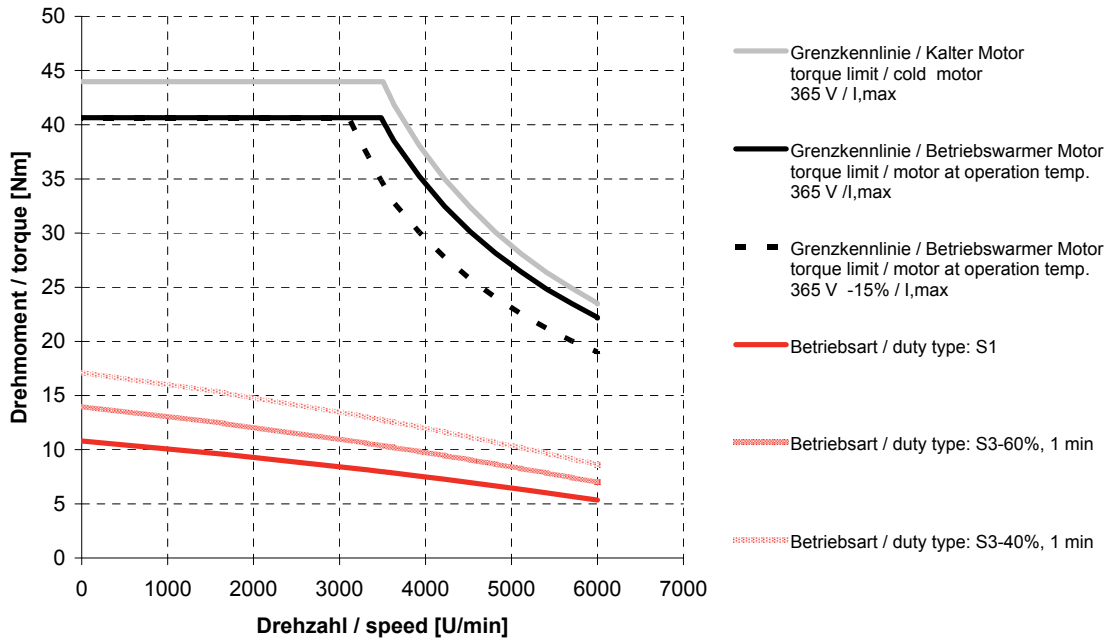
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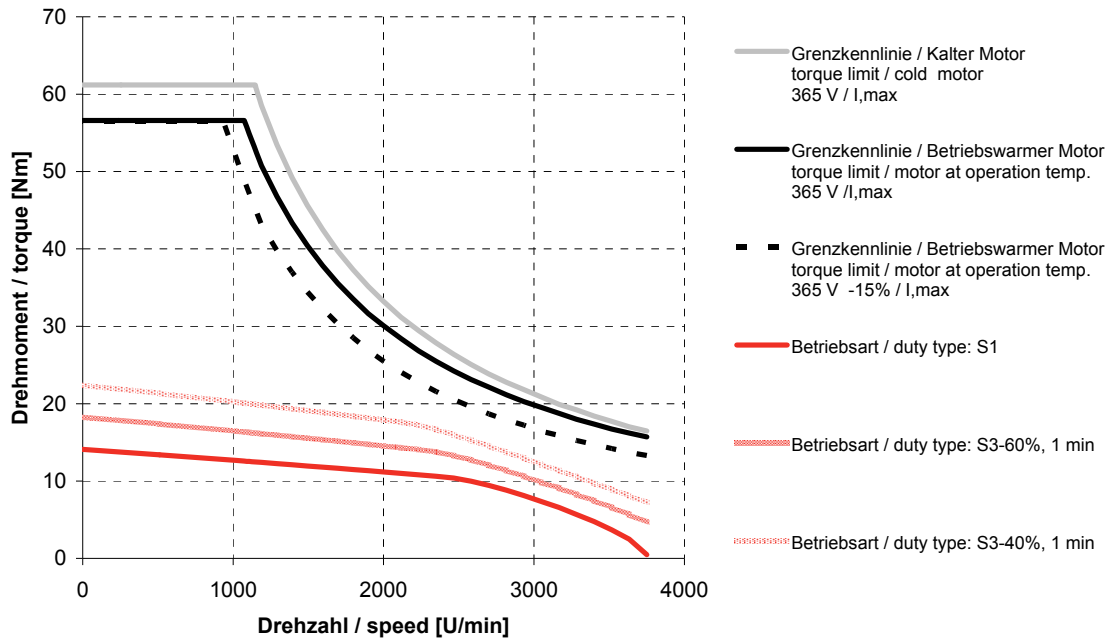
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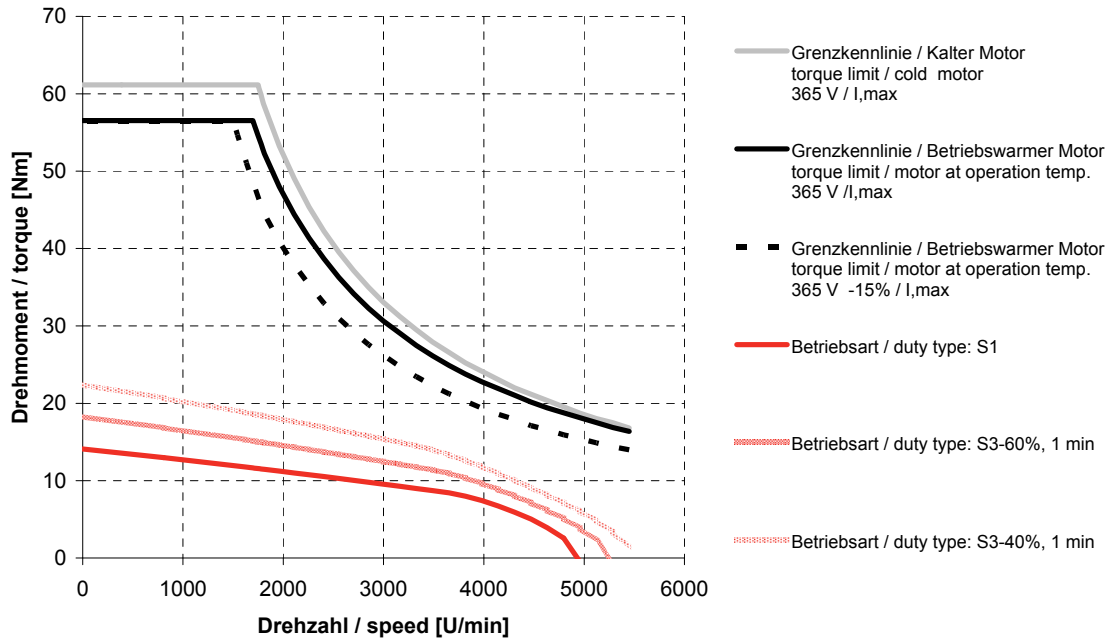
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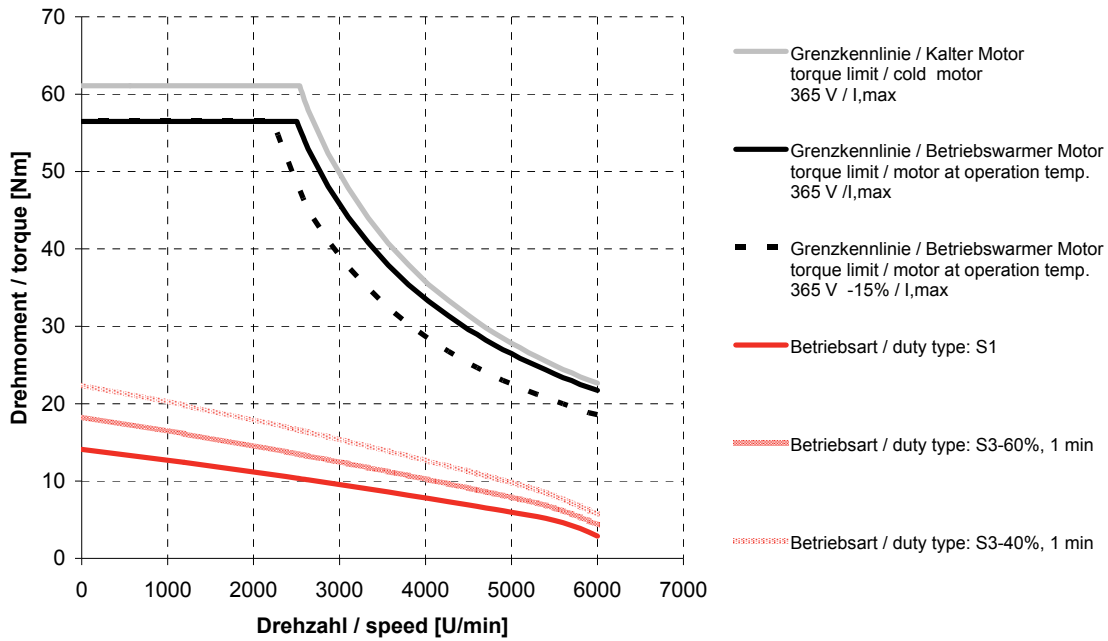
DSD2-056LO64U-20-54



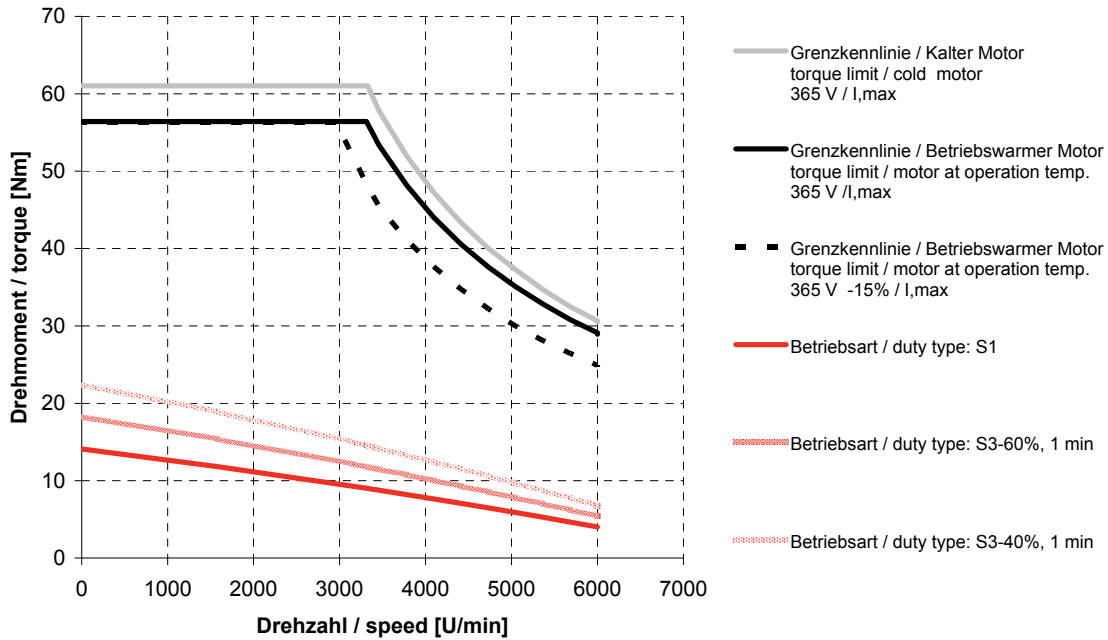
DSD2-056LO64U-30-54



DSD2-056LO64U-45-54

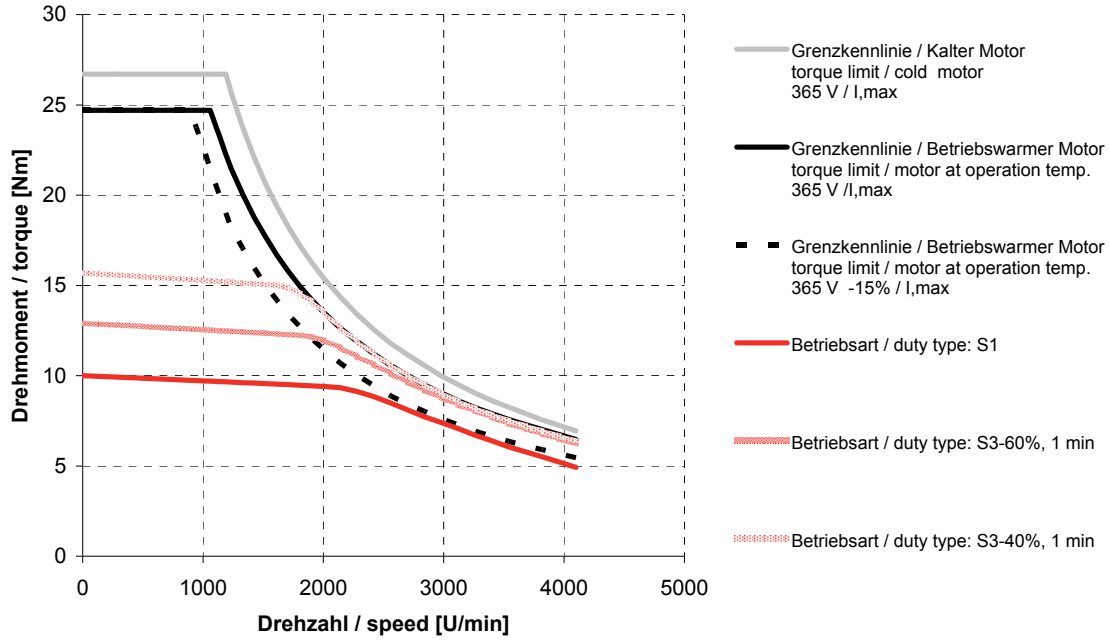


DSD2-056LO64U-60-54

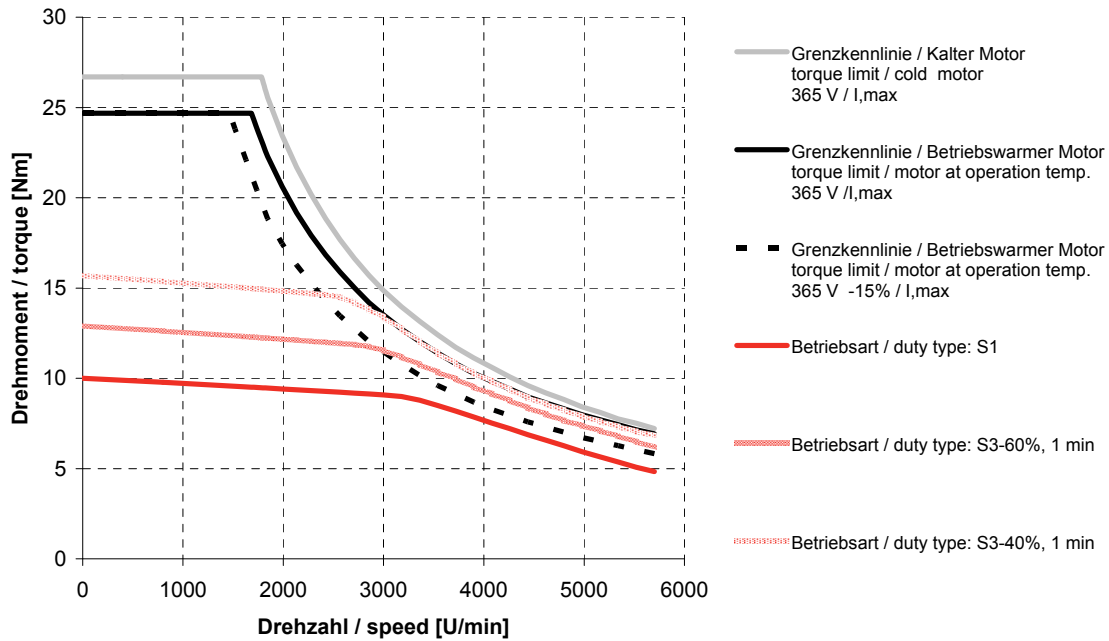


5.4.2. DSD2-056..64O-.. (with fan)

DSD2-056SO64O-20-54

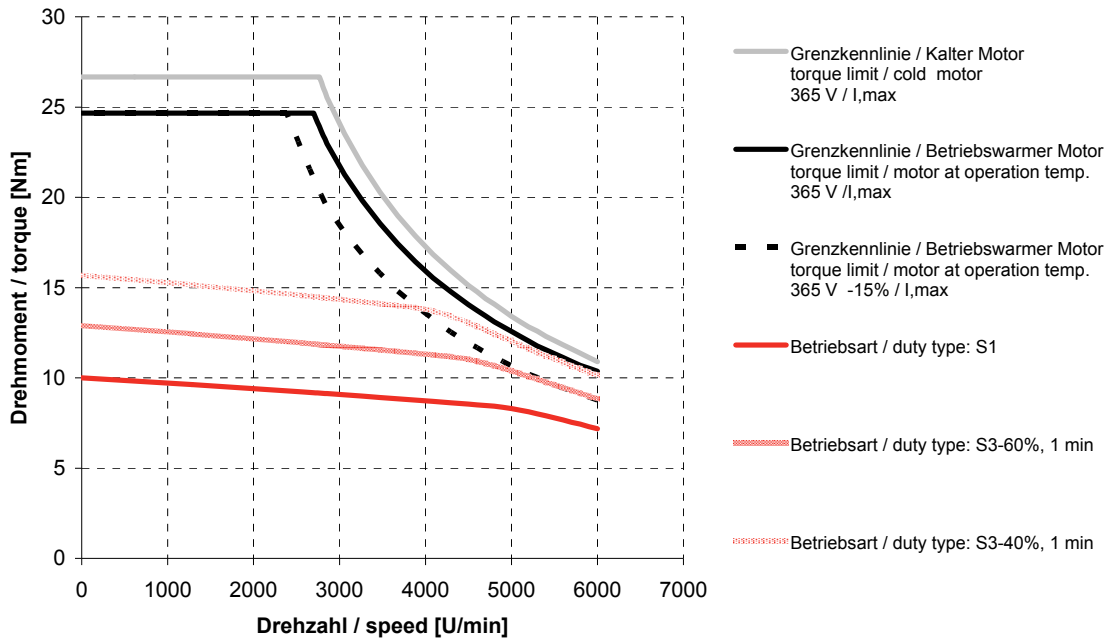


DSD2-056SO64O-30-54

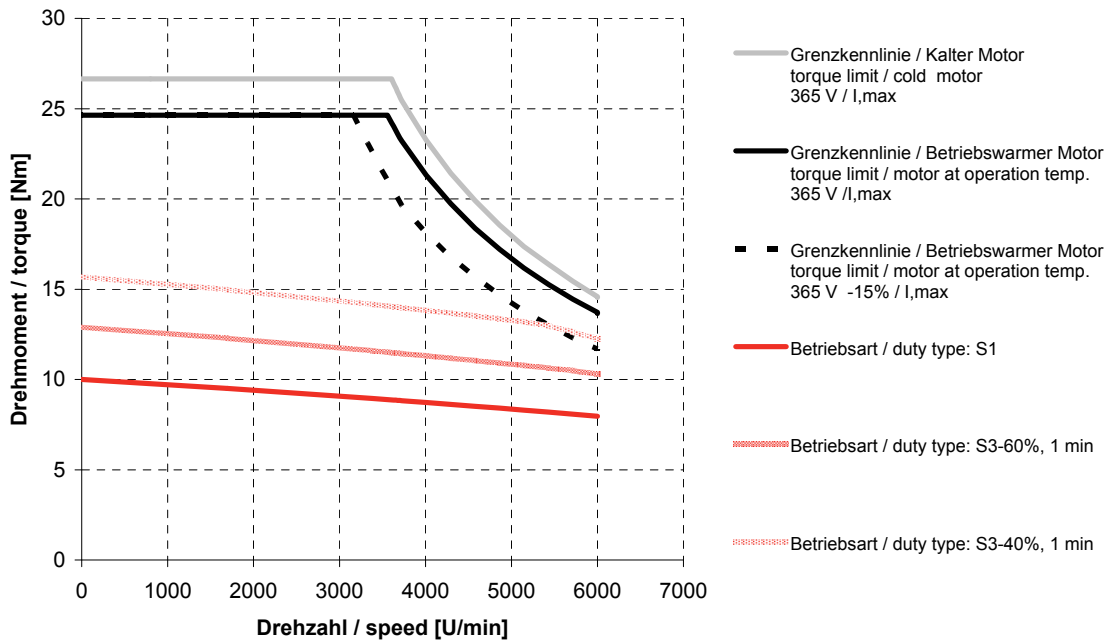




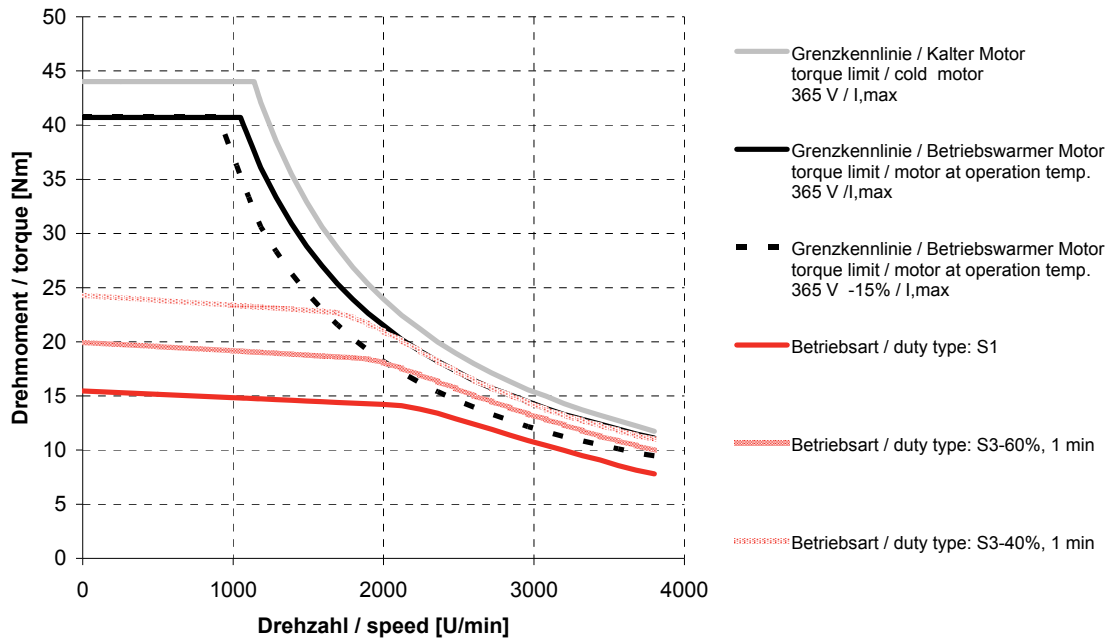
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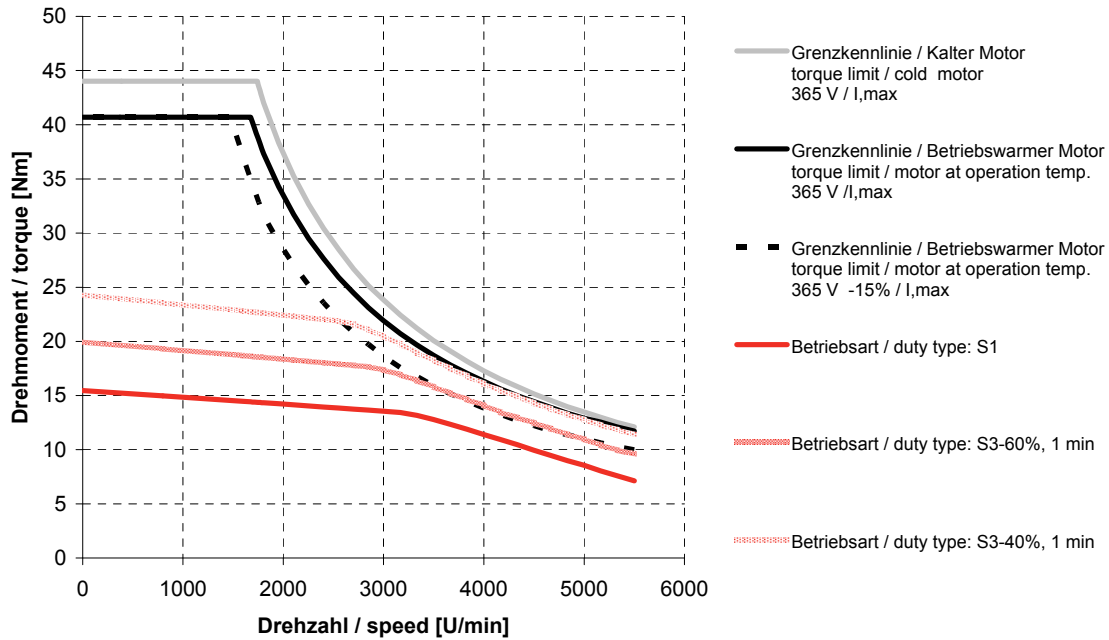
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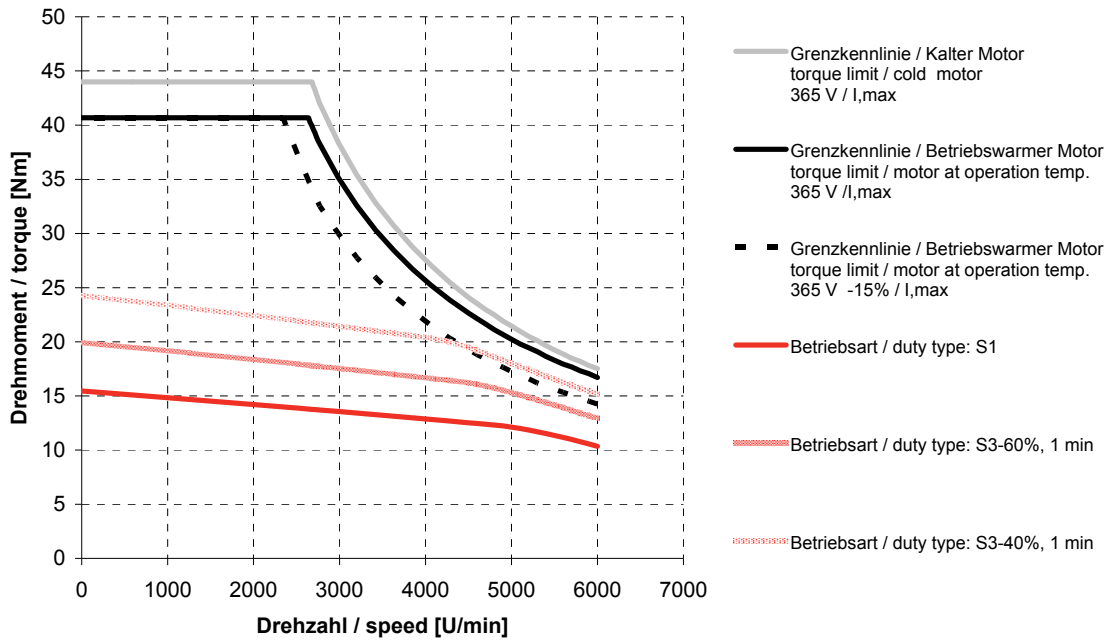
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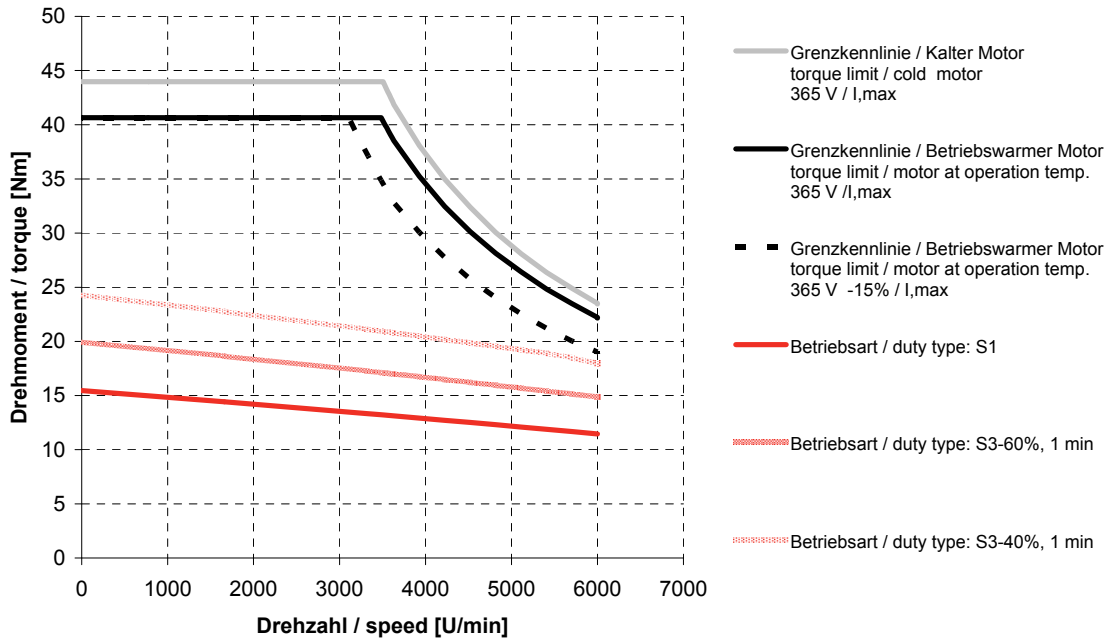
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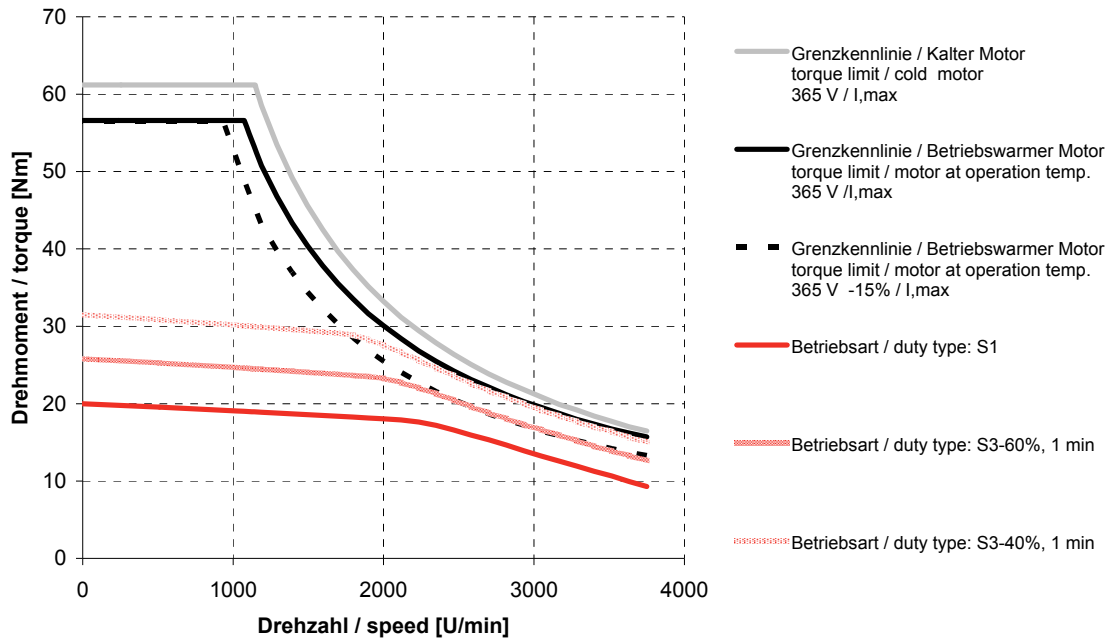
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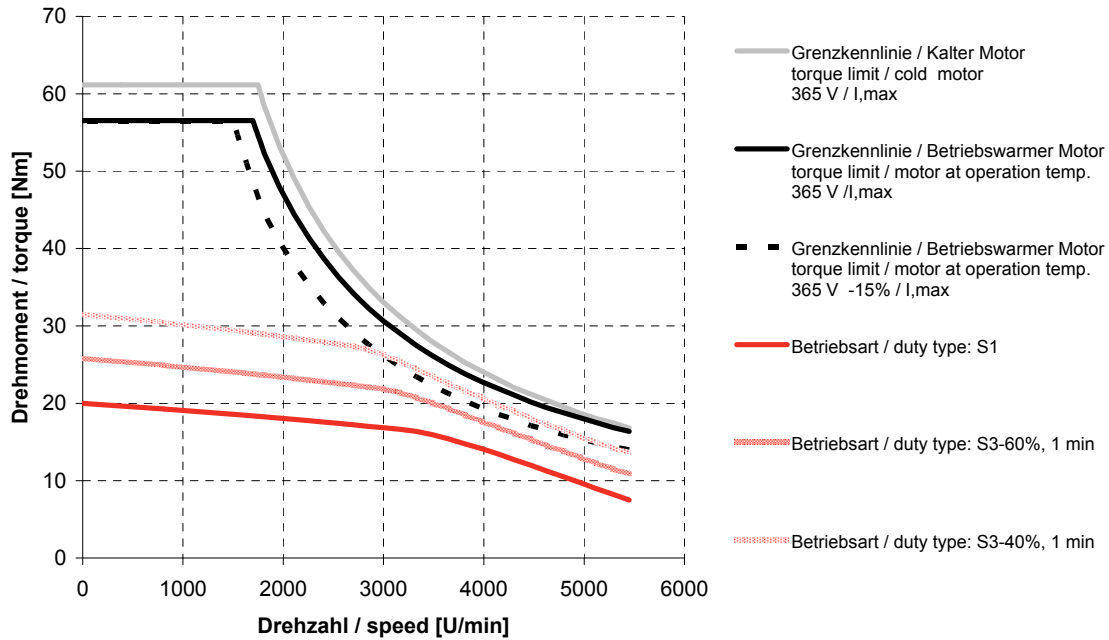
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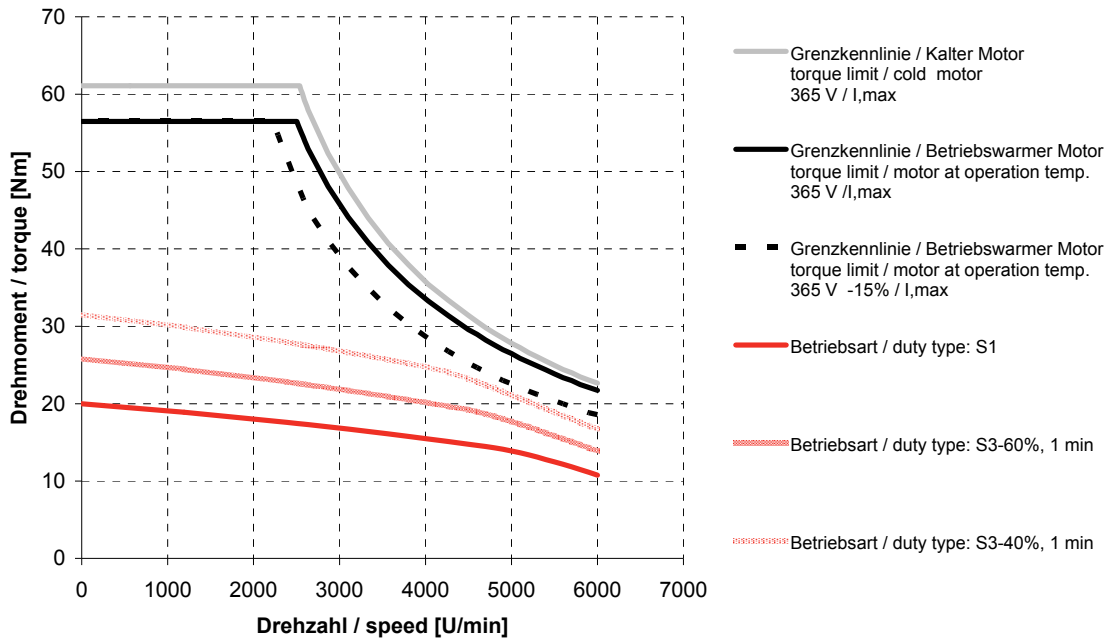
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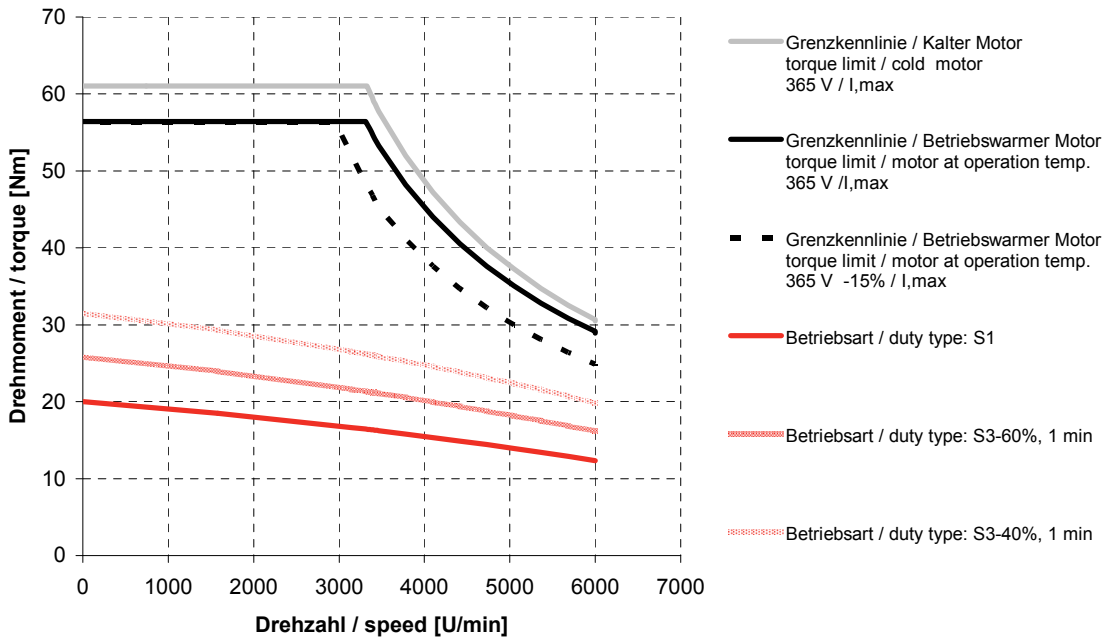
DSD2-056LO64O-30-54



DSD2-056LO64O-45-54

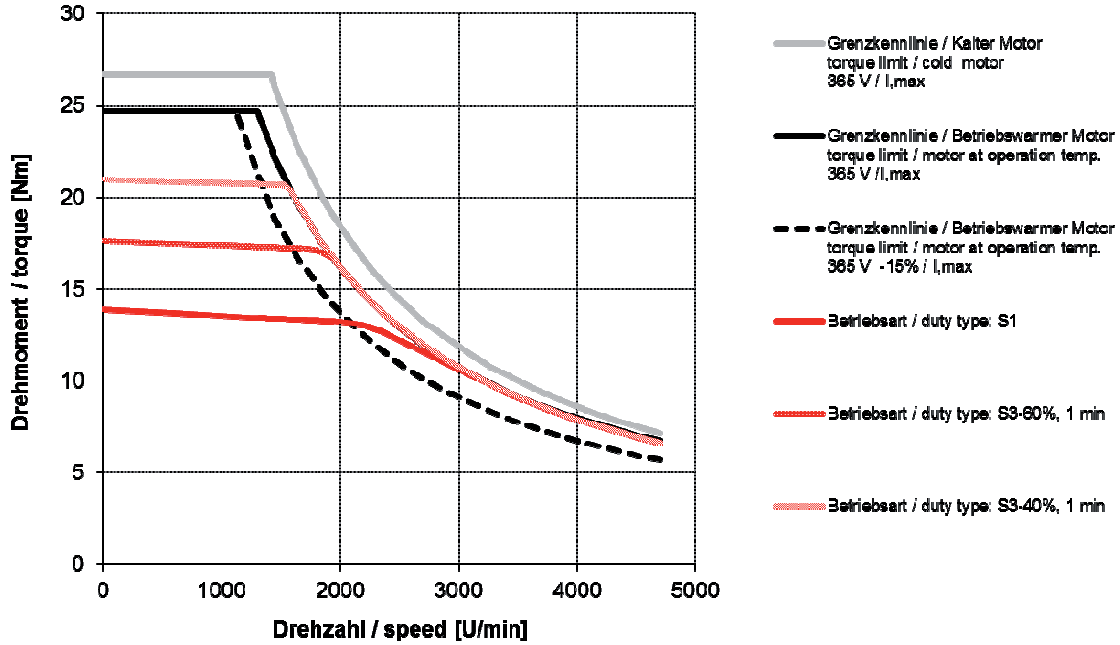


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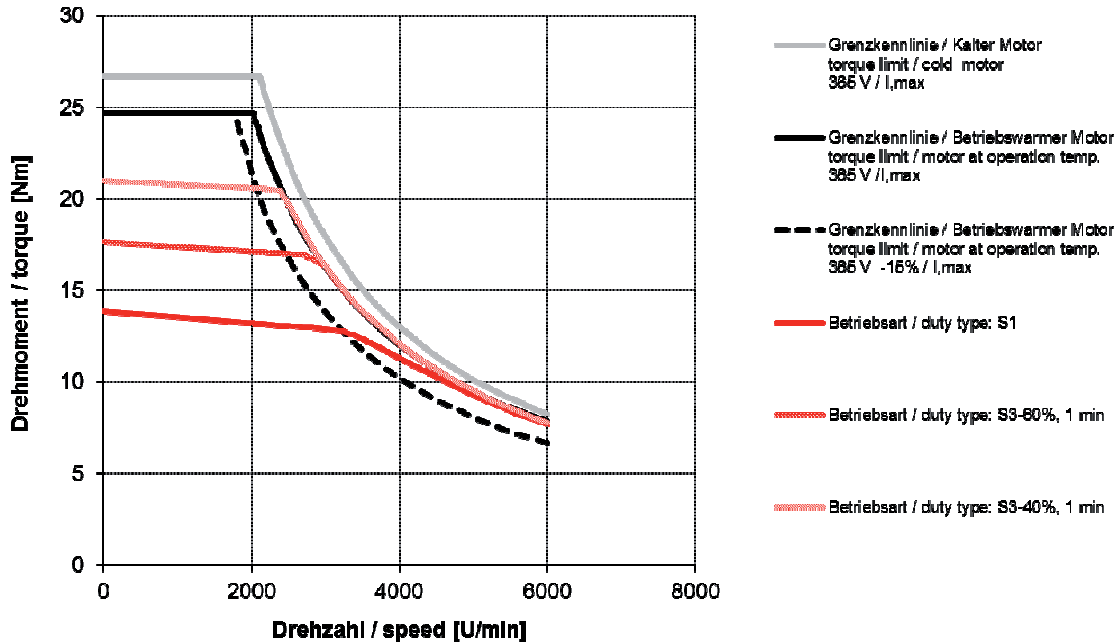


5.4.3. DSD2-056..64W-.. (water cooled)

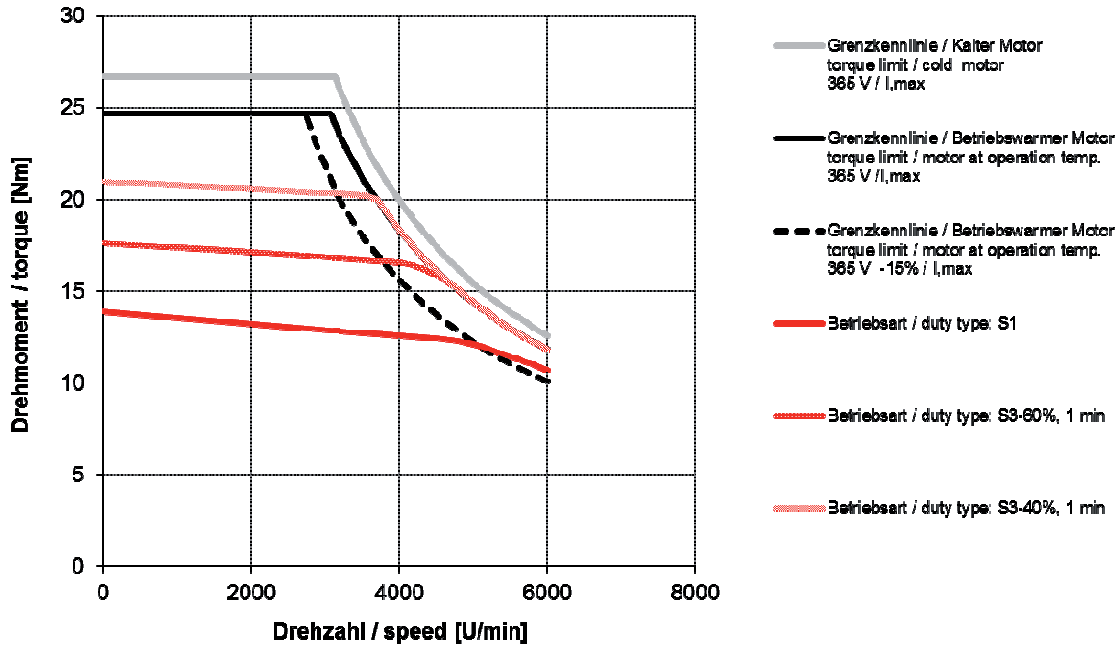
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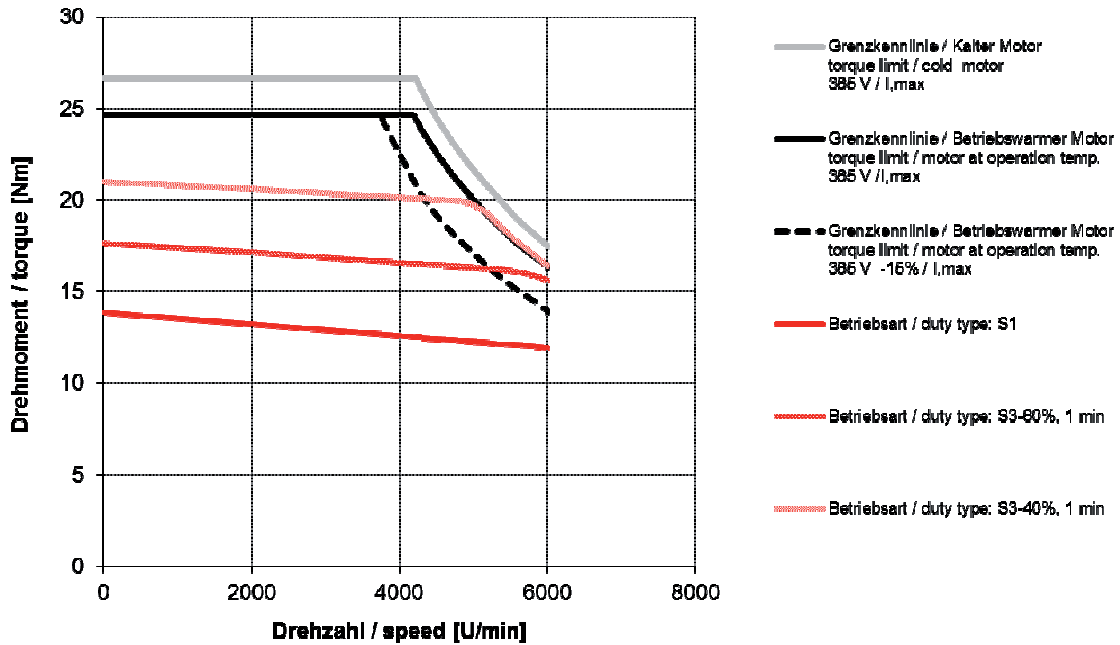
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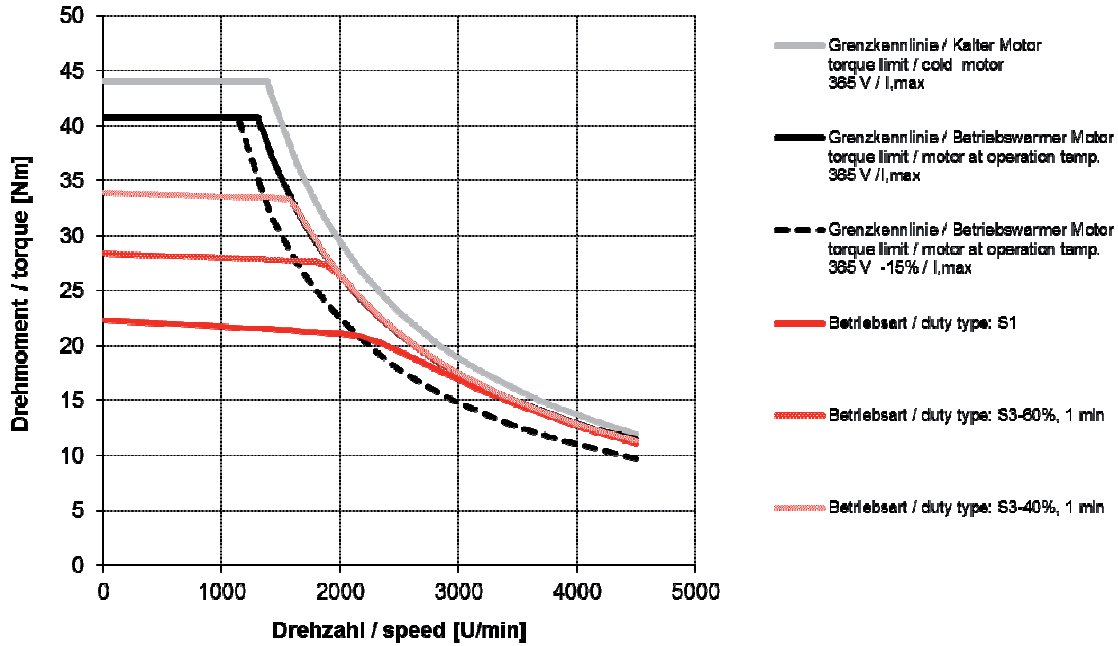
DSD2-056SO64W-45-54



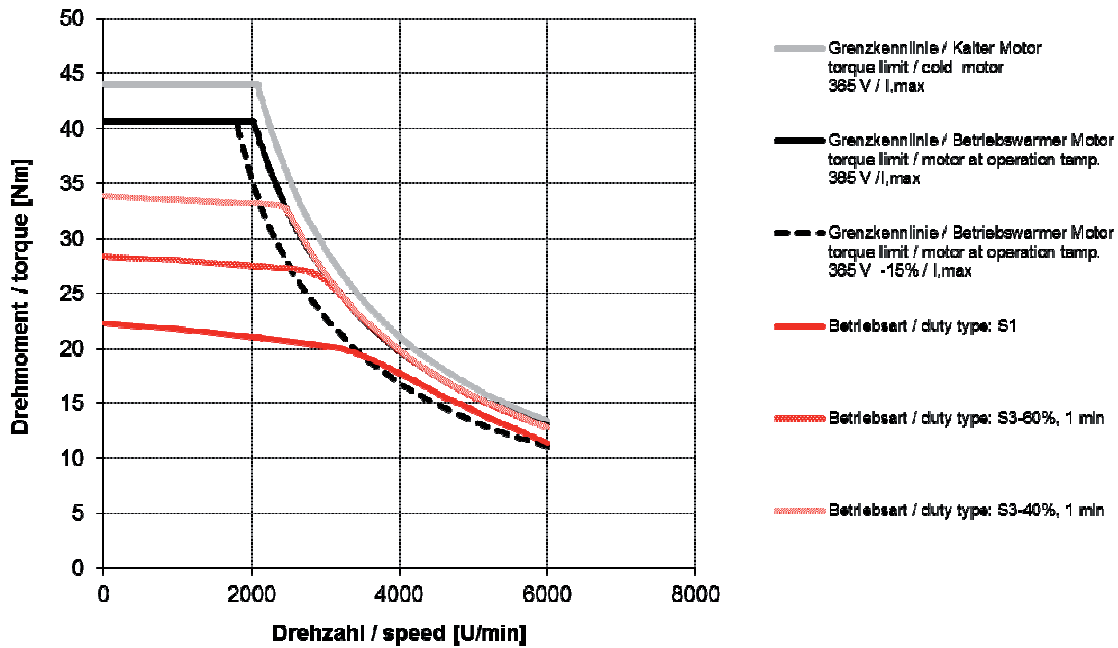
DSD2-056SO64W-60-54



DSD2-056MO64W-20-54

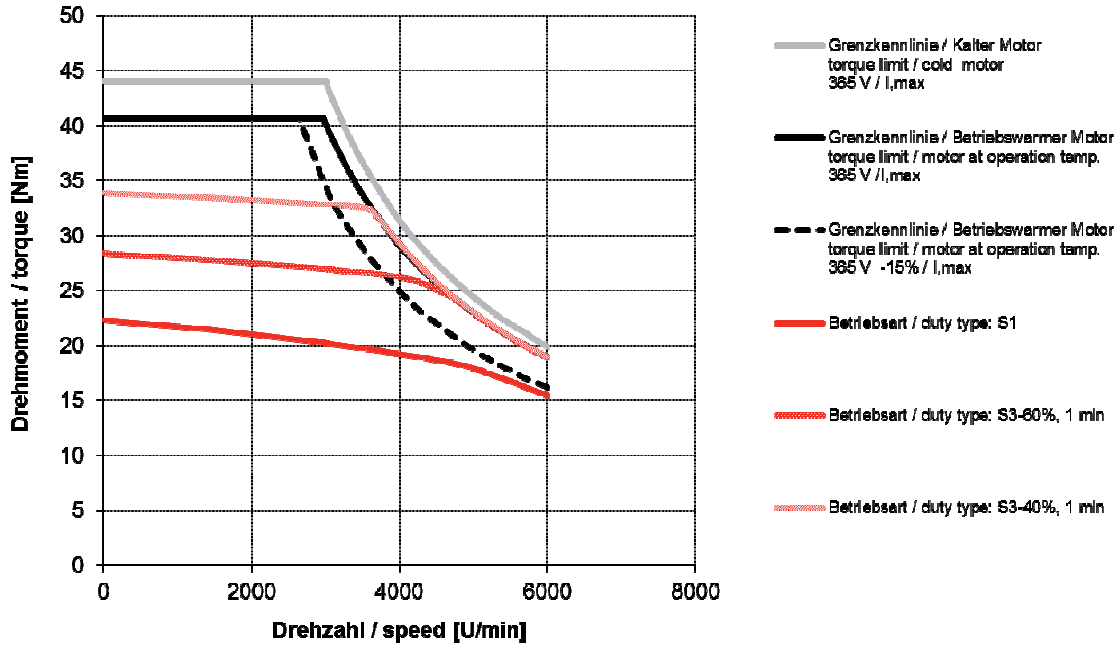


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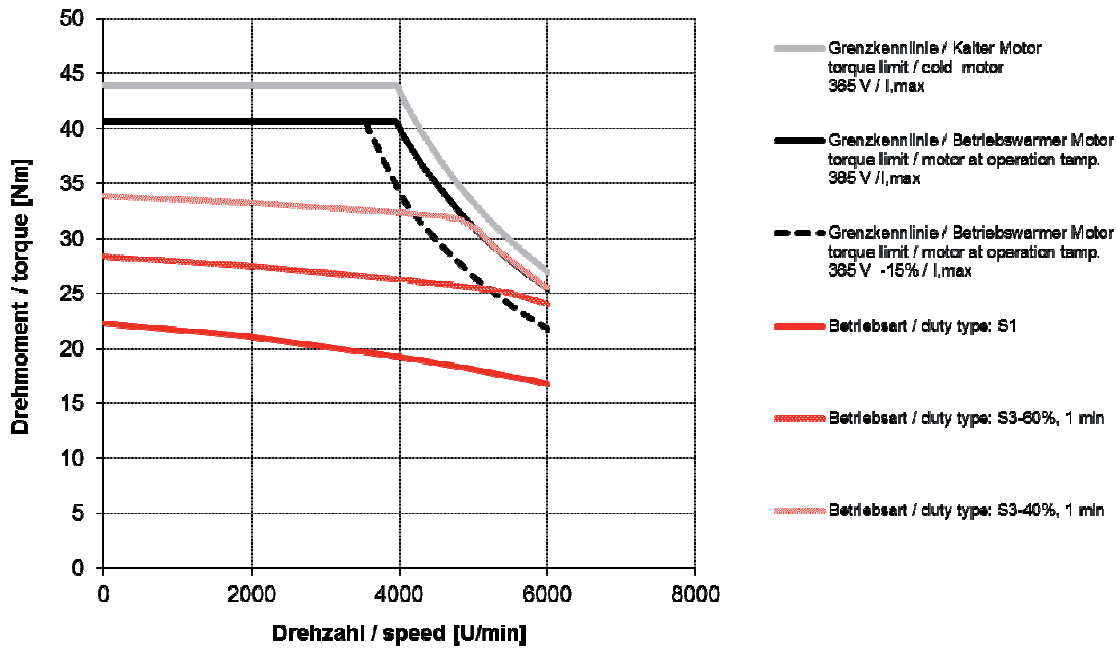




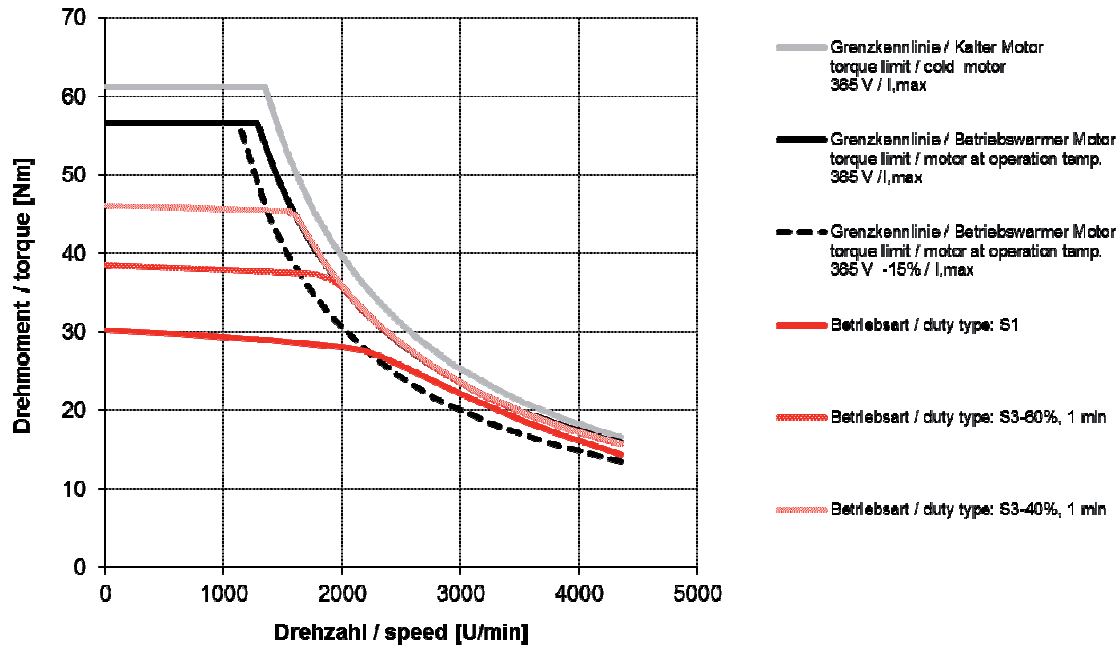
DSD2-056MO64W-45-54



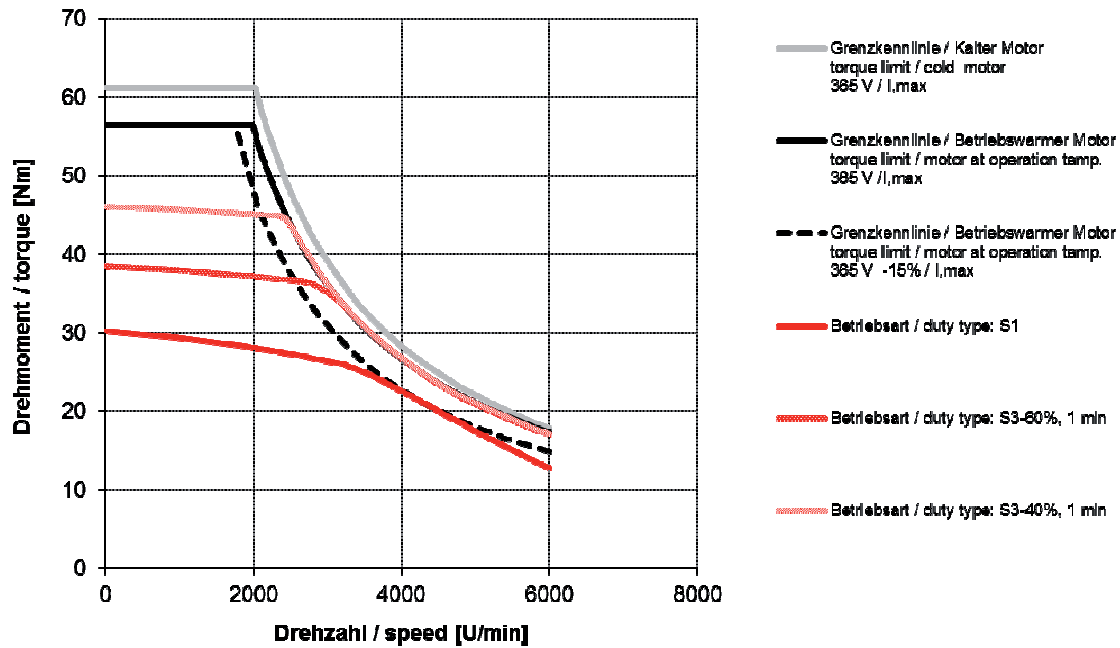
DSD2-056MO64W-60-54



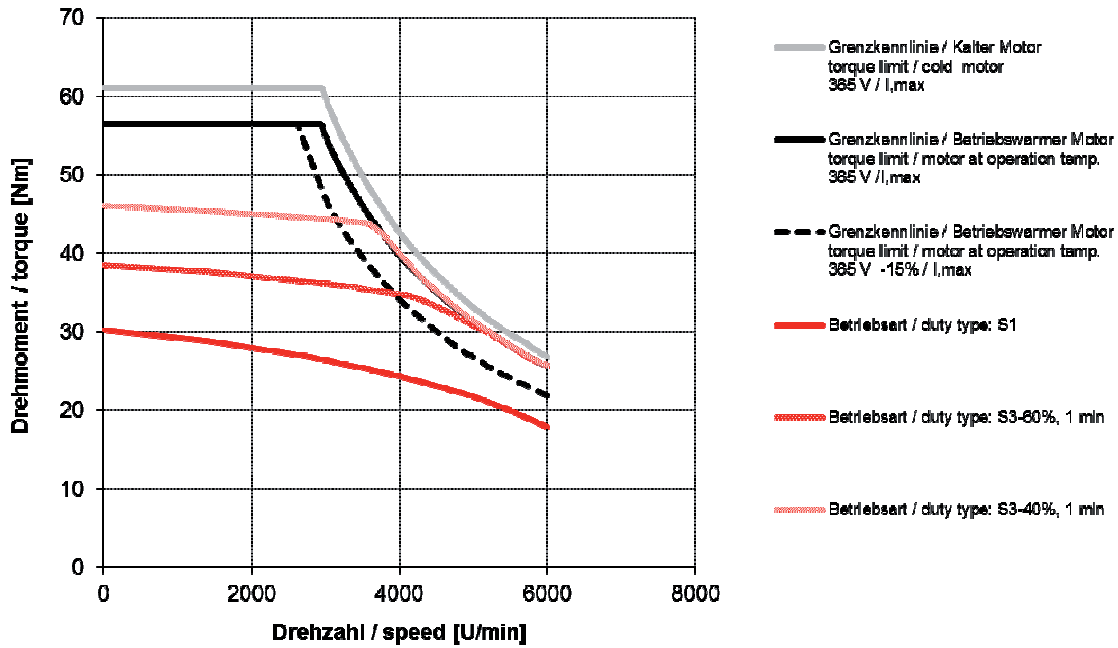
DSD2-056LO64W-20-54



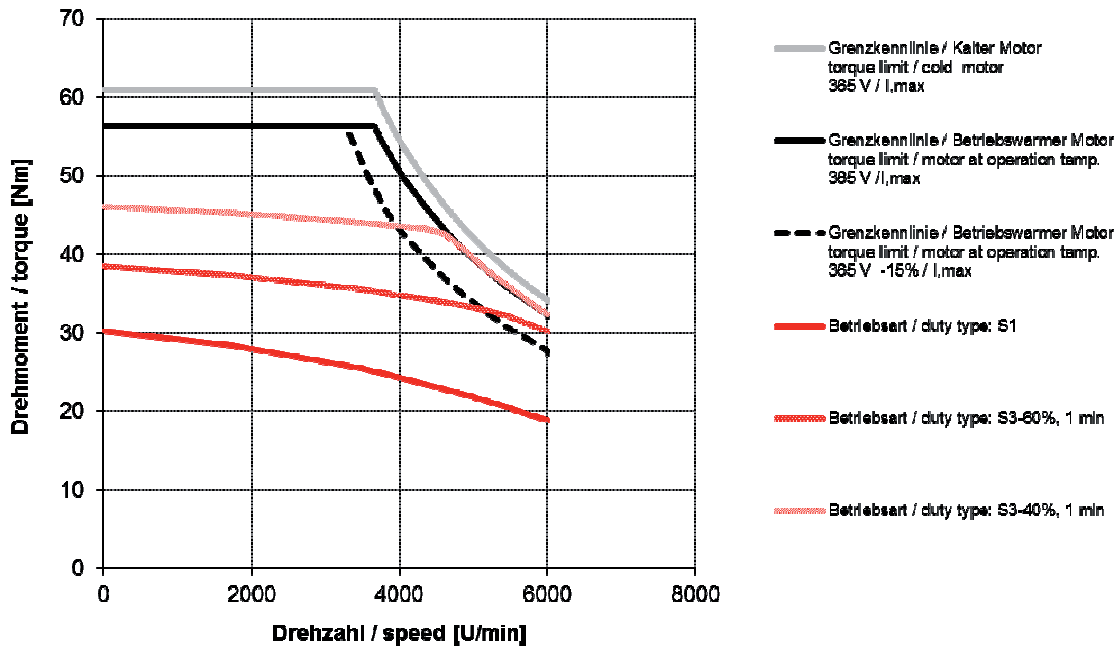
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DSD2-056LO64W-45-54



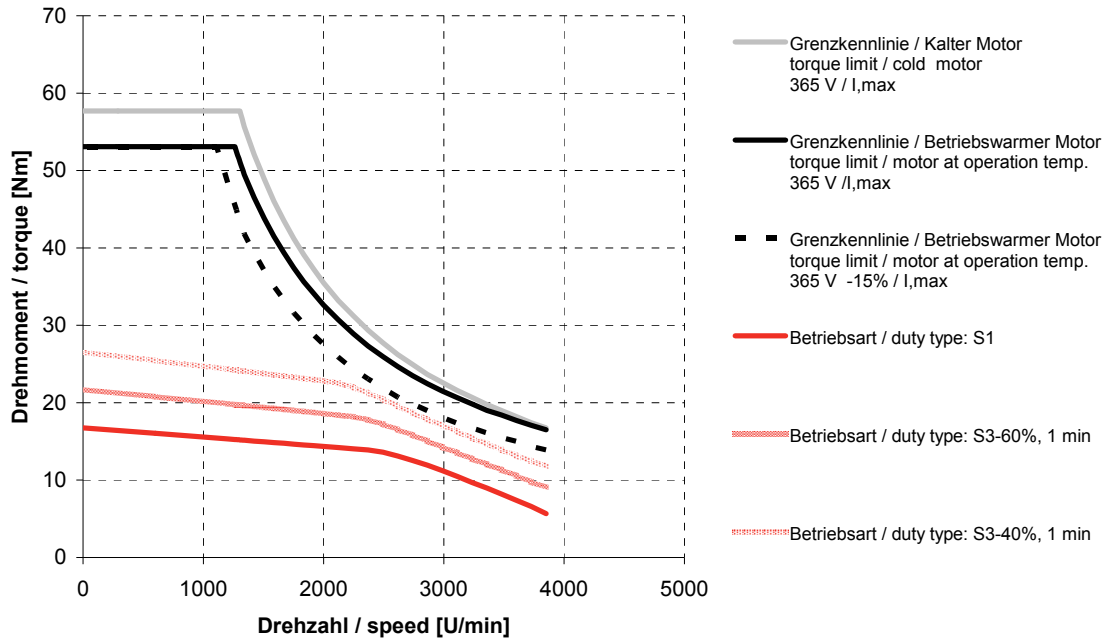
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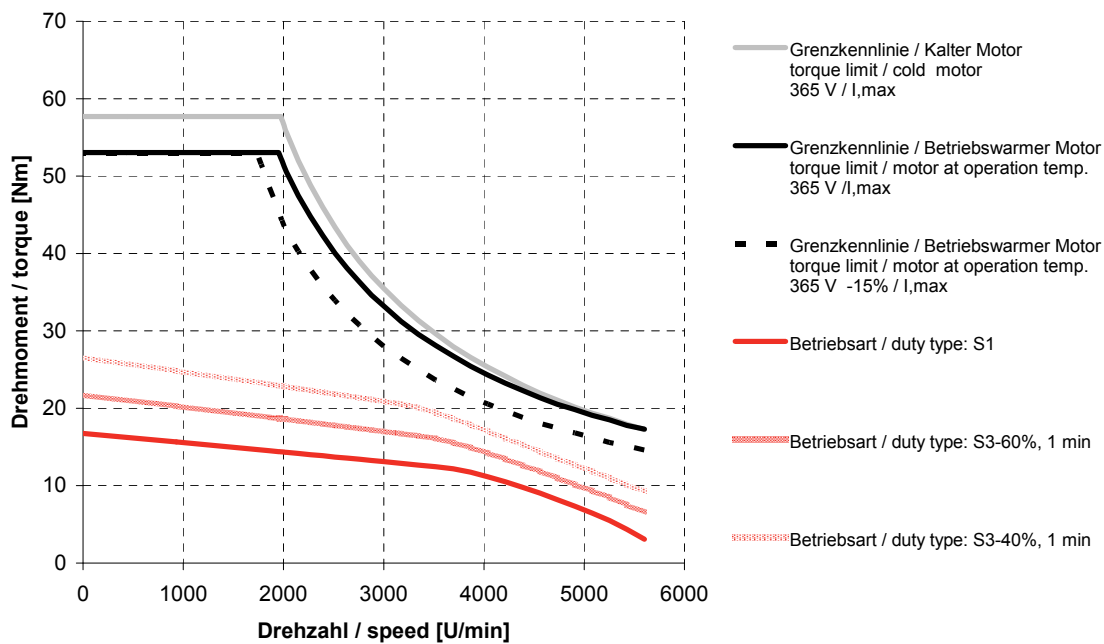
## 5.5. Motor characteristic curve DSD2-071

### 5.5.1. DSD2-071..64U.. (without fan)

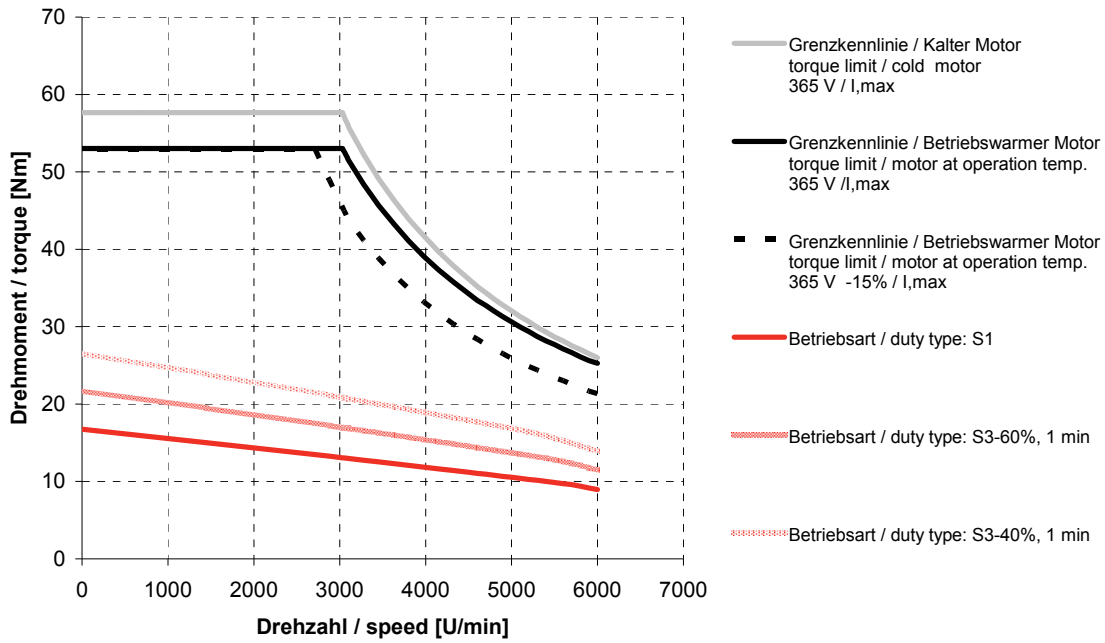
#### DSD2-071SO64U-20-54



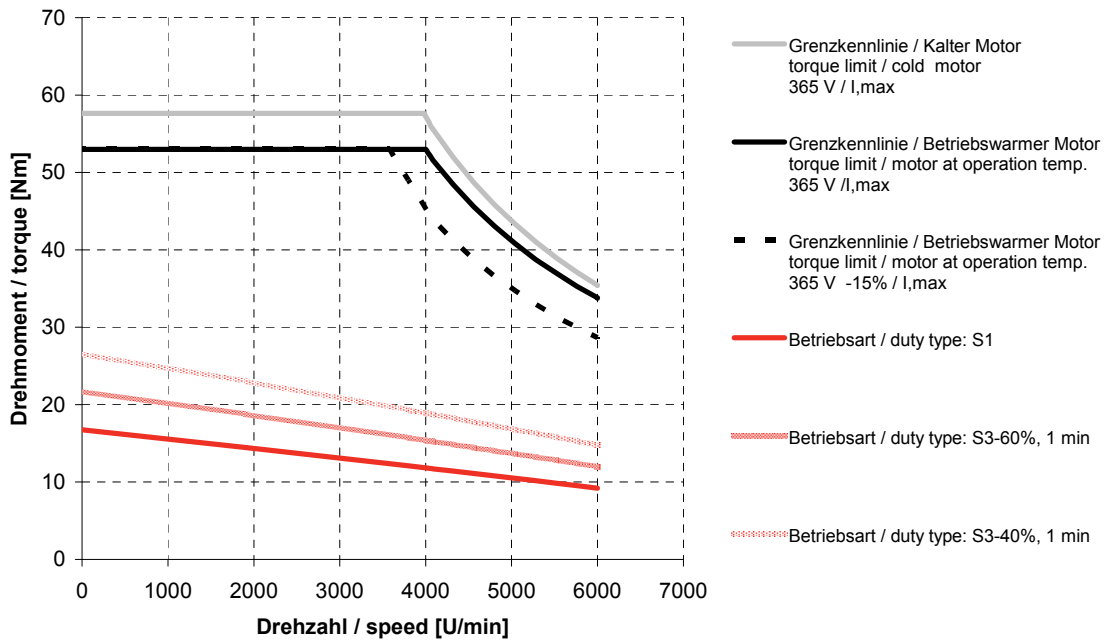
#### DSD2-071SO64U-30-54



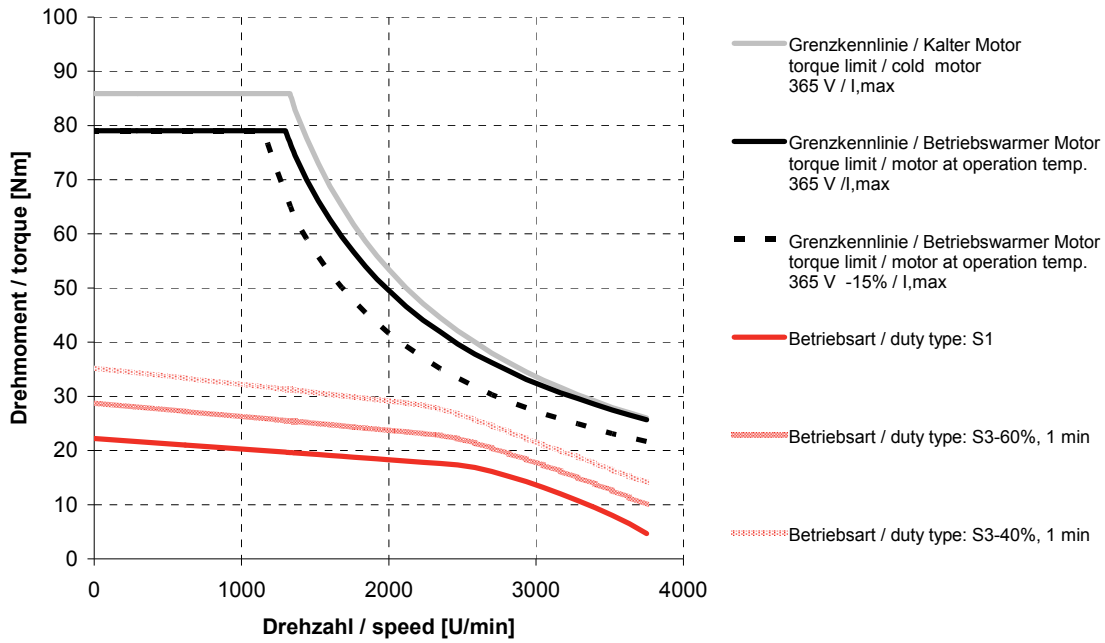
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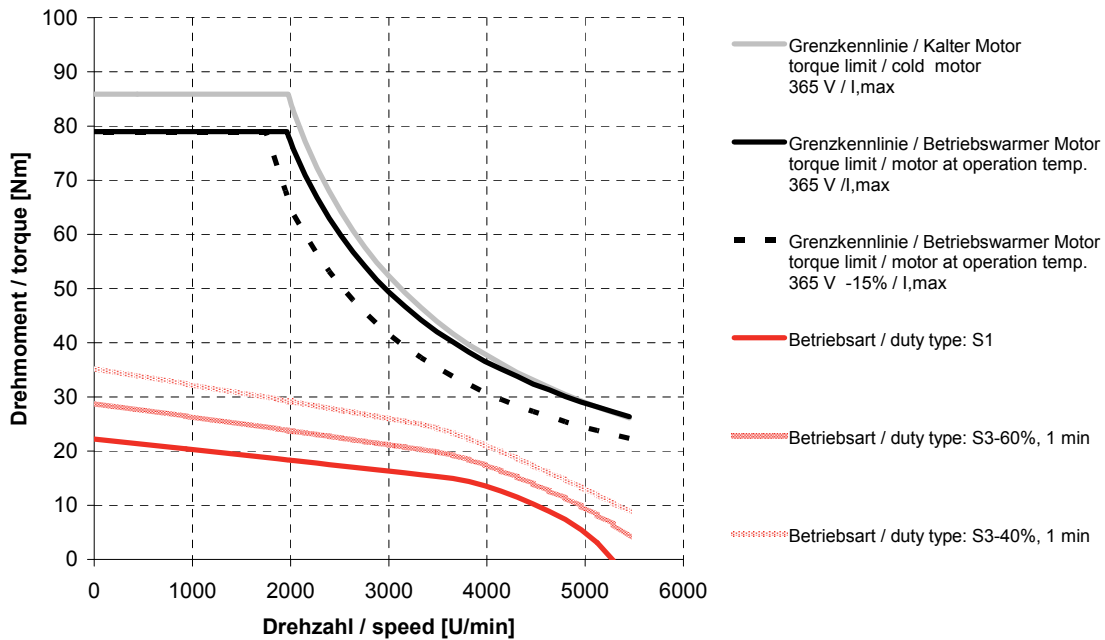
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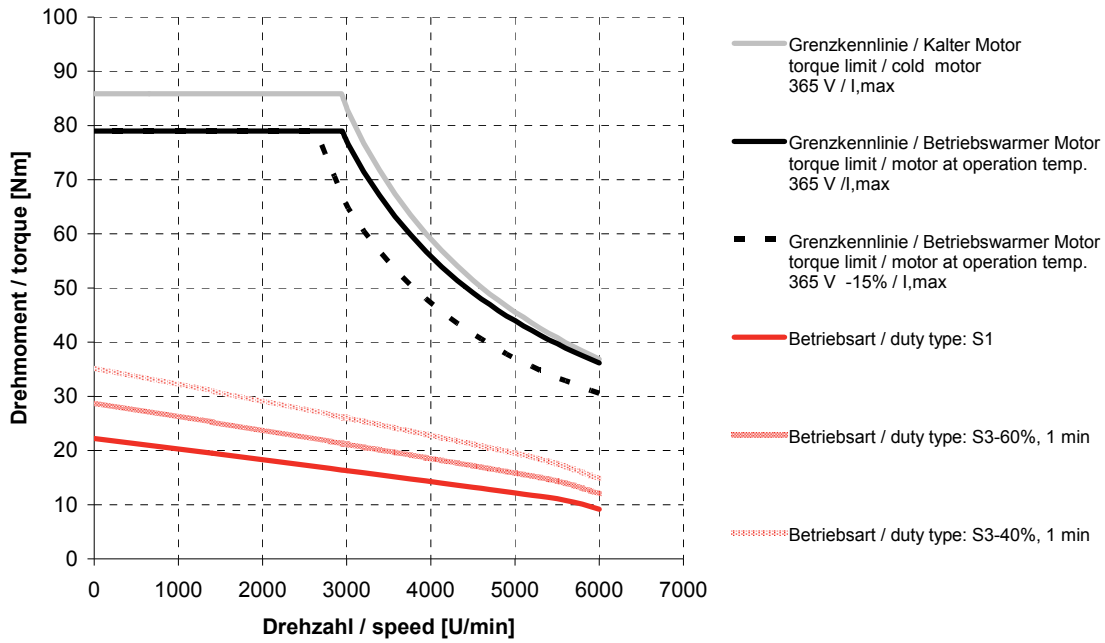
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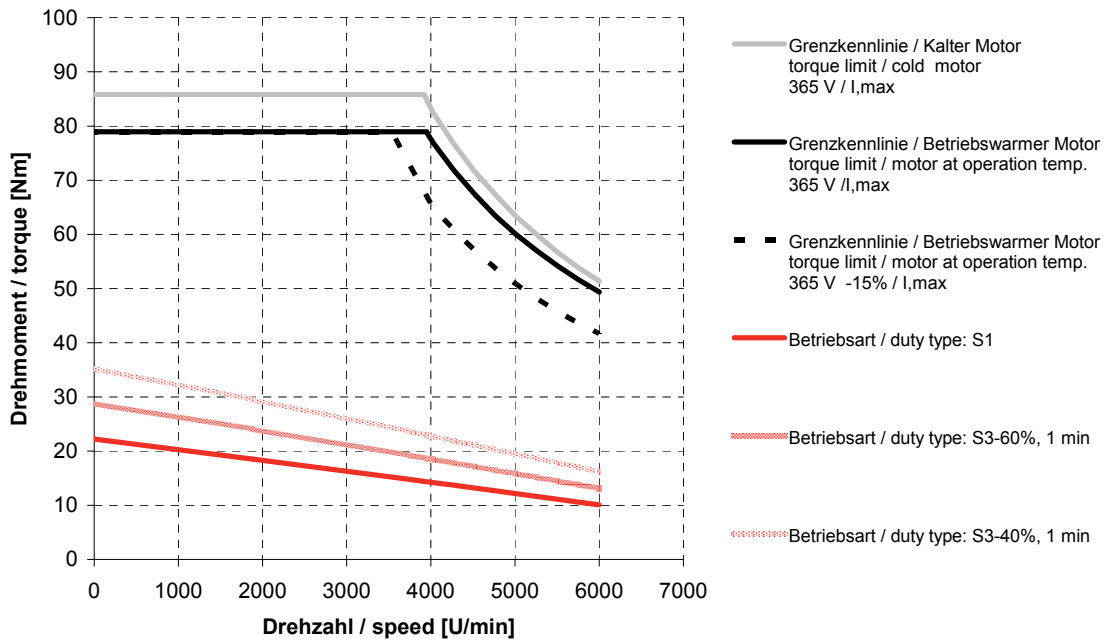
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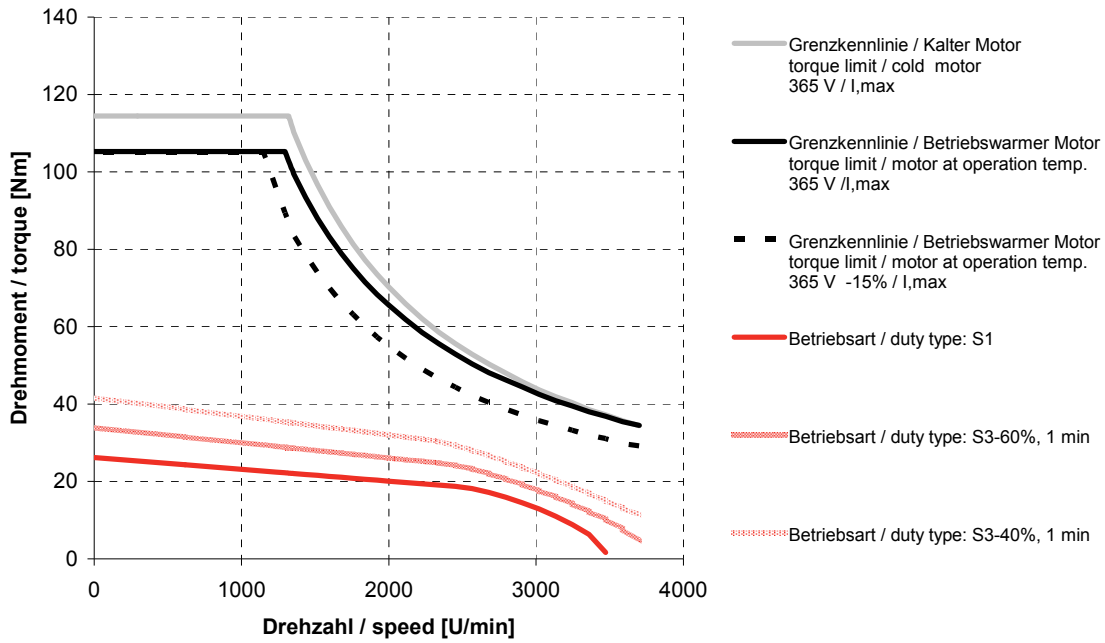
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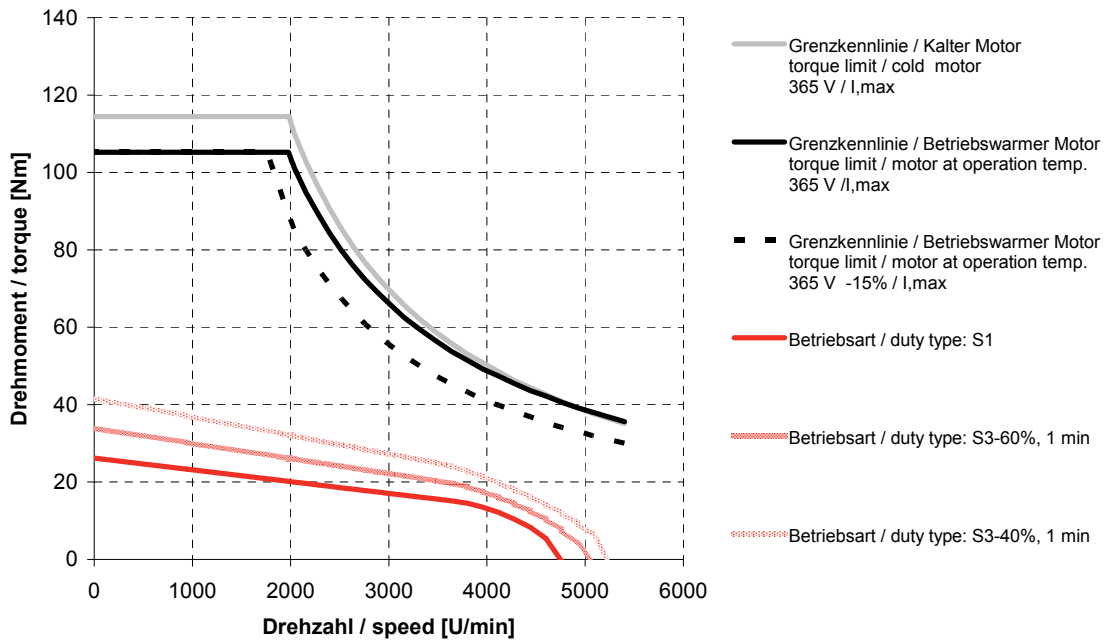
DSD2-071MO64U-60-54



DSD2-071LO64U-20-54

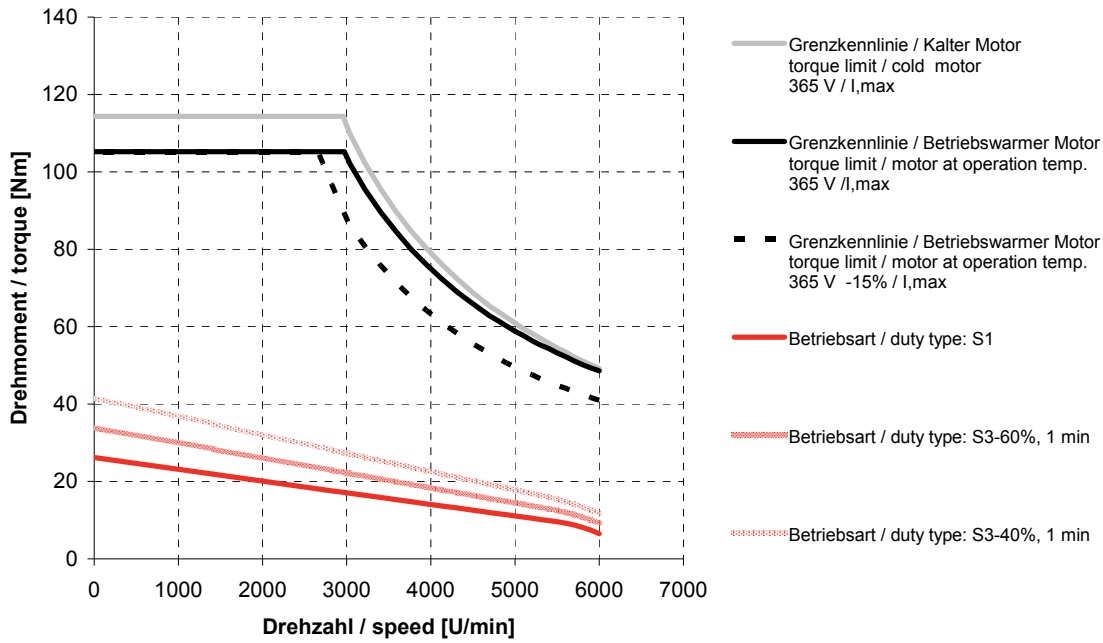


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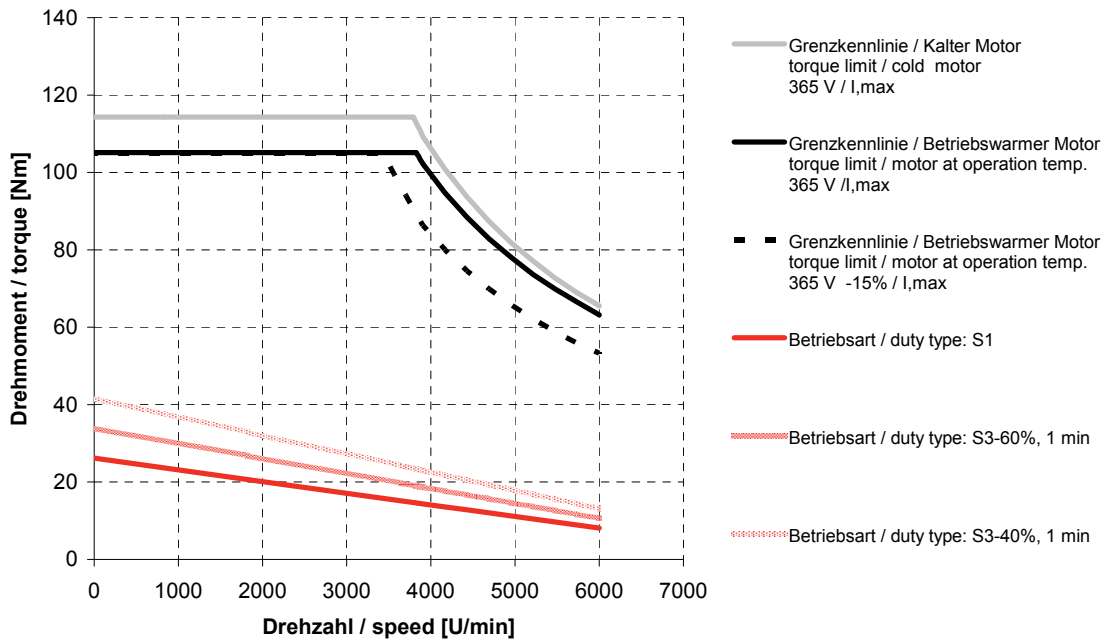




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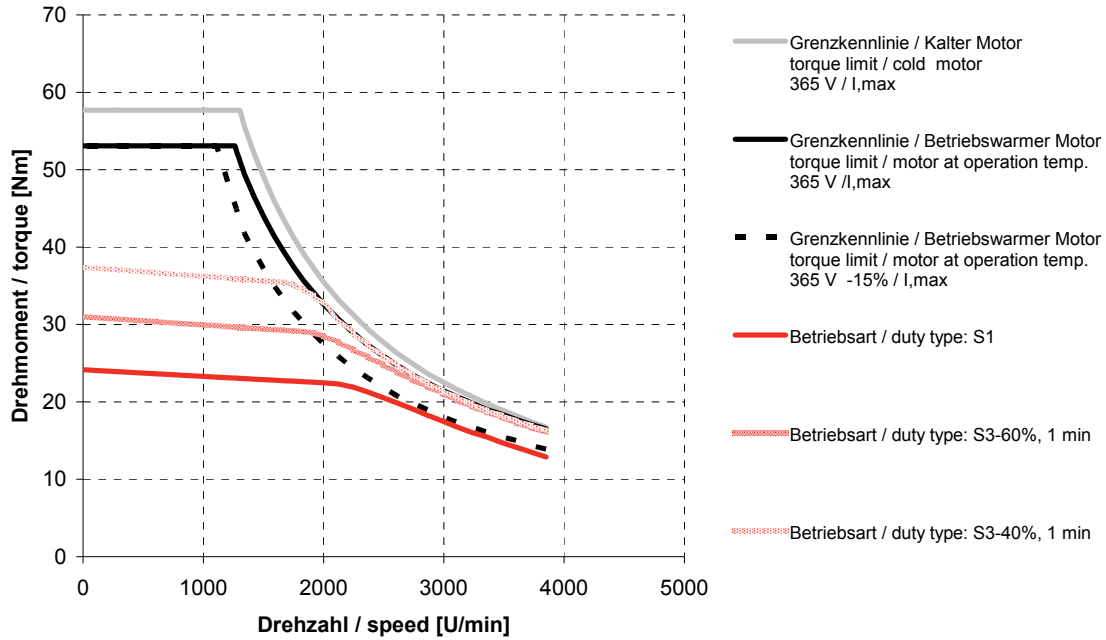


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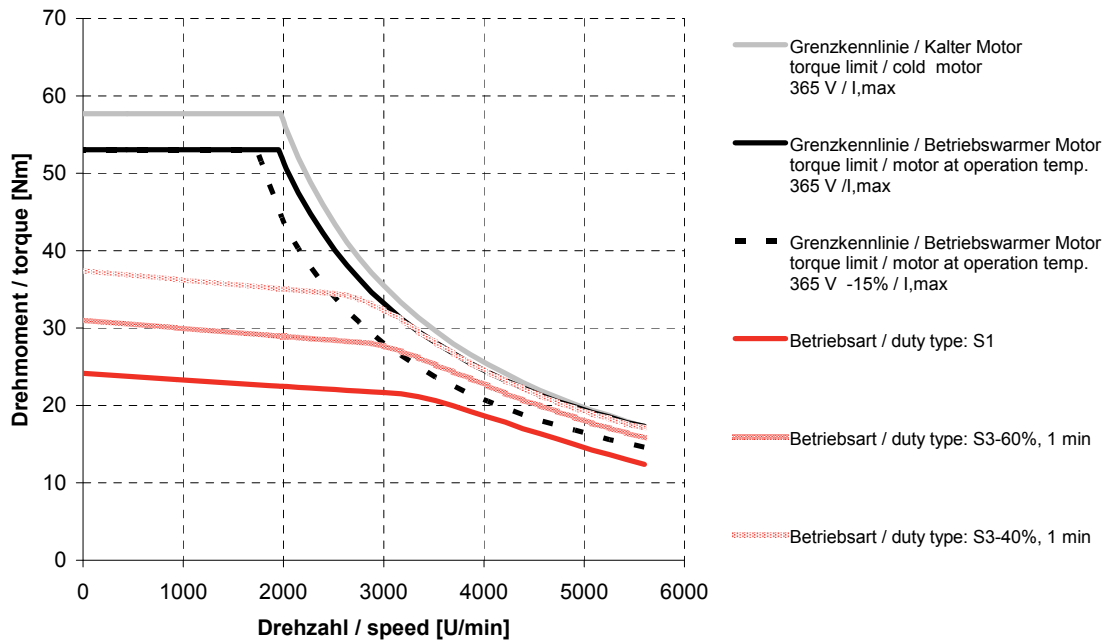


5.5.2. DSD2-071..64O-.. (with fan)

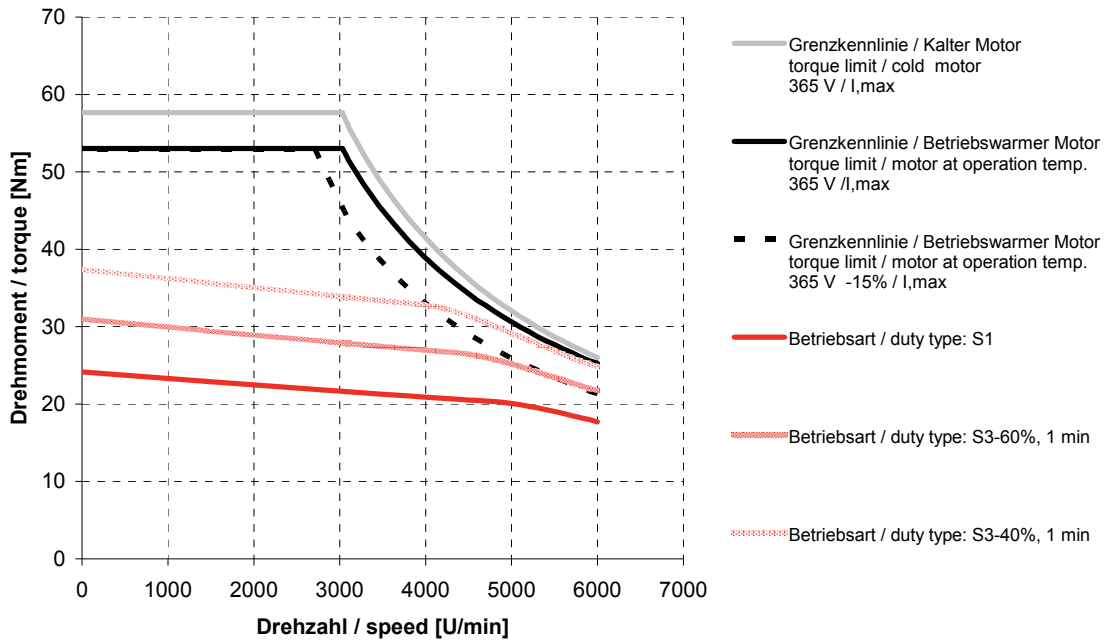
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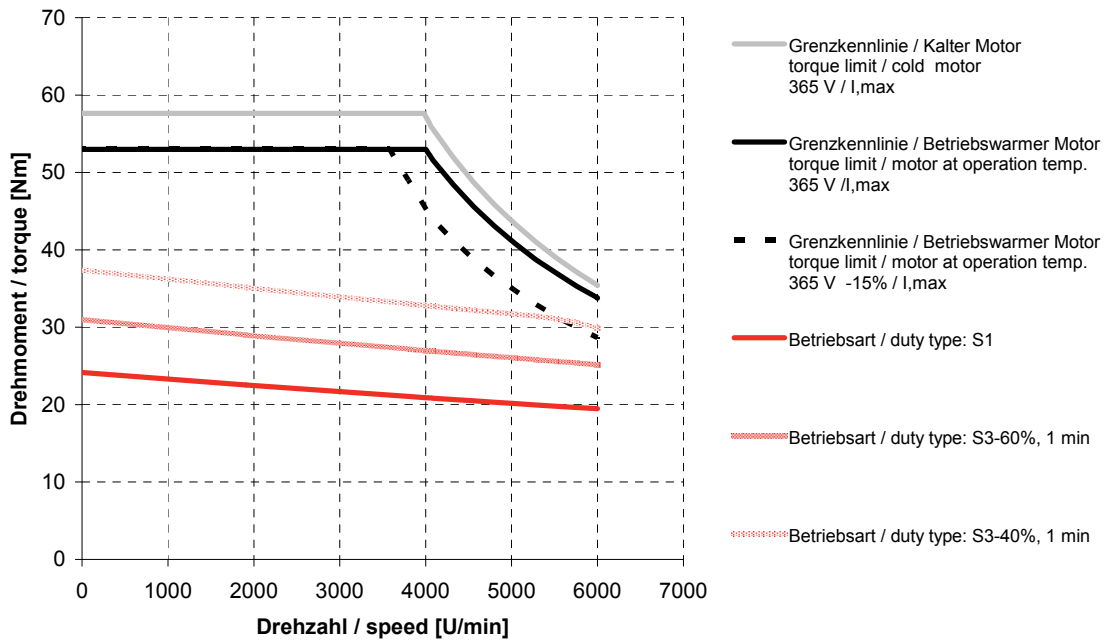
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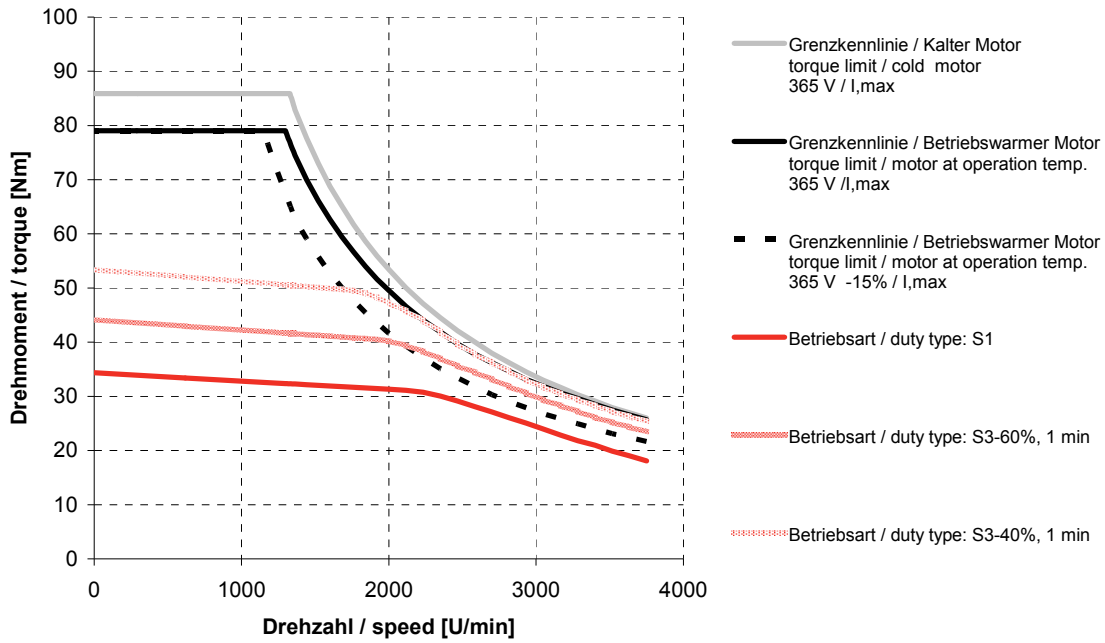
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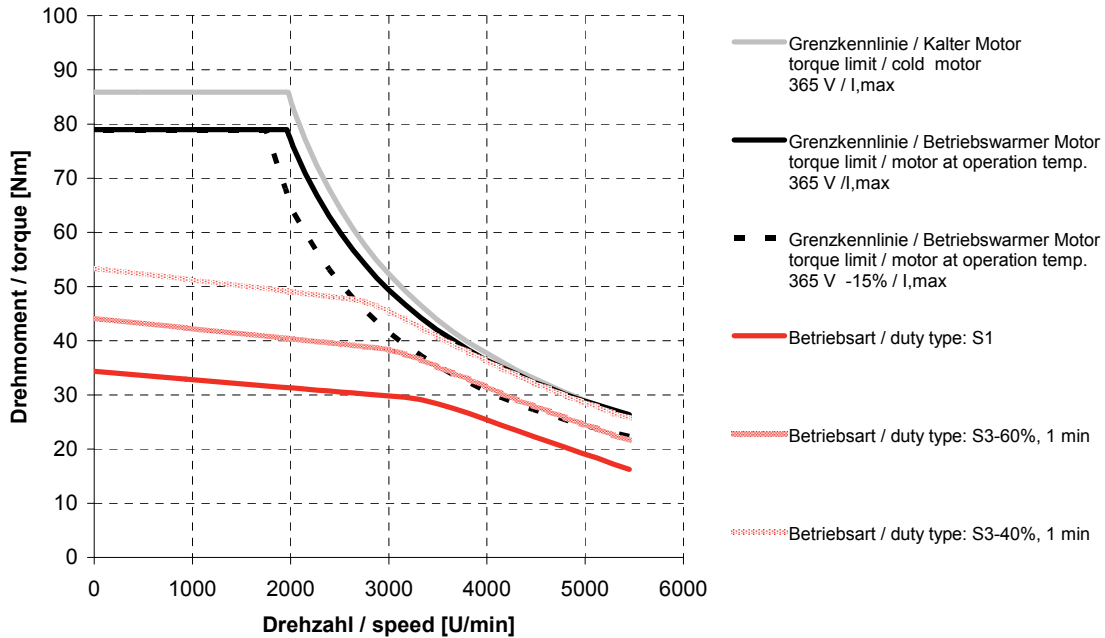
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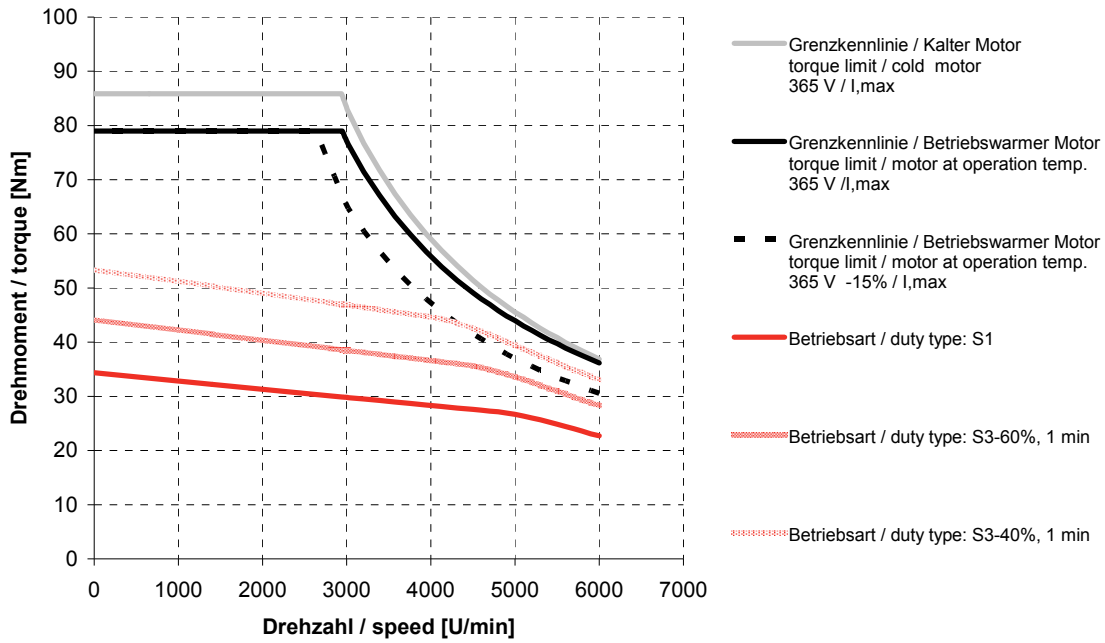
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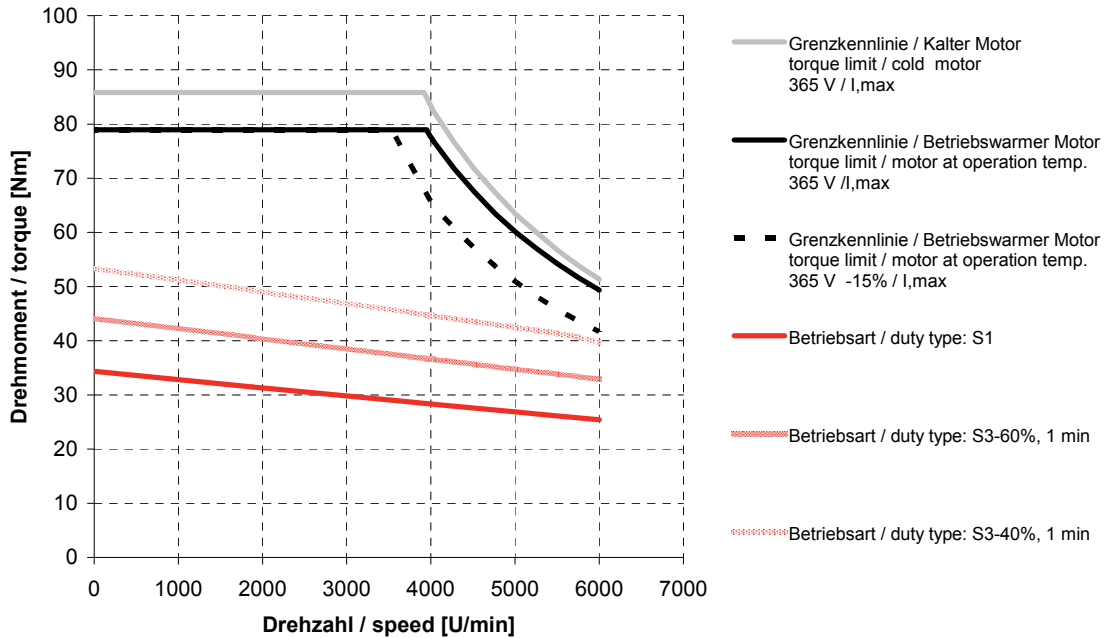
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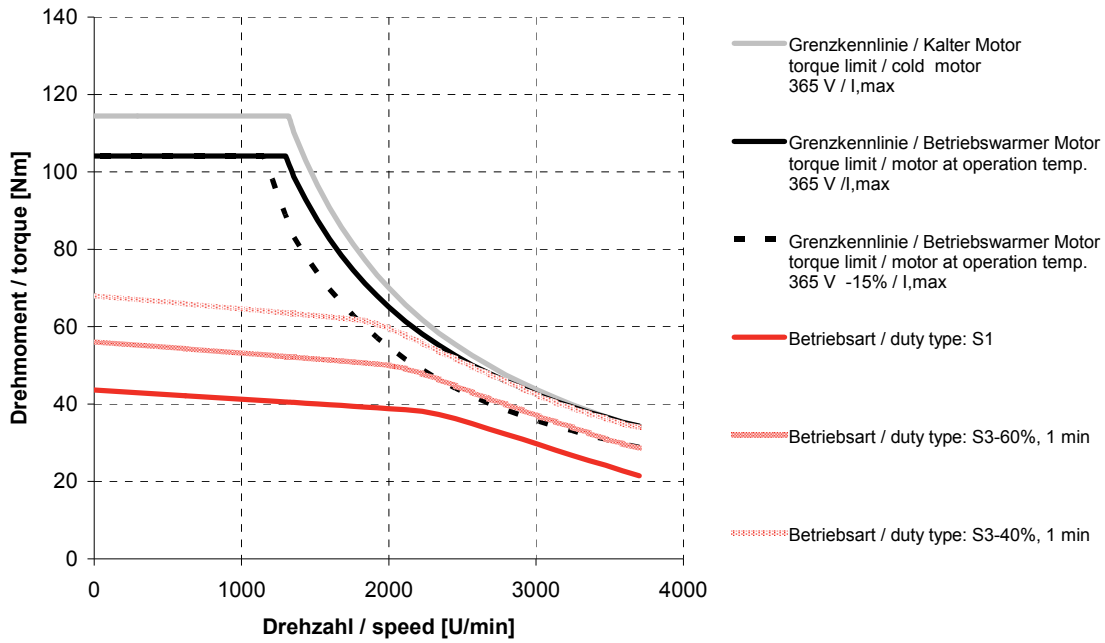
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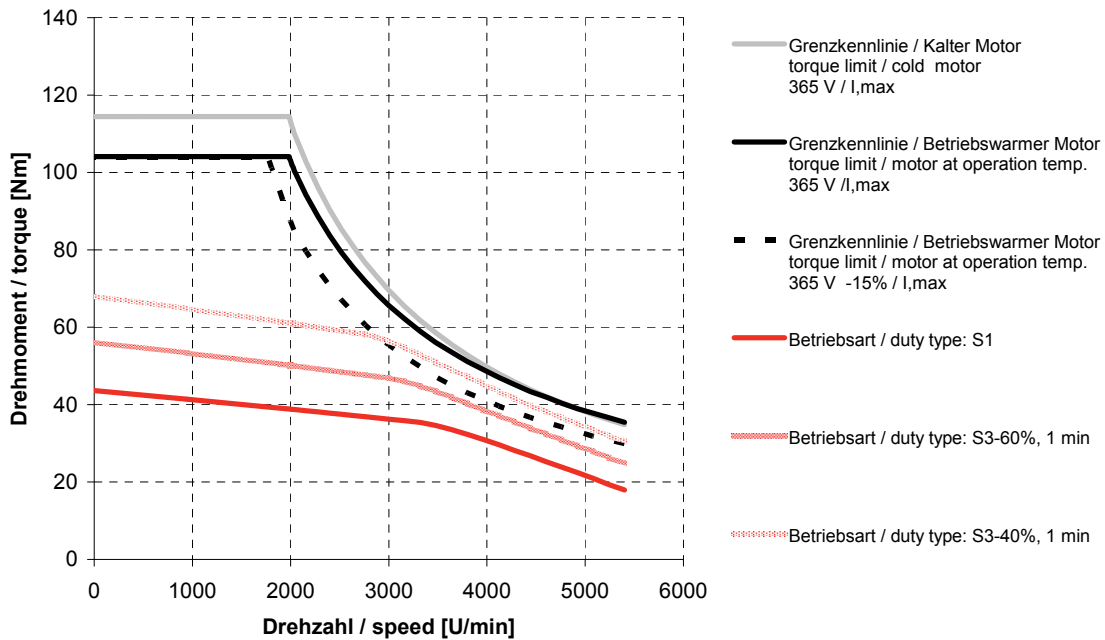
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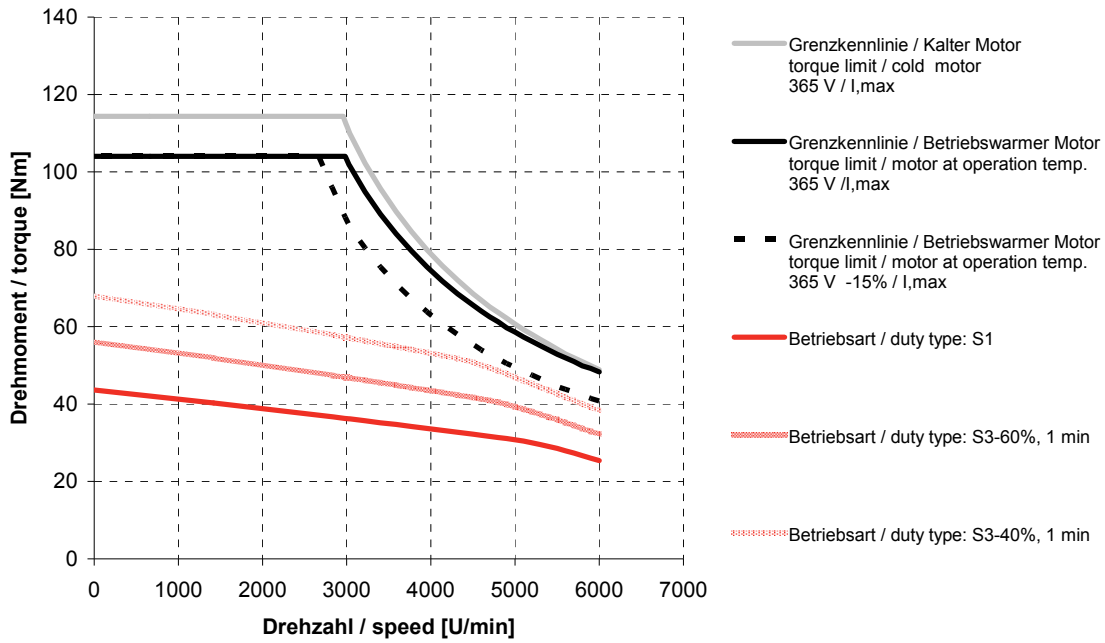
DSD2-071LO64O-20-54



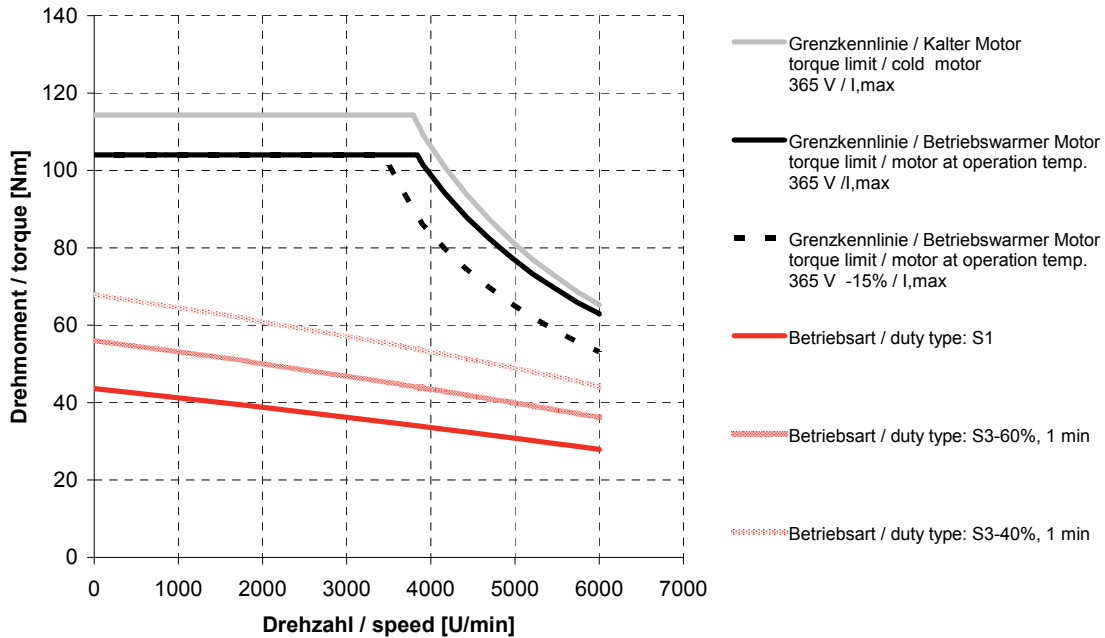
DSD2-071LO64O-30-54



DSD2-071LO64O-45-54

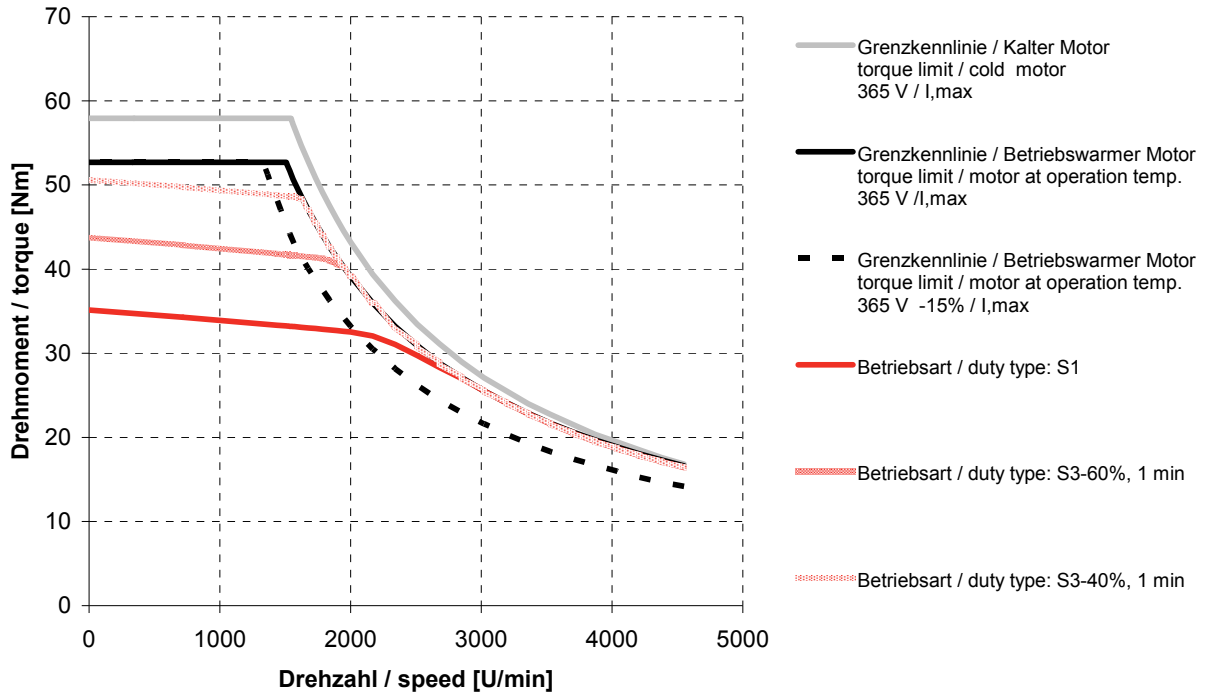


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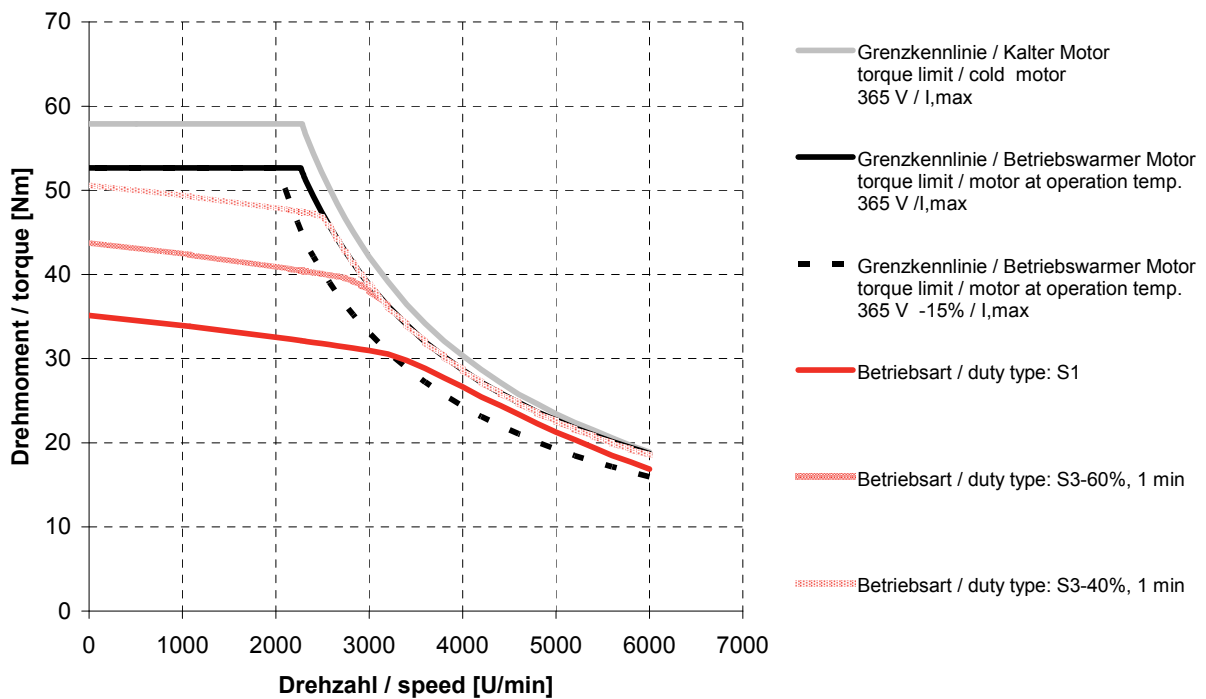


5.5.3. DSD2-071..64W-.. (water cooled)

DSD2-071SO64W-20-54

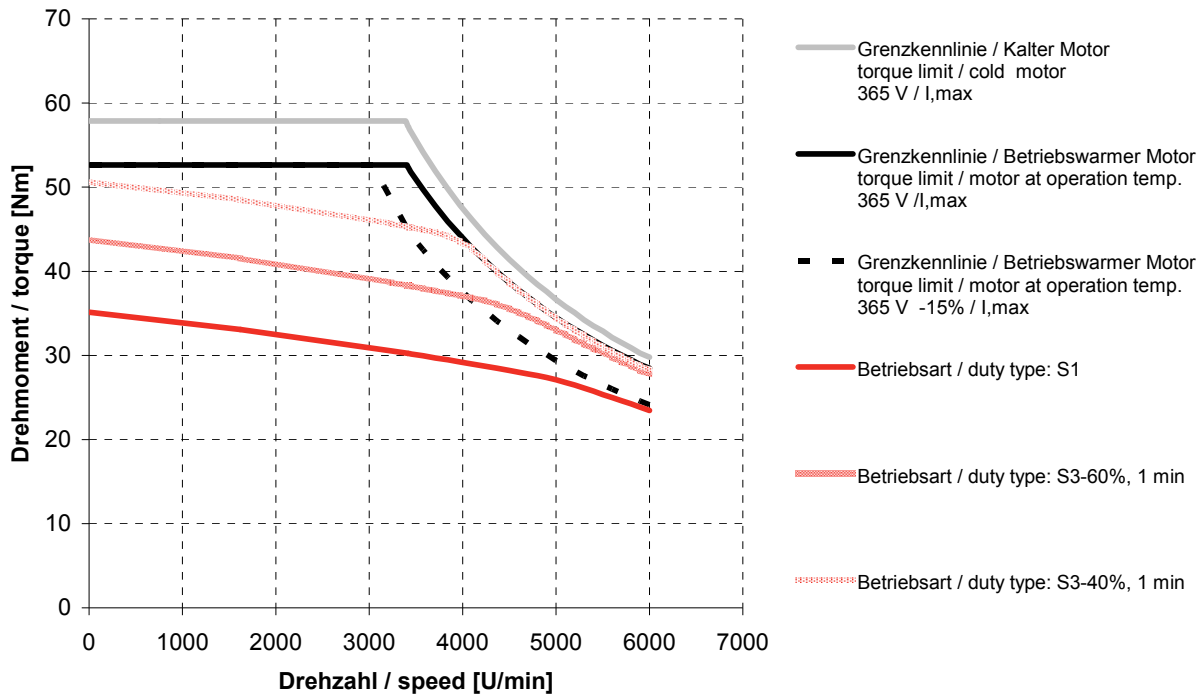


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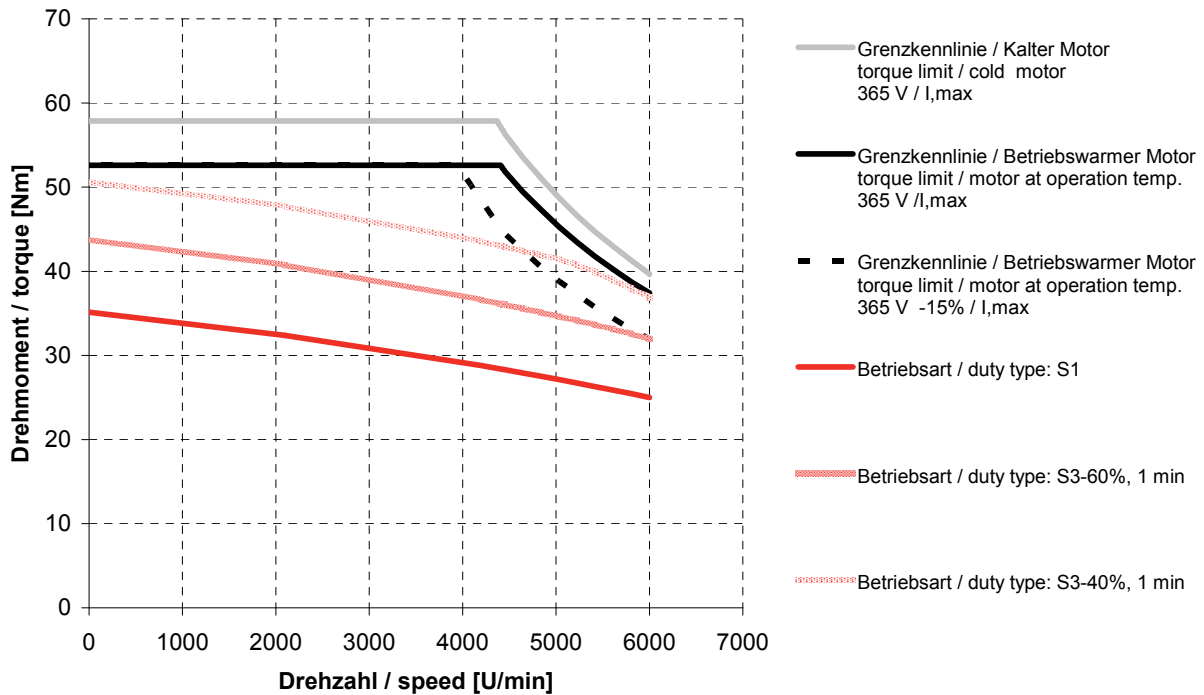




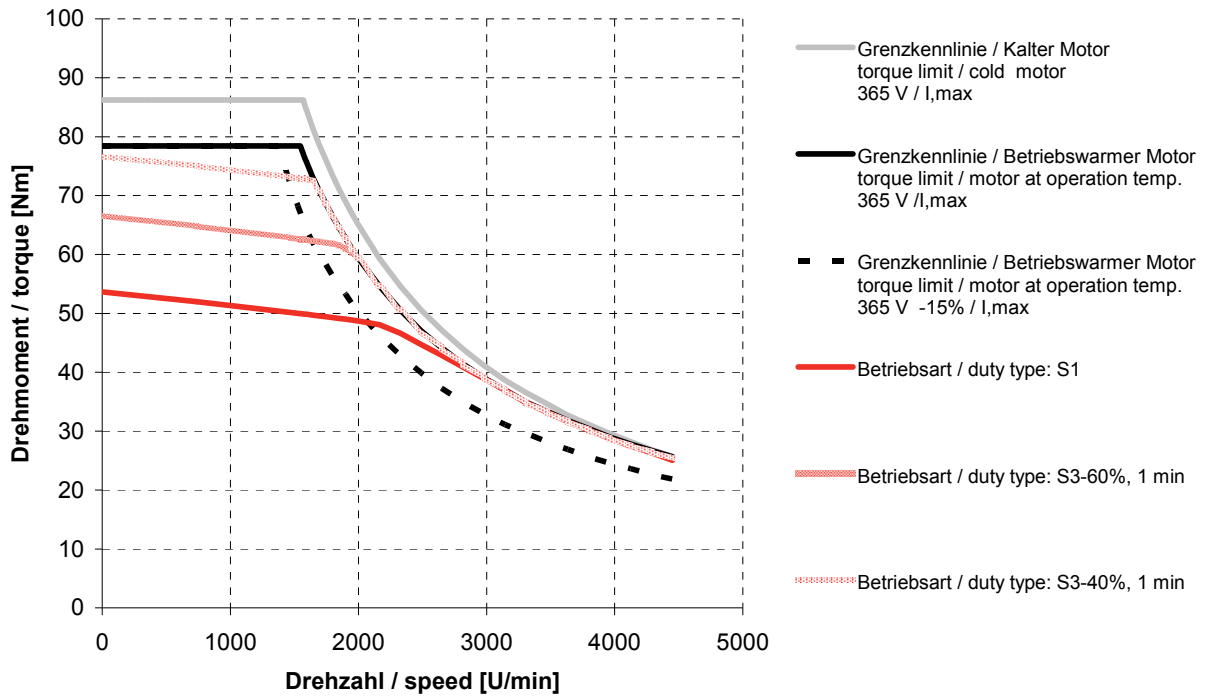
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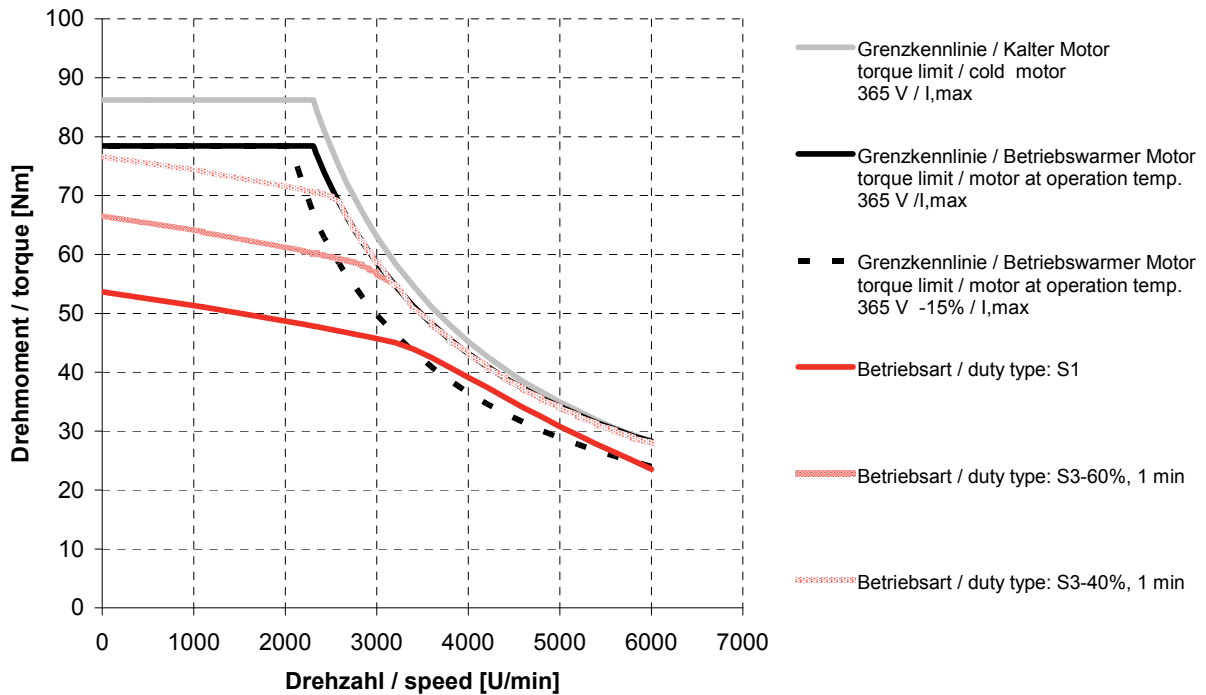
DSD2-071SO64W-60-54



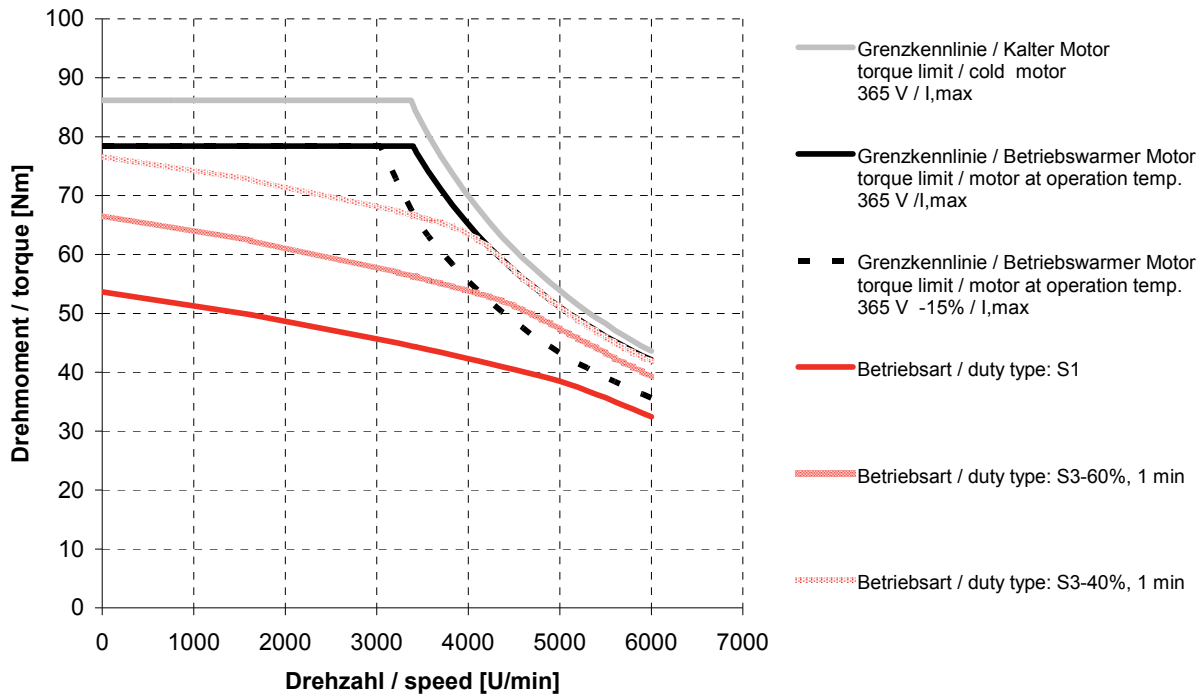
DSD2-071MO64W-20-54



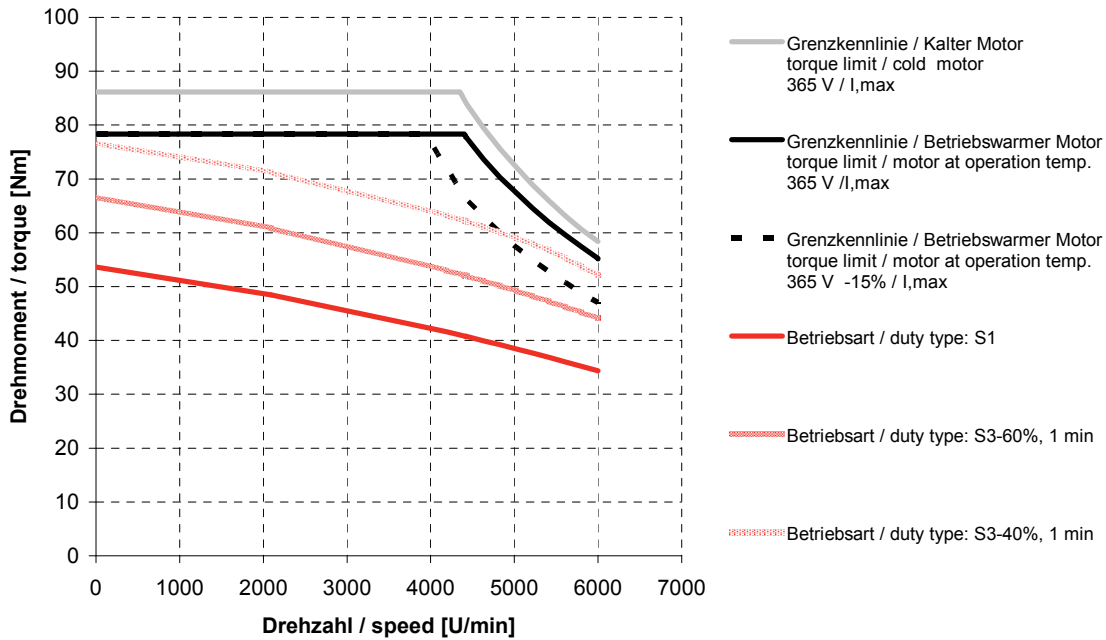
DSD2-071MO64W-30-54



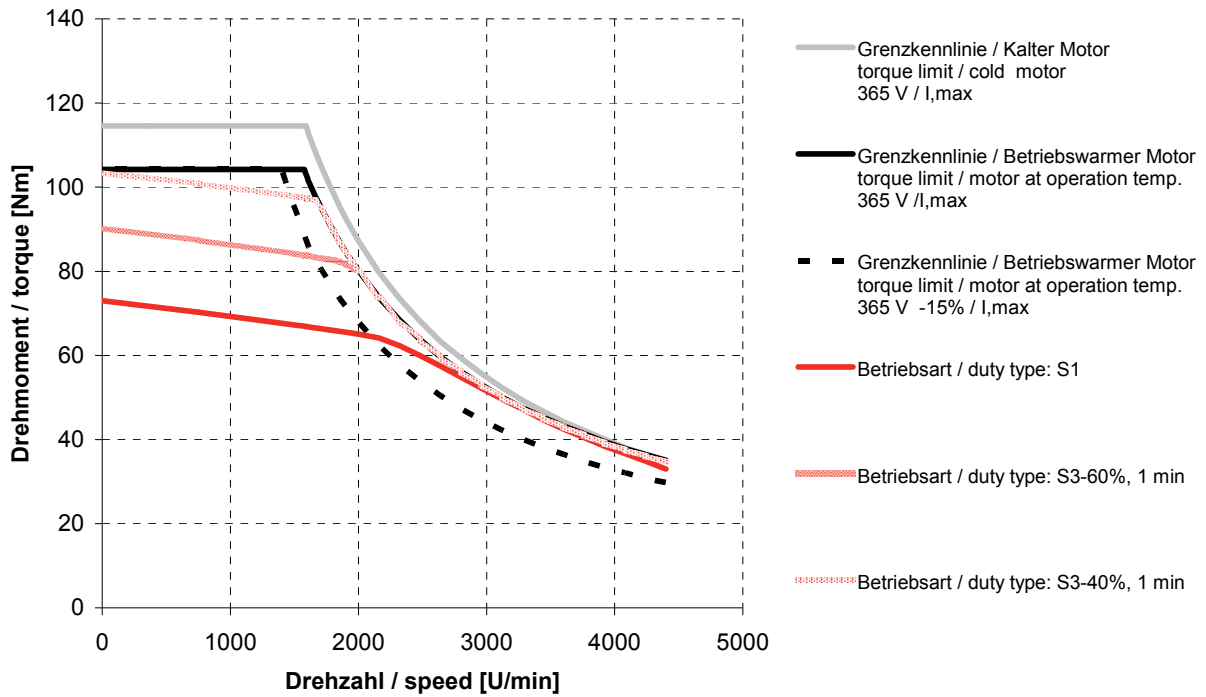
DSD2-071MO64W-45-54



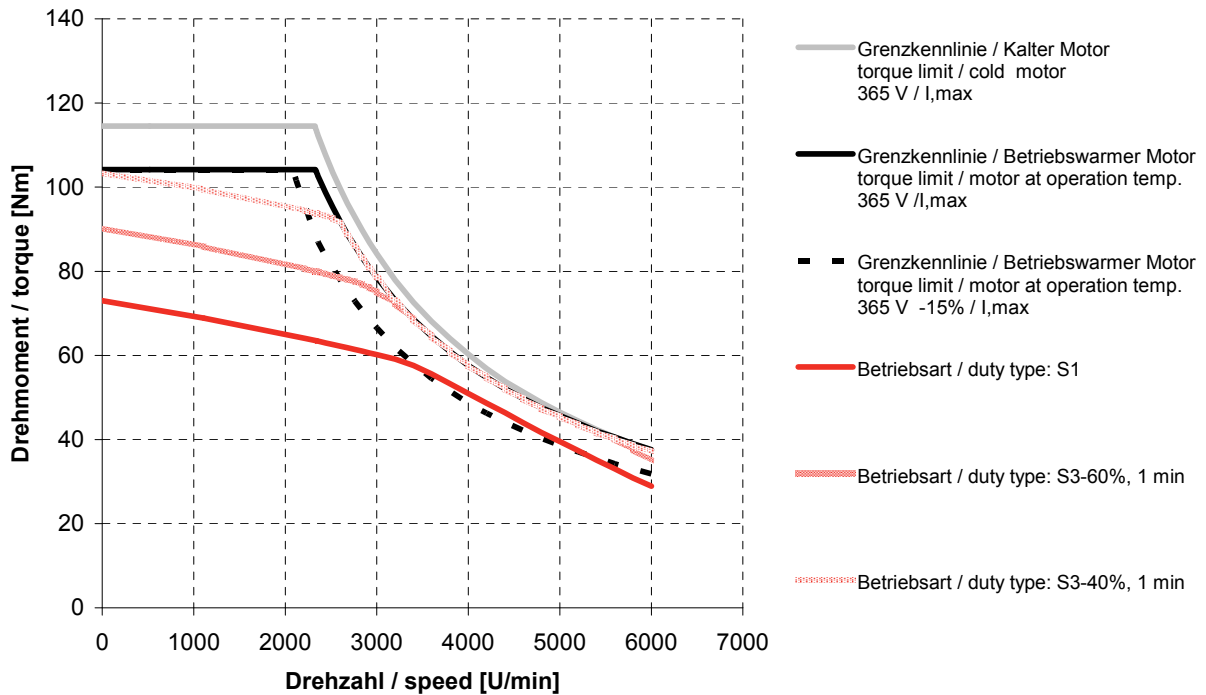
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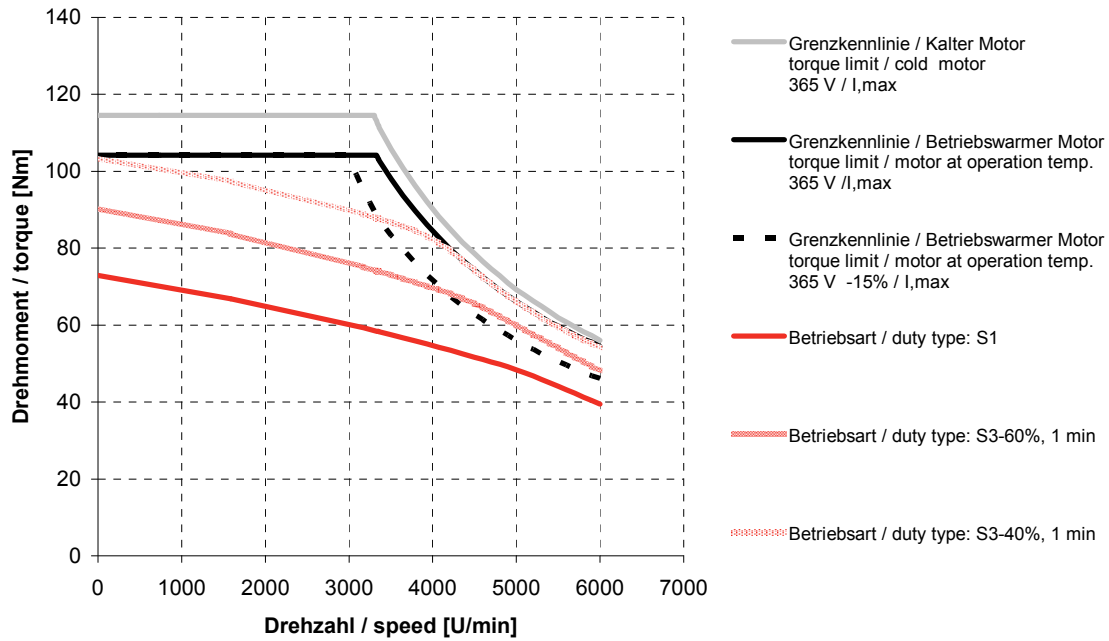
DSD2-071LO64W-20-54



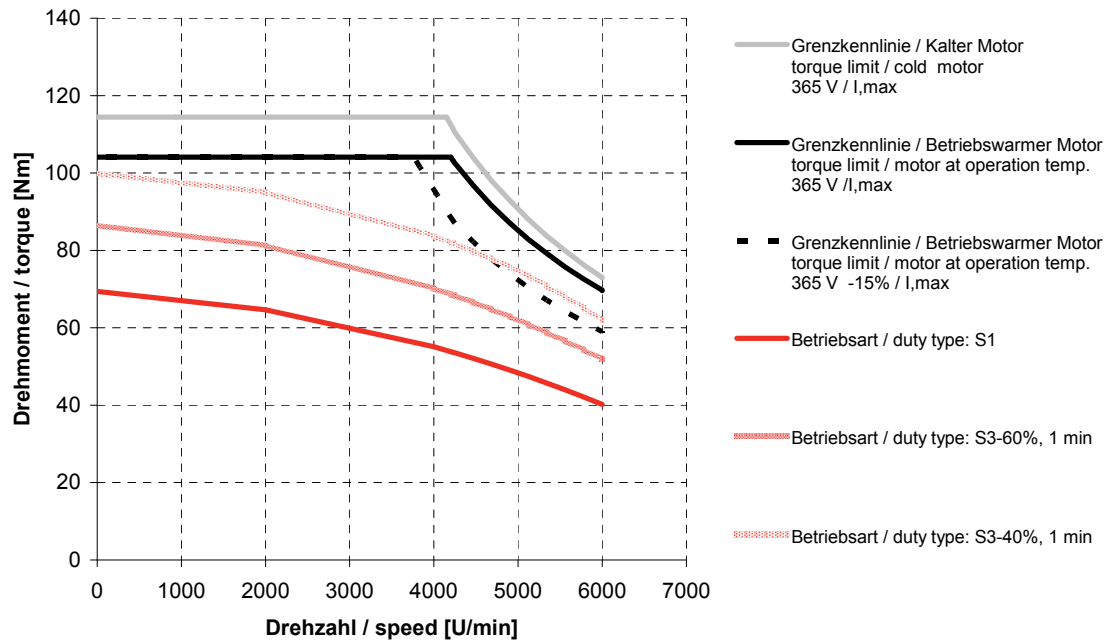
DSD2-071LO64W-30-54



DSD2-071LO64W-45-54



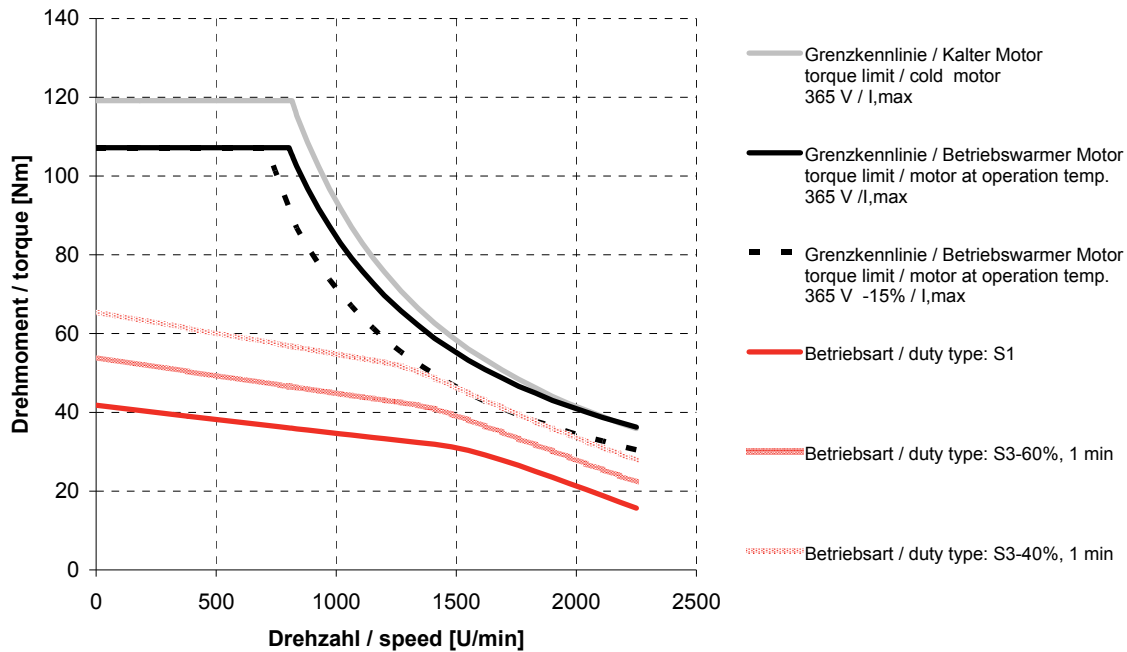
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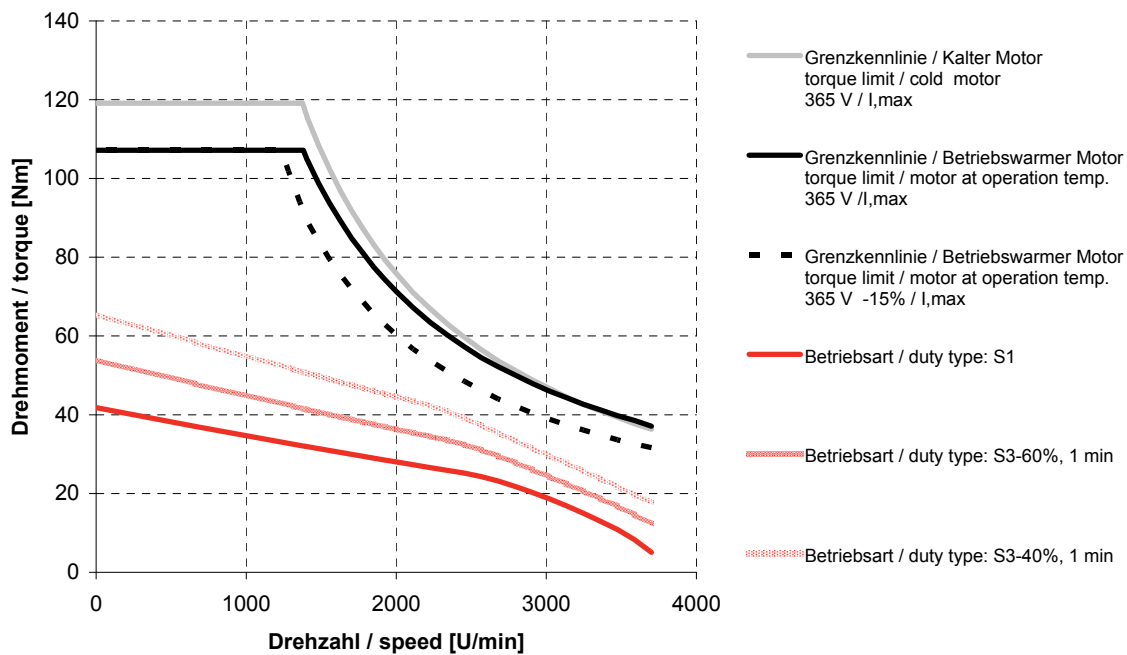
5.6. Motor characteristic curve DSD2-100

5.6.1. DSD2-100..64U.. (without fan)

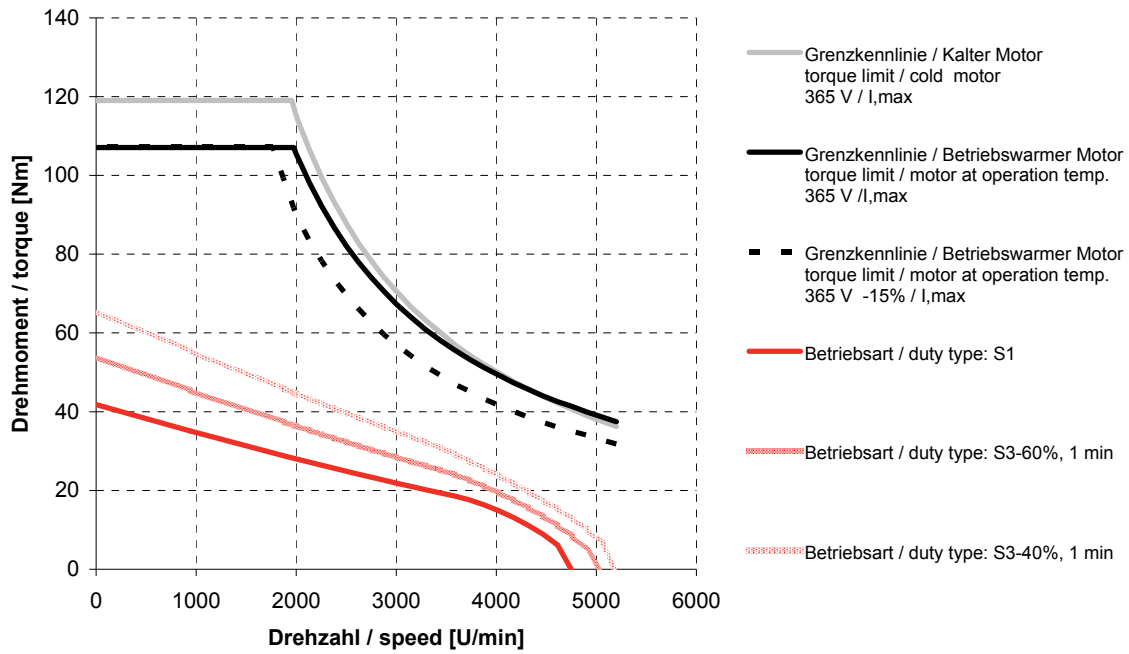
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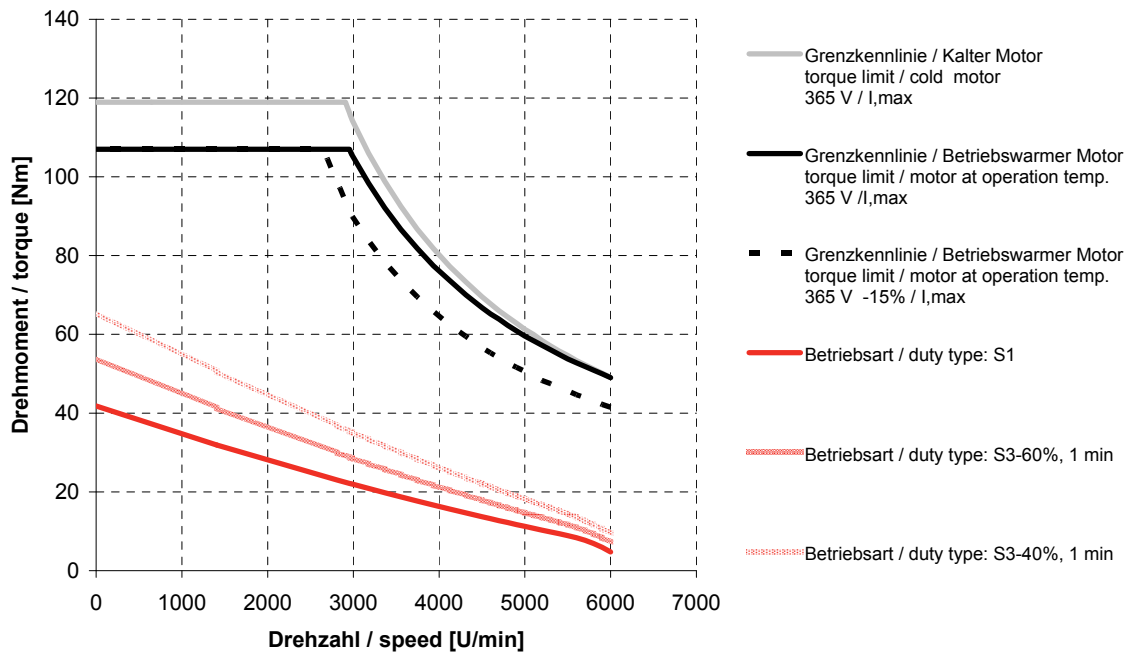
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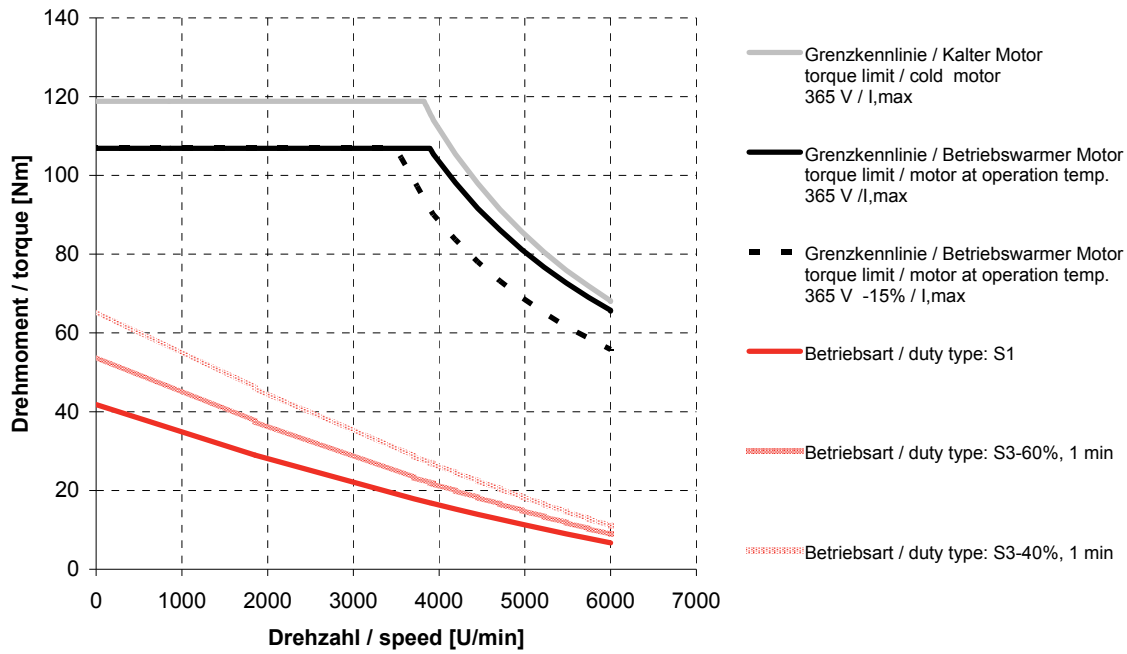
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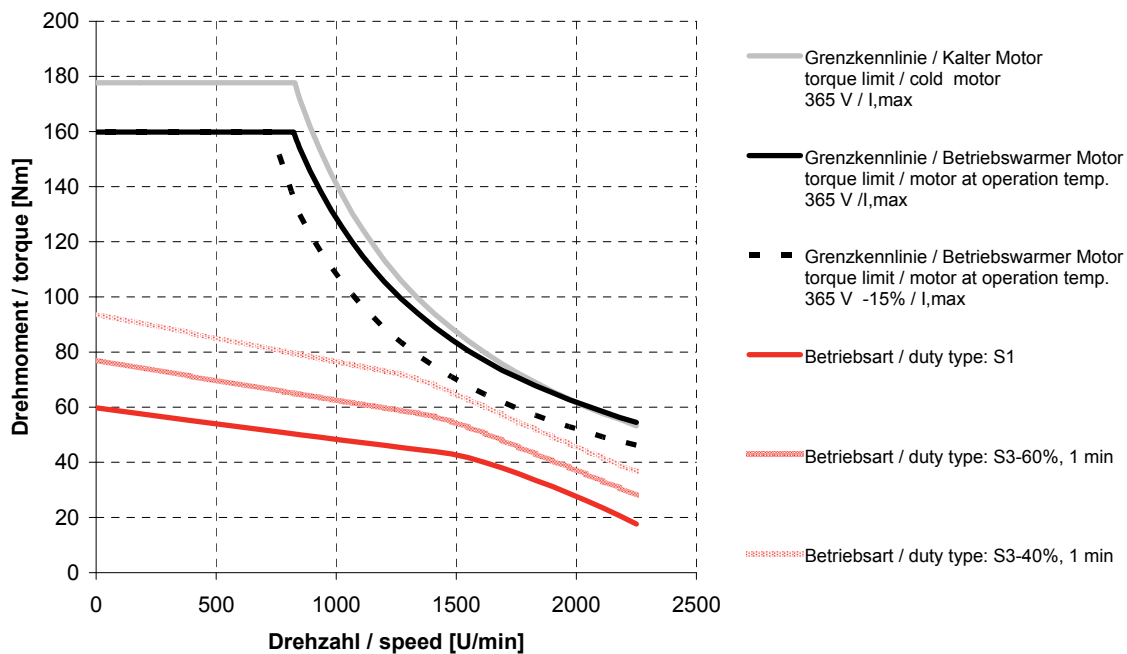
DSD2-100SO64U-45-54



DSD2-100SO64U-60-54

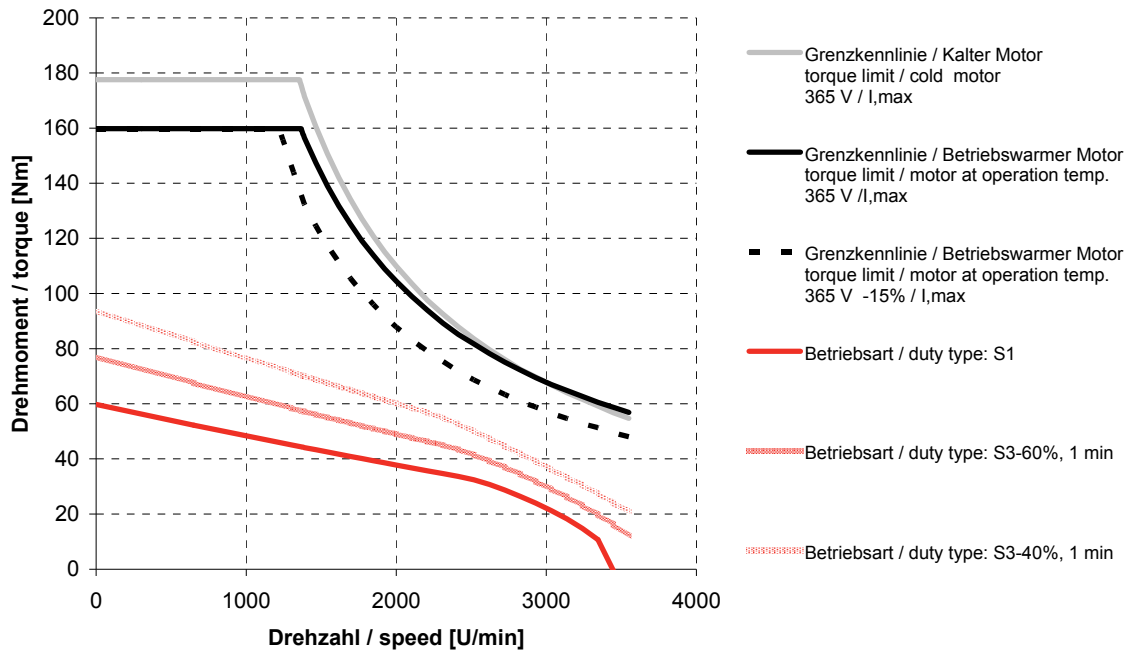


DSD2-100MO64U-12-54

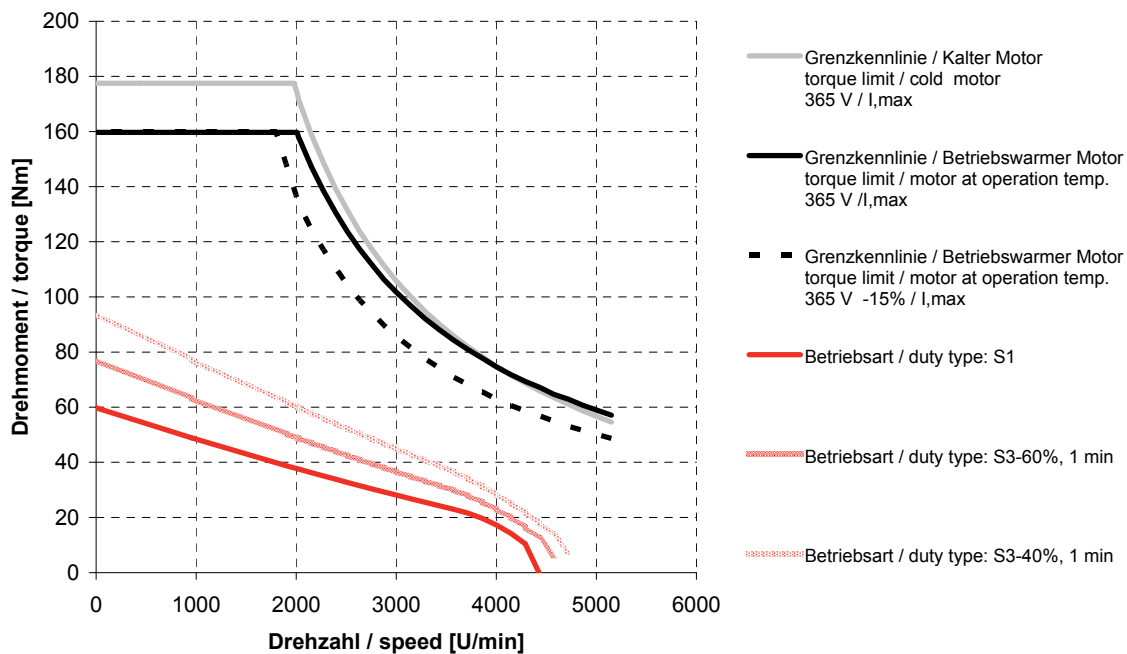




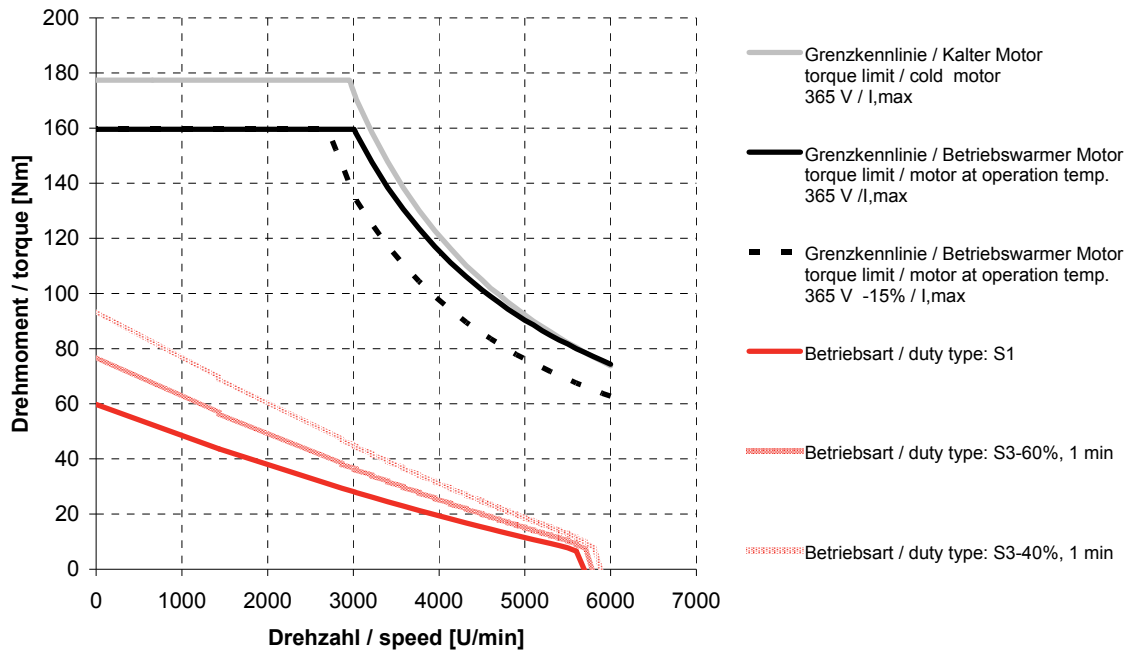
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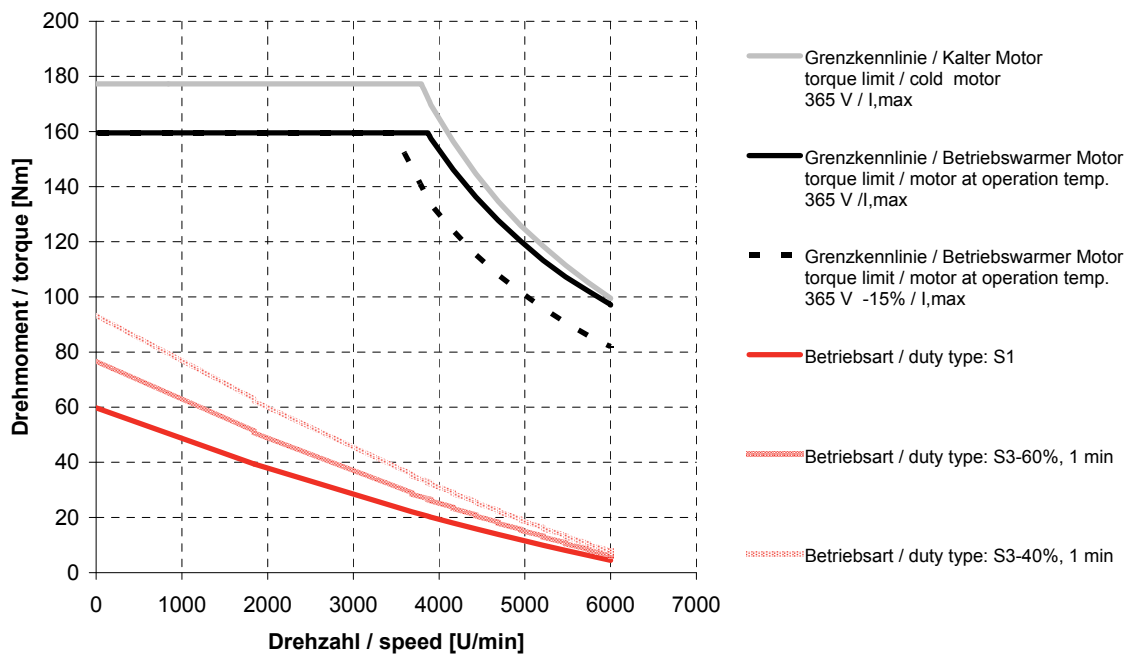
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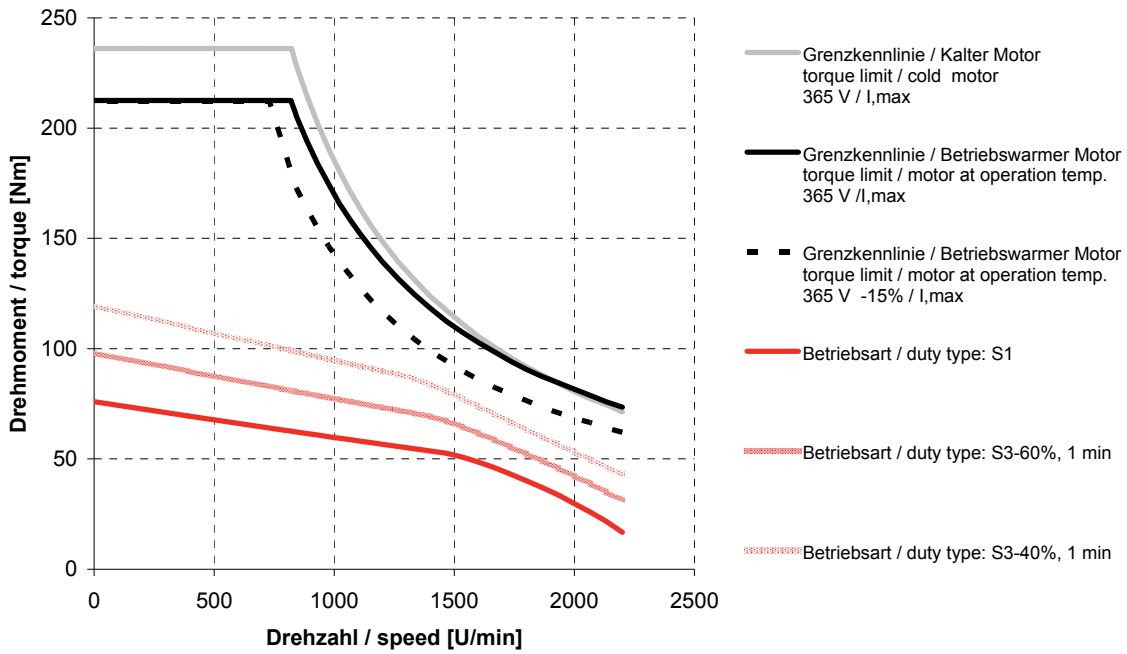
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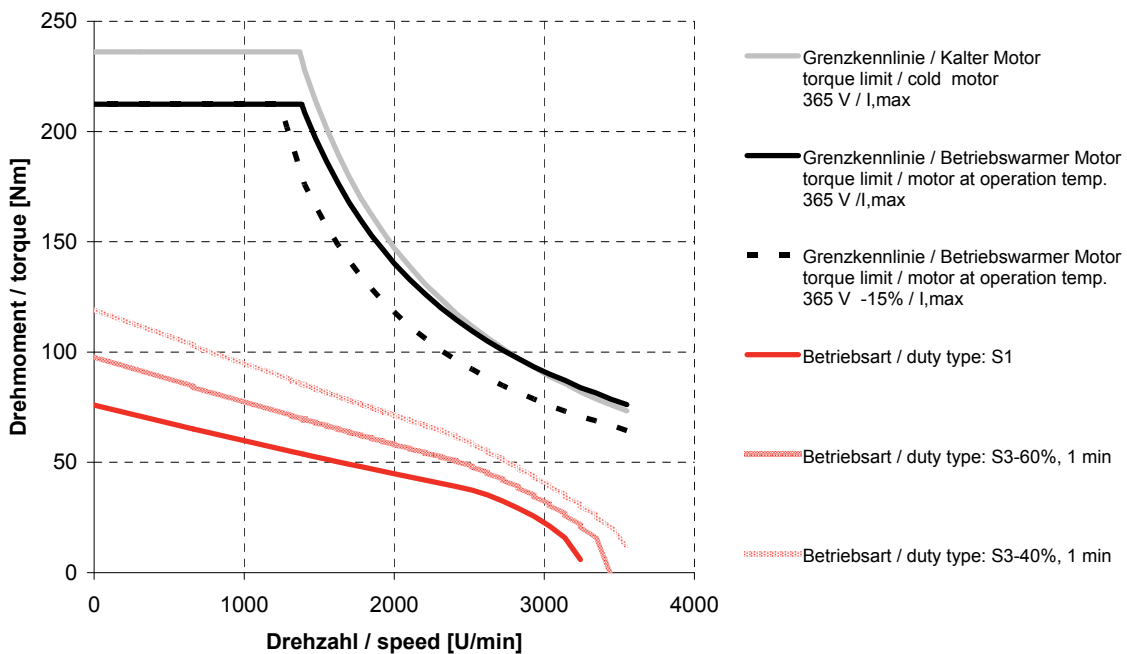
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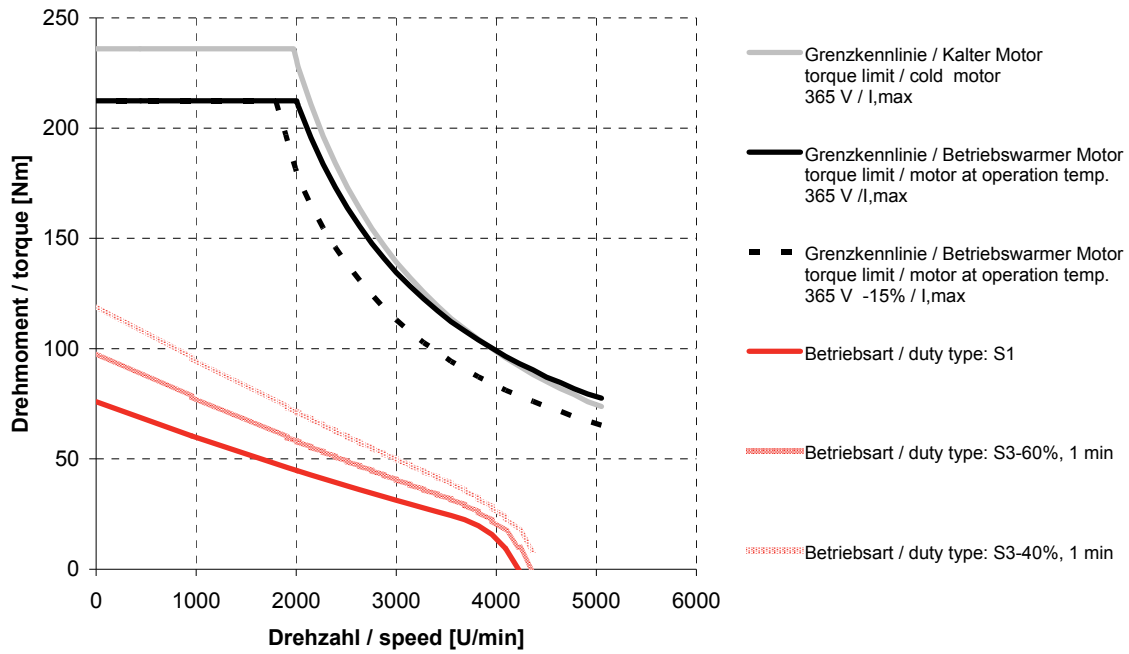
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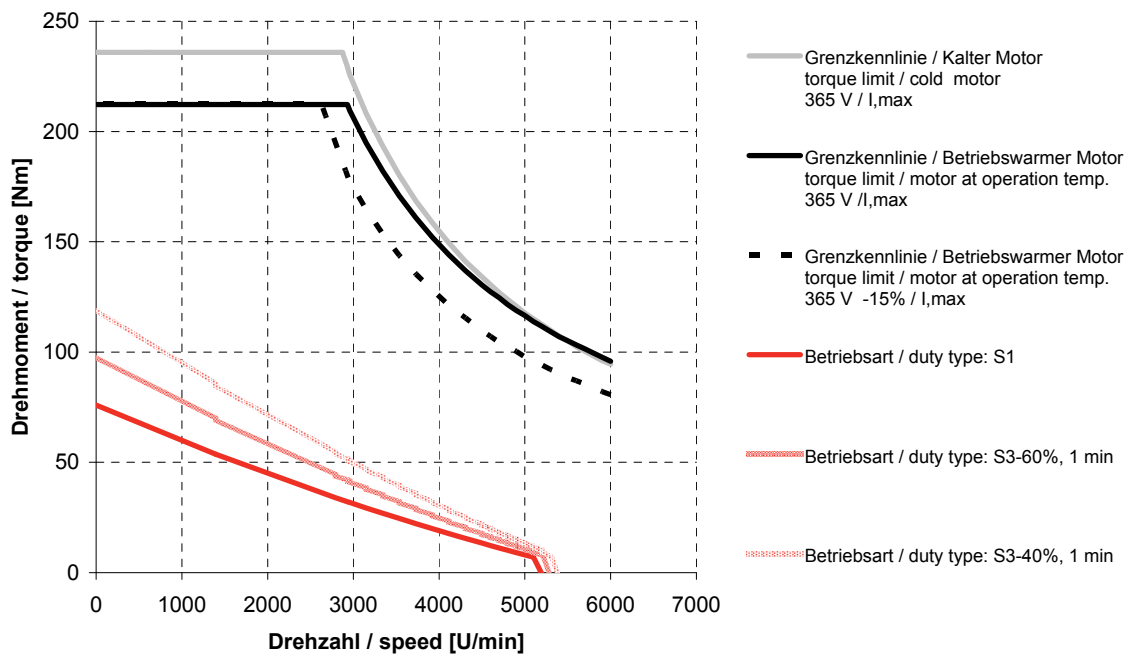
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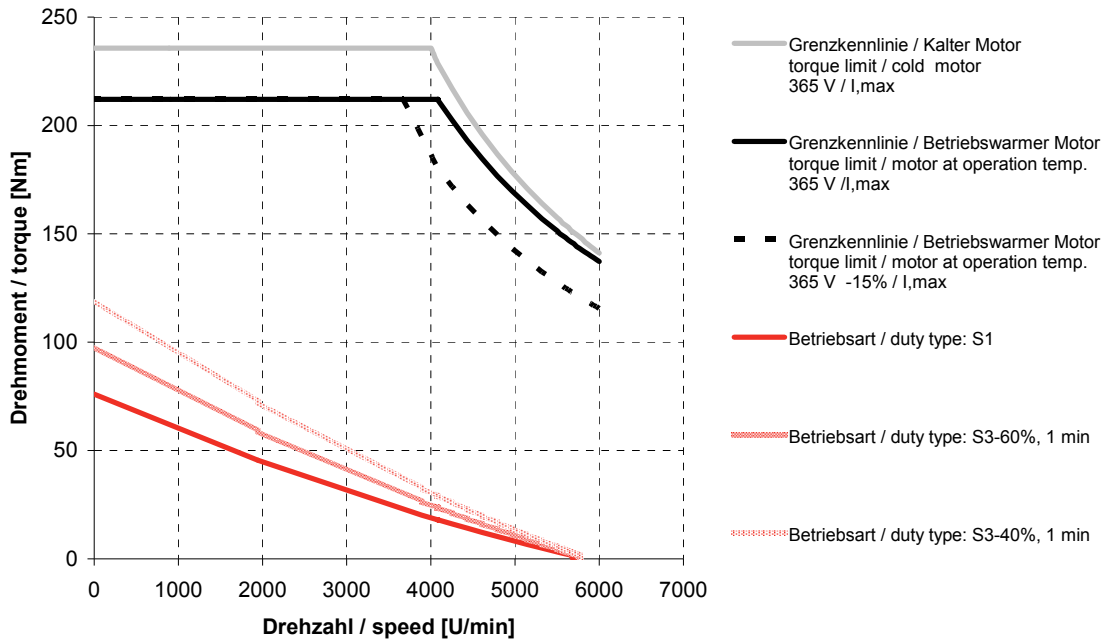
DSD2-100LO64U-30-54



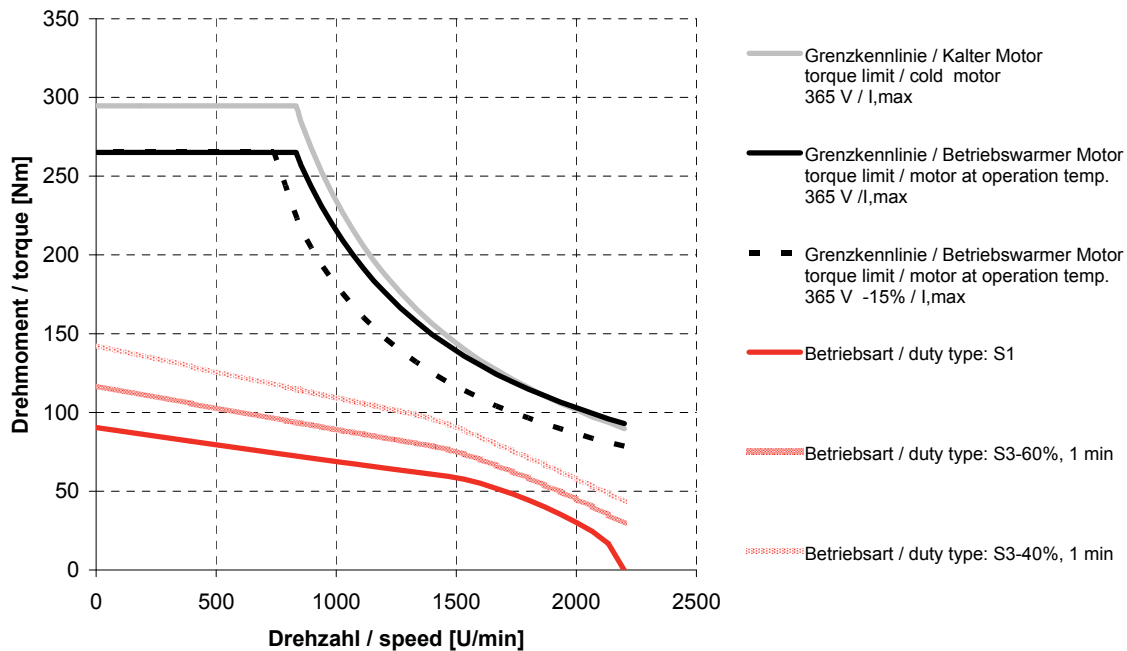
DSD2-100LO64U-45-54



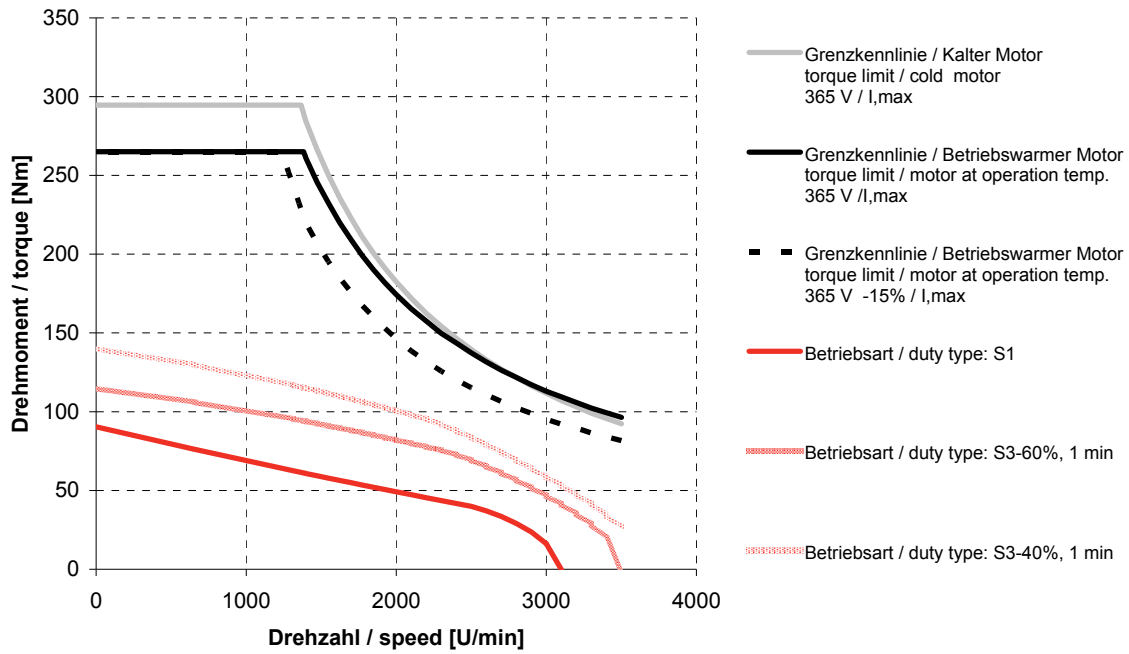
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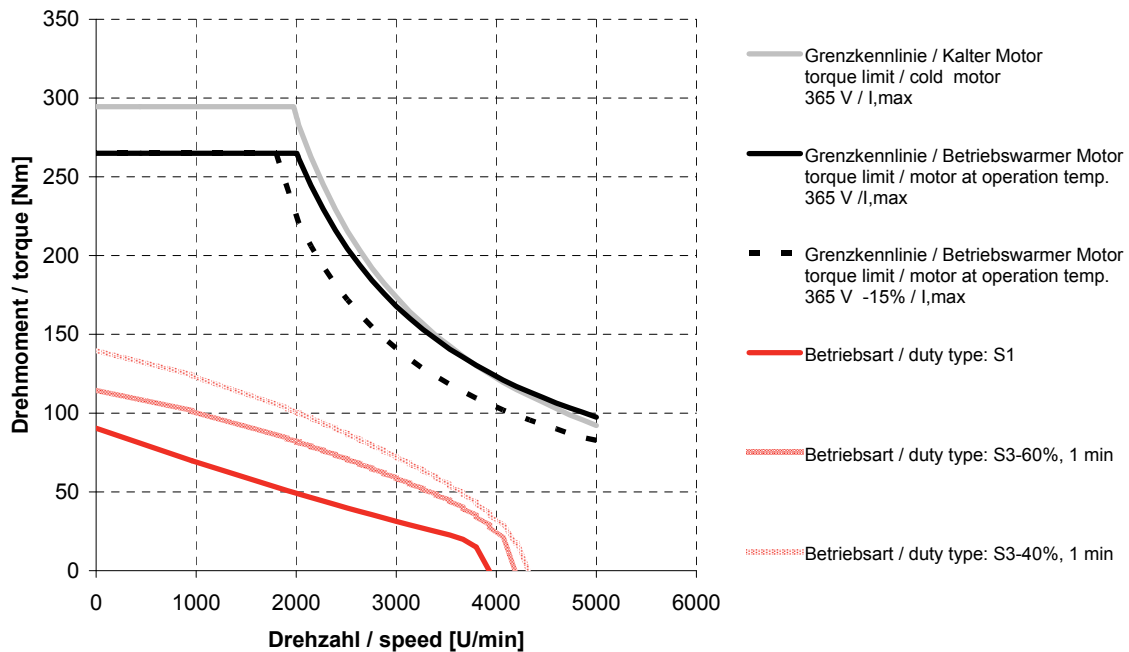
DSD2-100BO64U-12-54



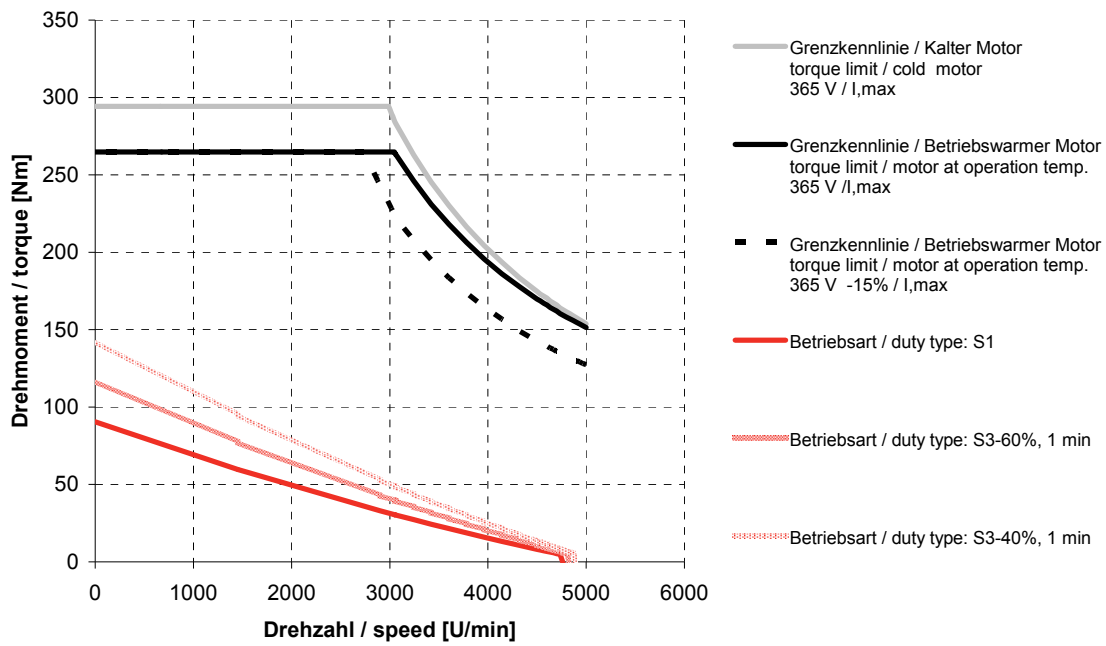
DSD2-100BO64U-20-54



DSD2-100BO64U-30-54

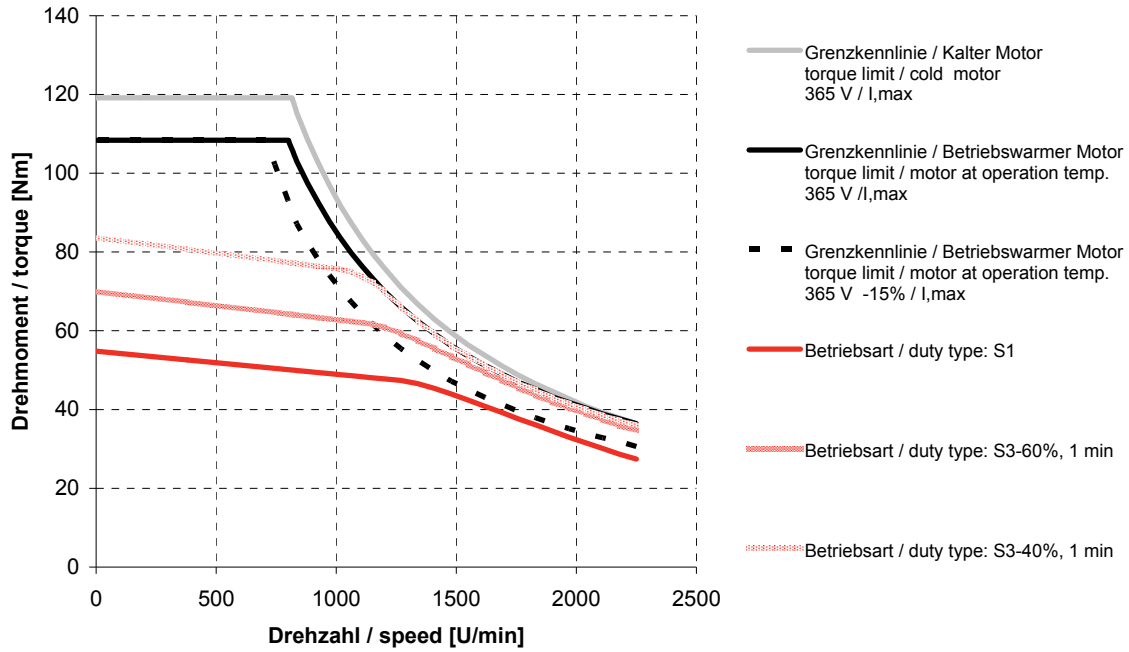


DSD2-100BO64U-45-54

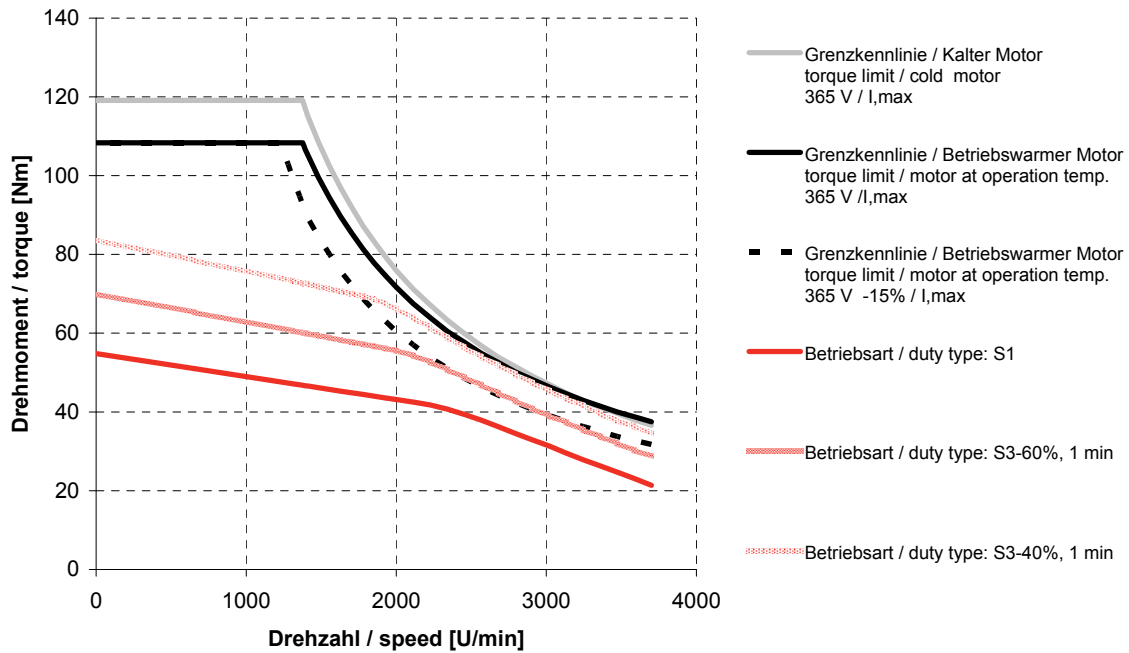


5.6.2. DSD2-100..64O-.. (with fan)

DSD2-100SO64O-12-54

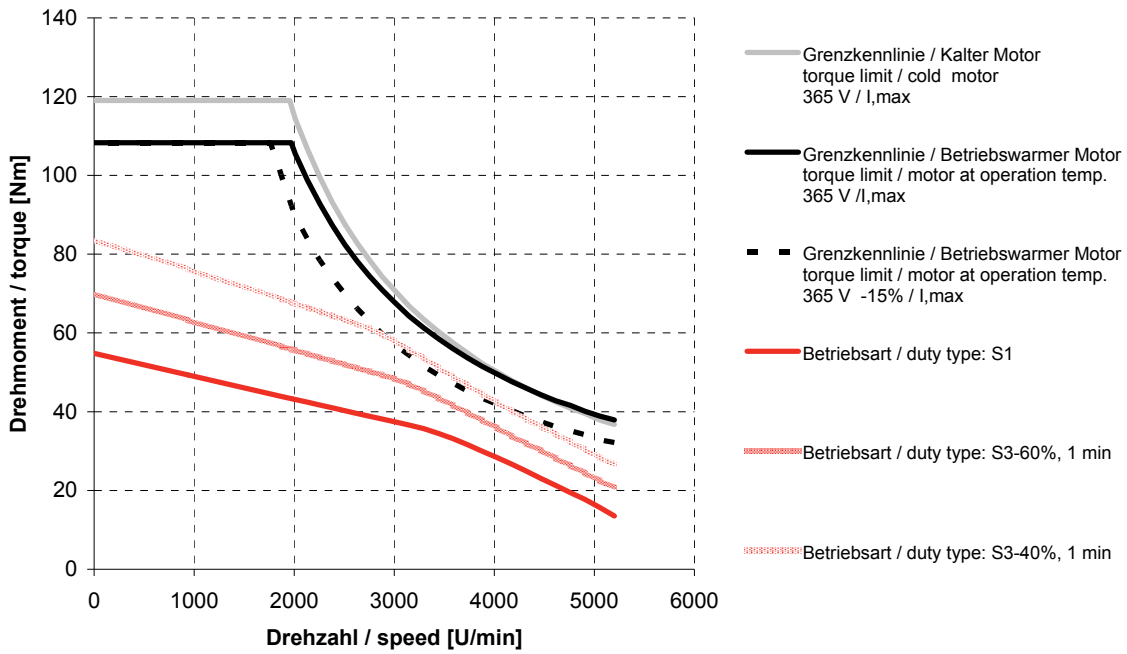


DSD2-100SO64O-20-54

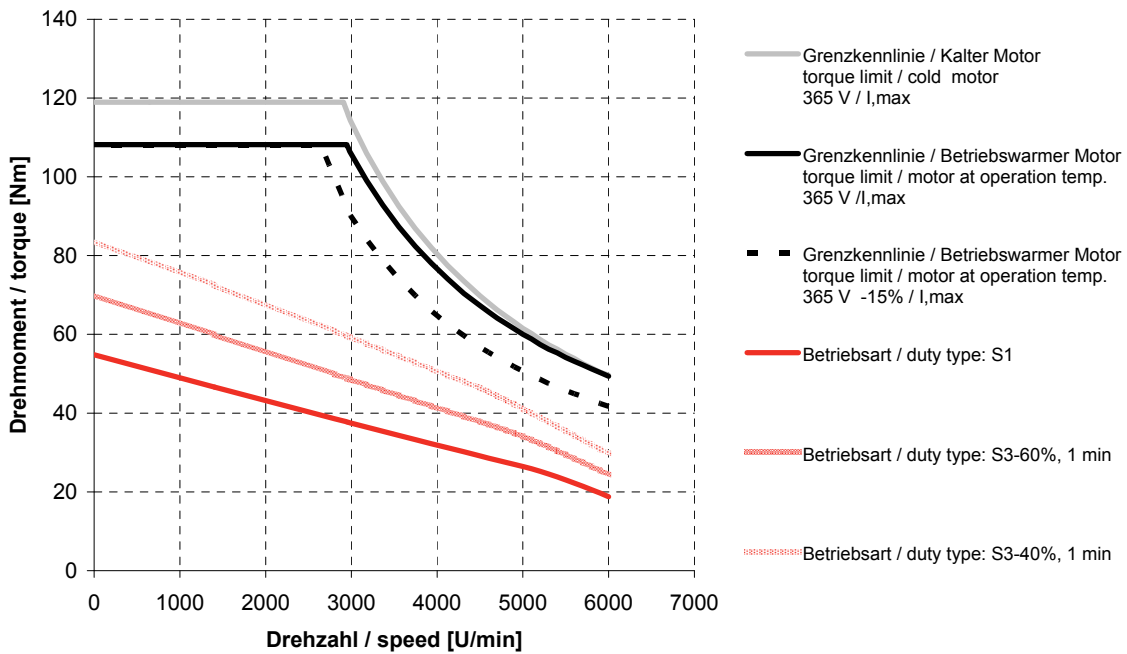




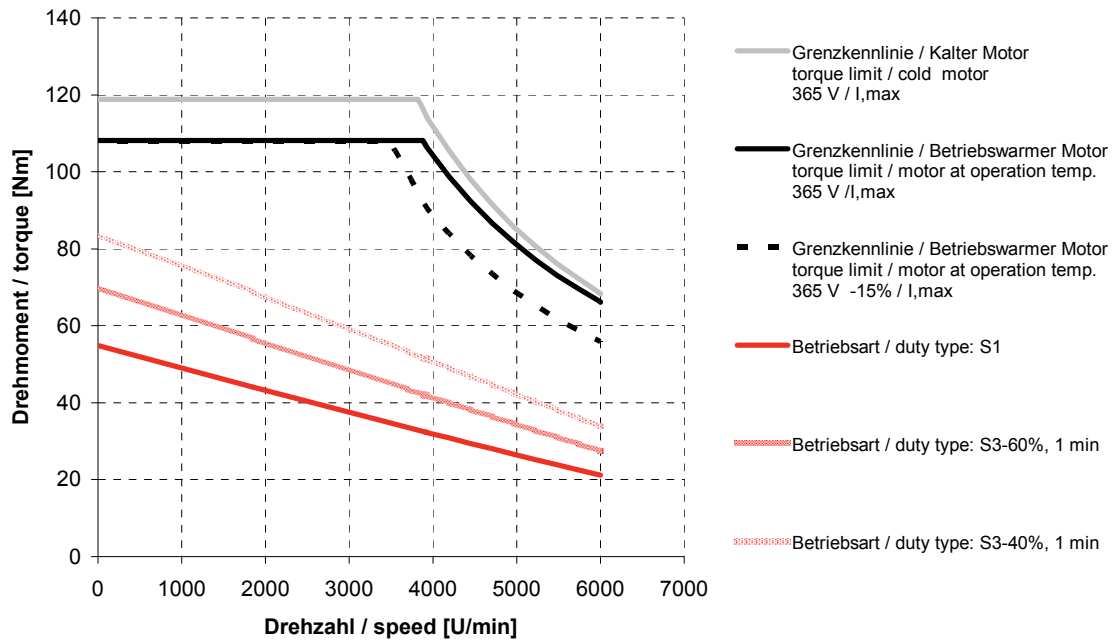
DSD2-100SO640-30-54



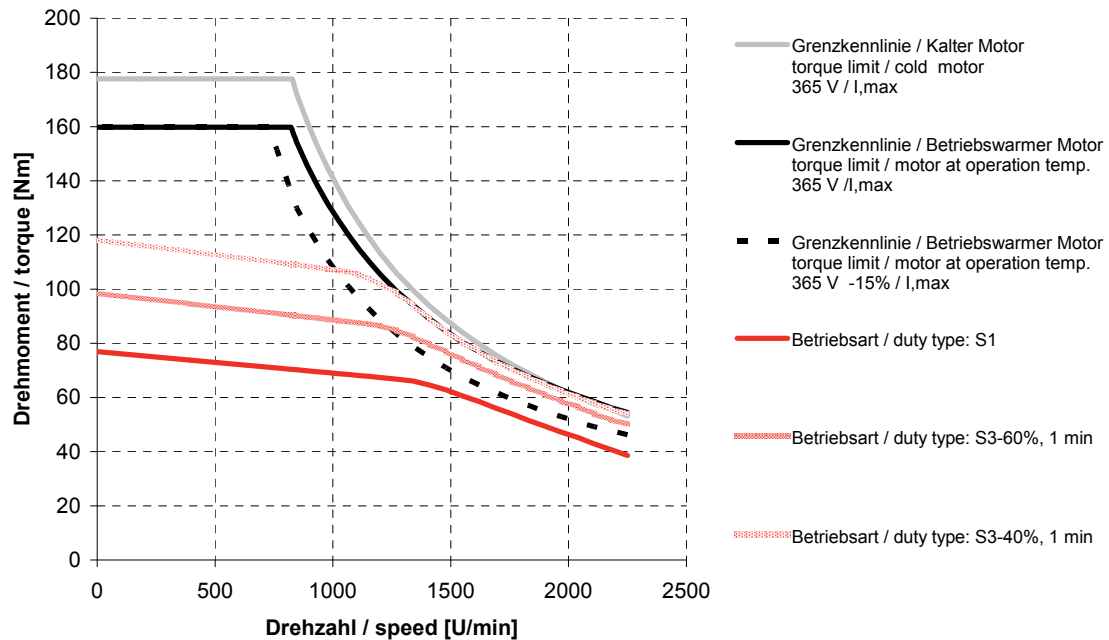
DSD2-100SO640-45-54



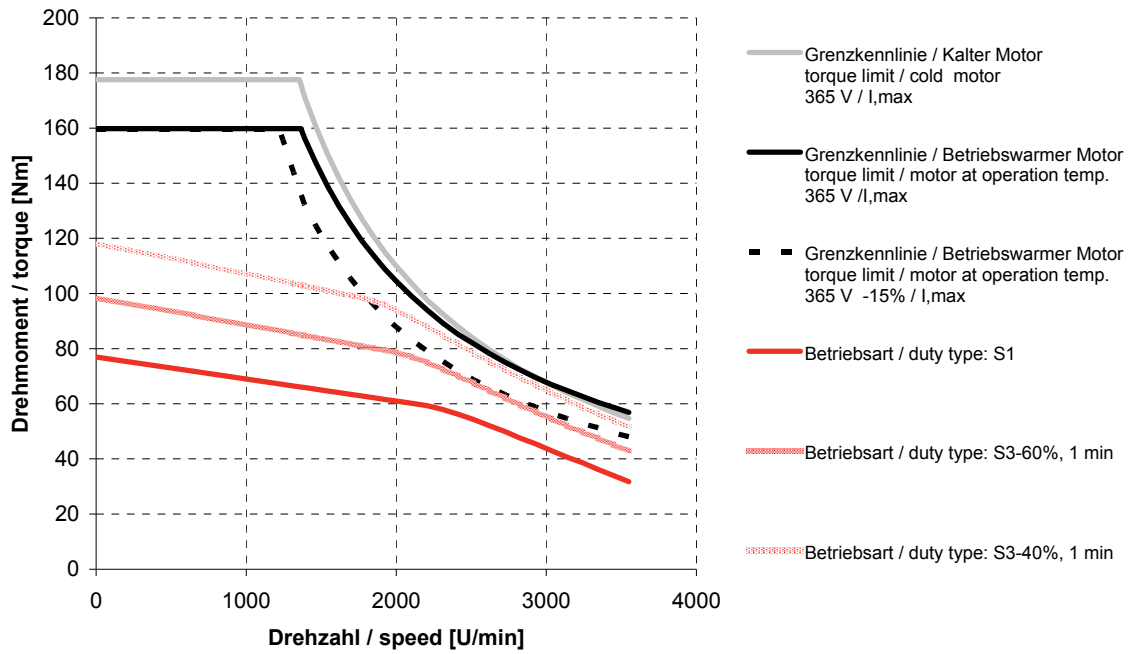
DSD2-100SO640-60-54



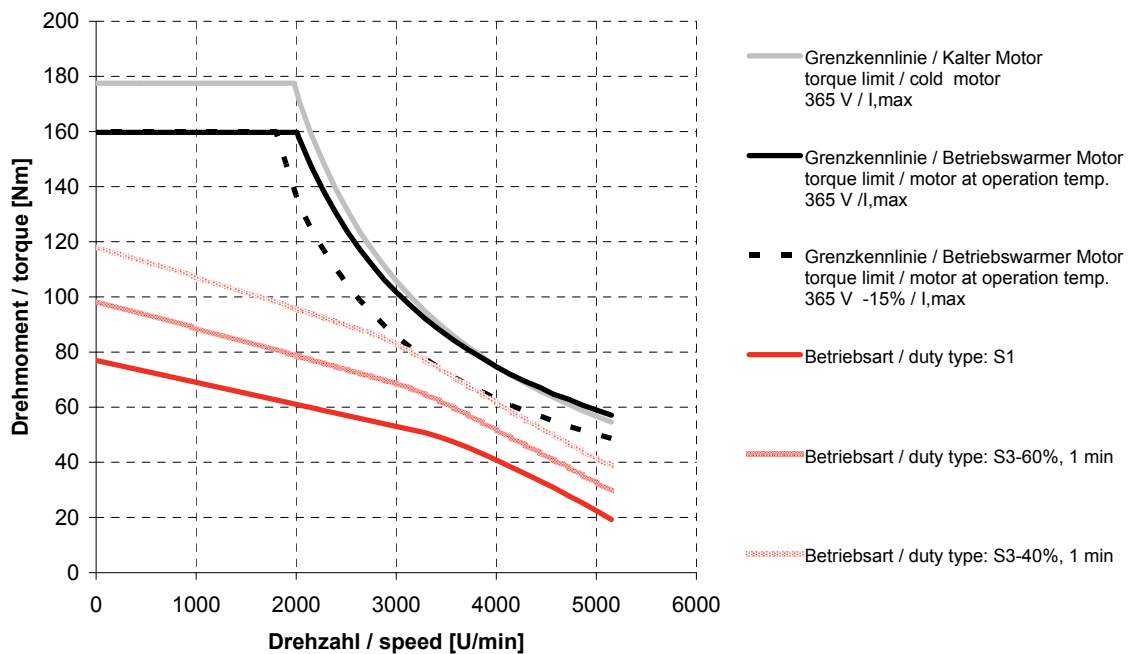
DSD2-100MO640-12-54



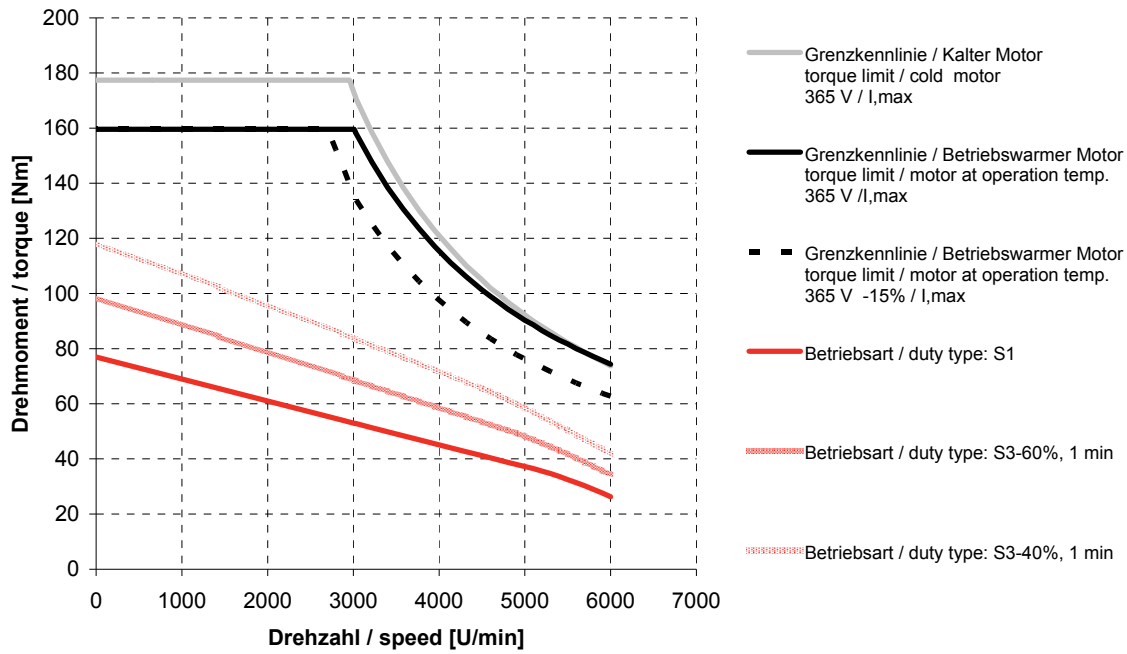
DSD2-100MO64O-20-54



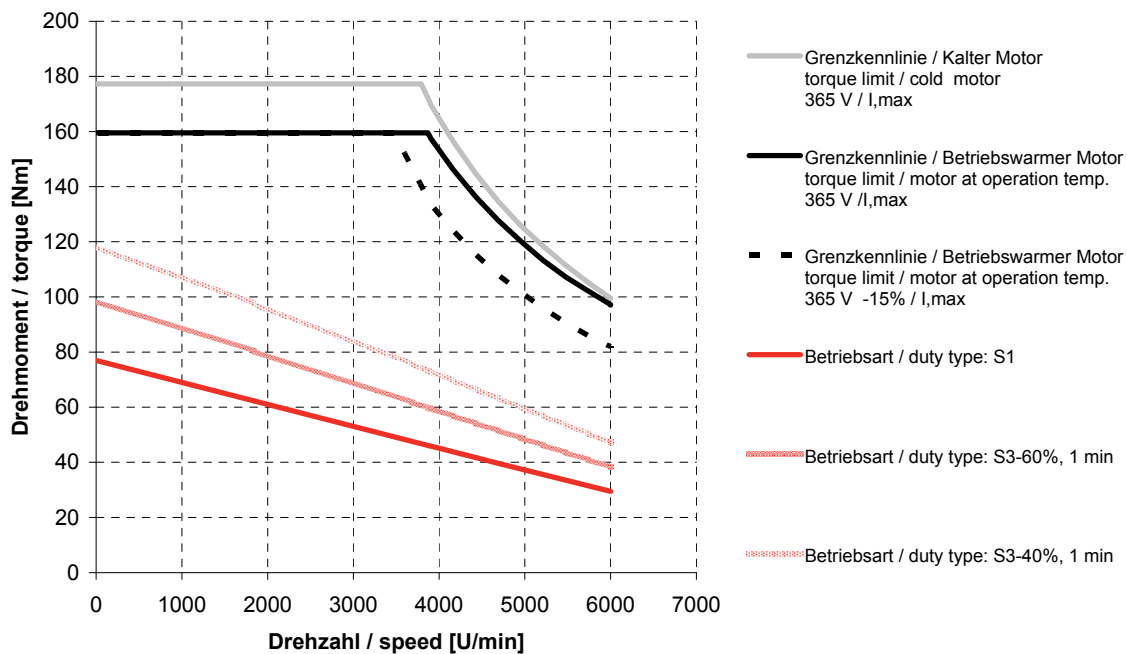
DSD2-100MO64O-30-54



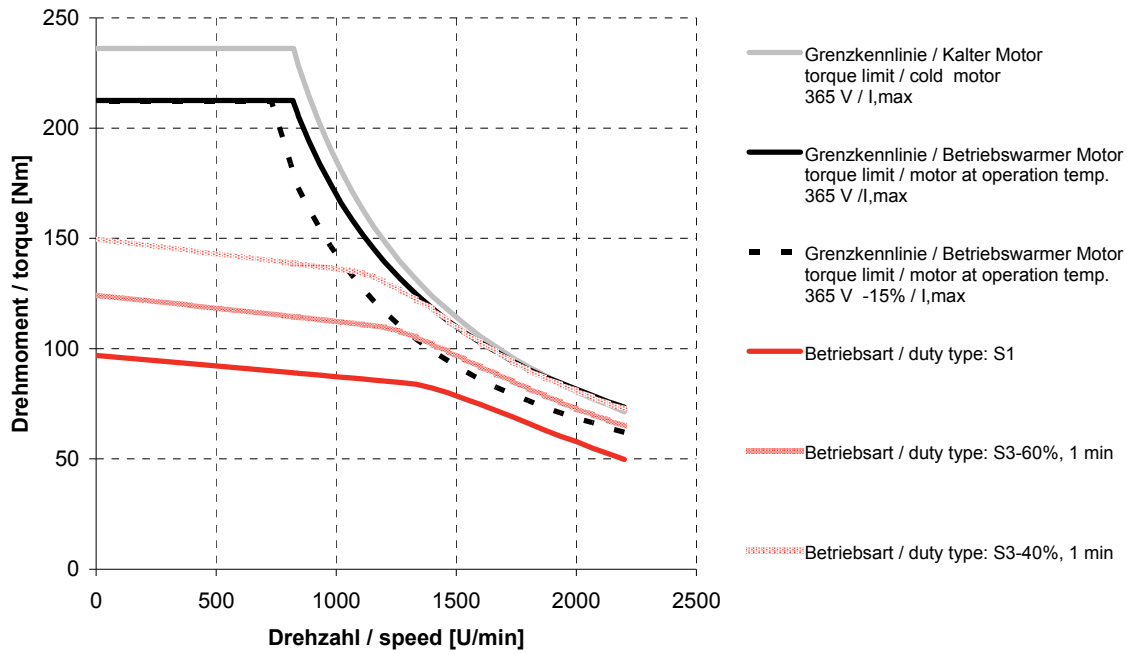
DSD2-100MO64O-45-54



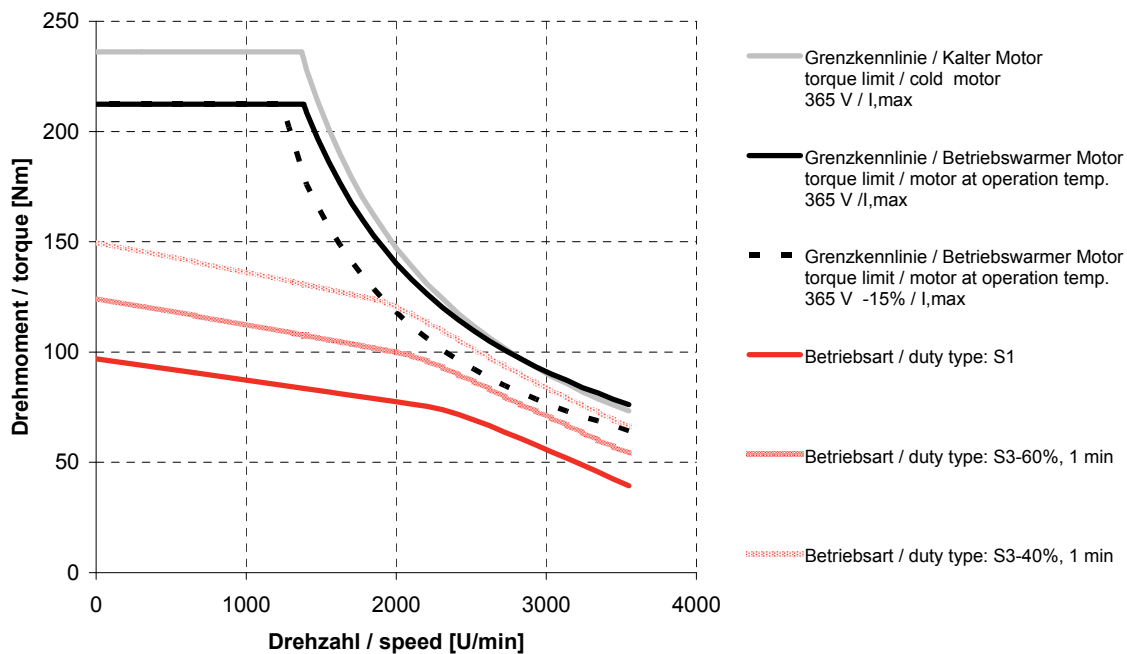
DSD2-100MO64O-60-54



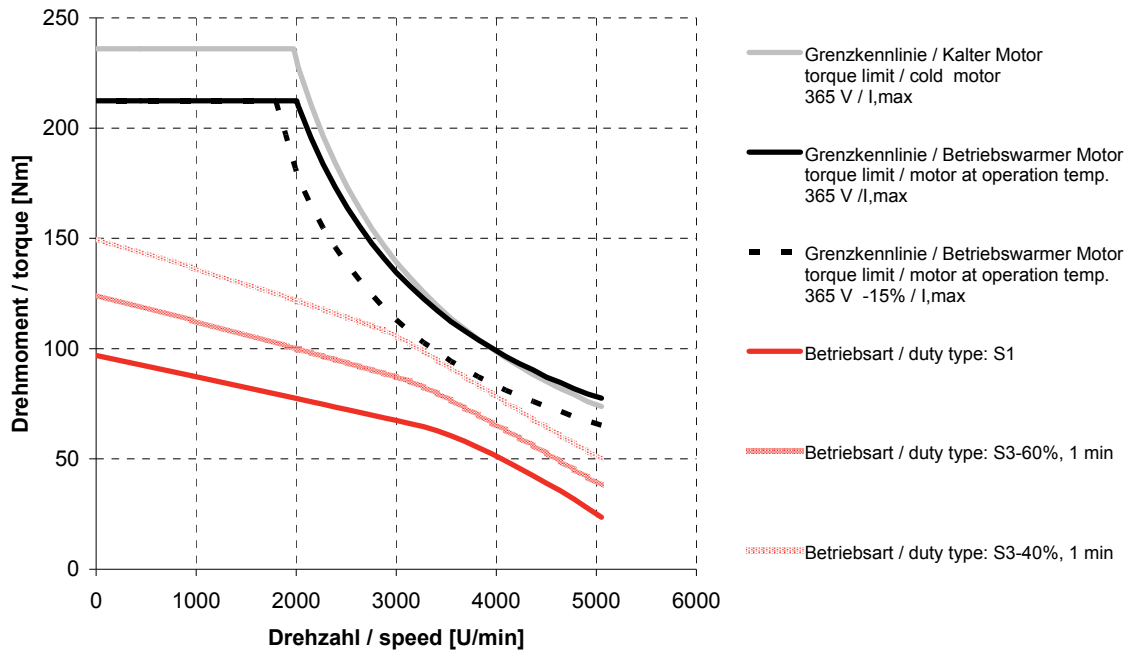
DSD2-100LO64O-12-54



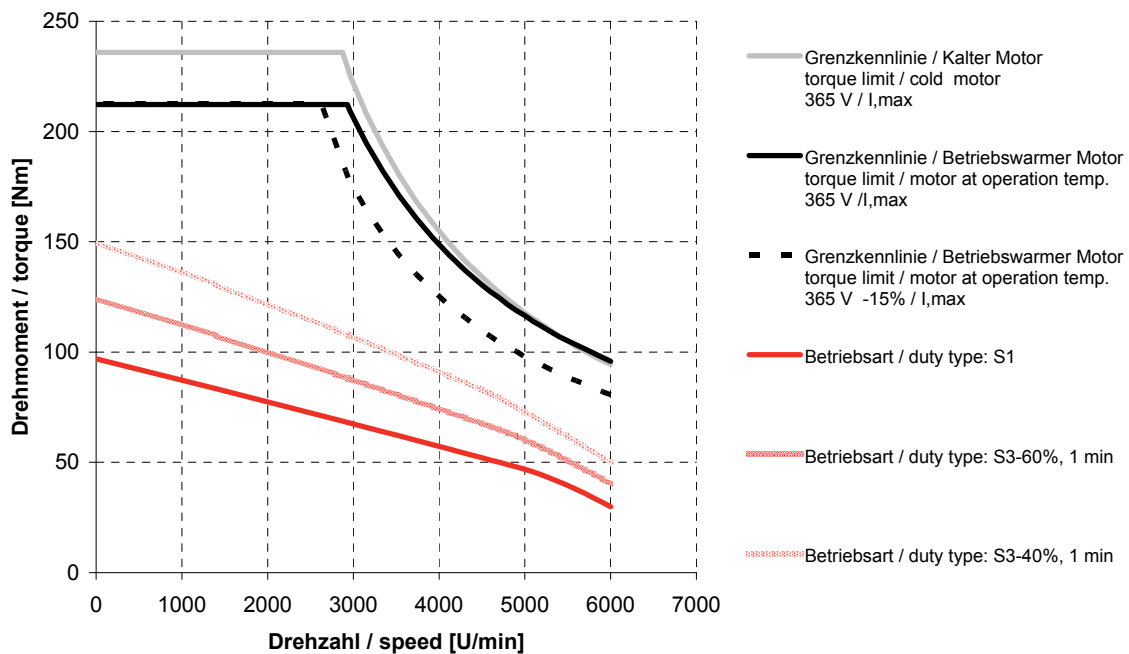
DSD2-100LO64O-20-54



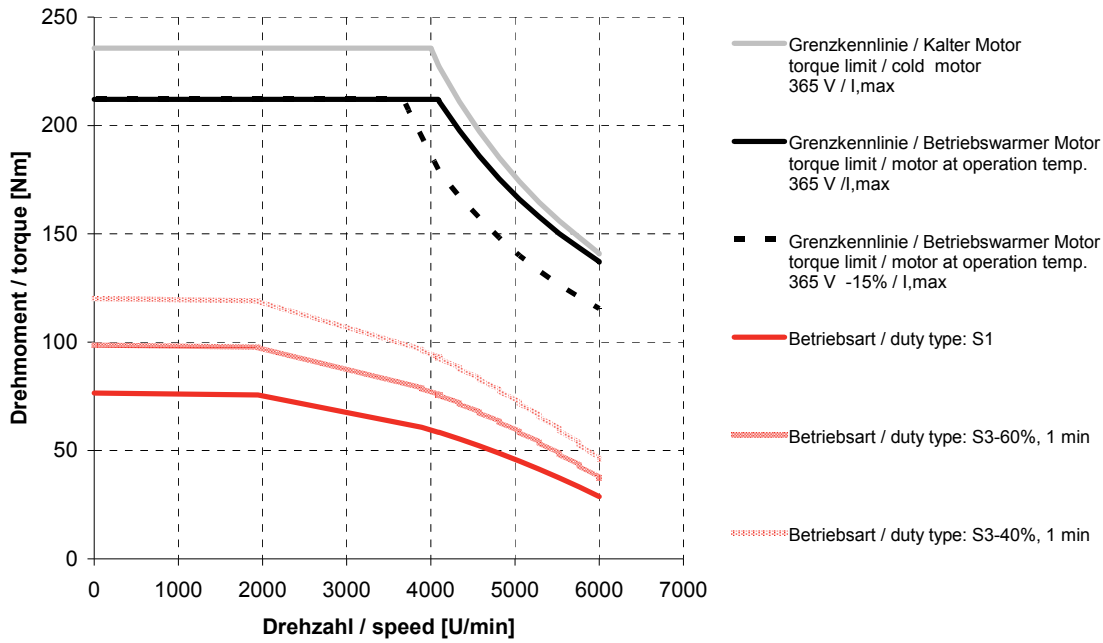
DSD2-100LO64O-30-54



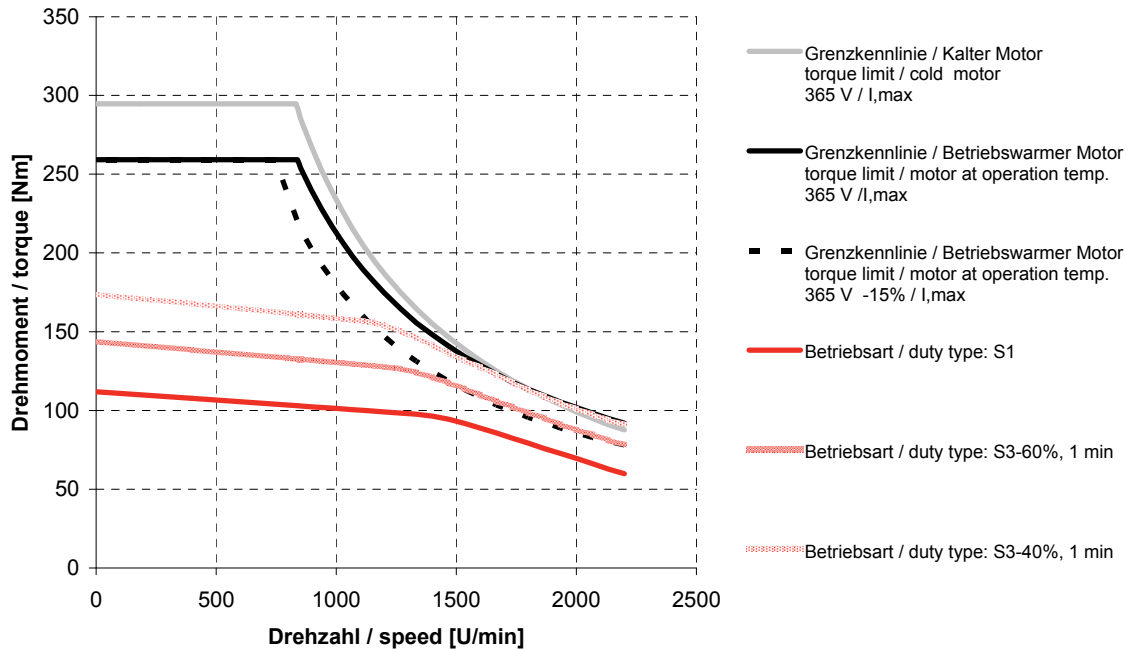
DSD2-100LO64O-45-54



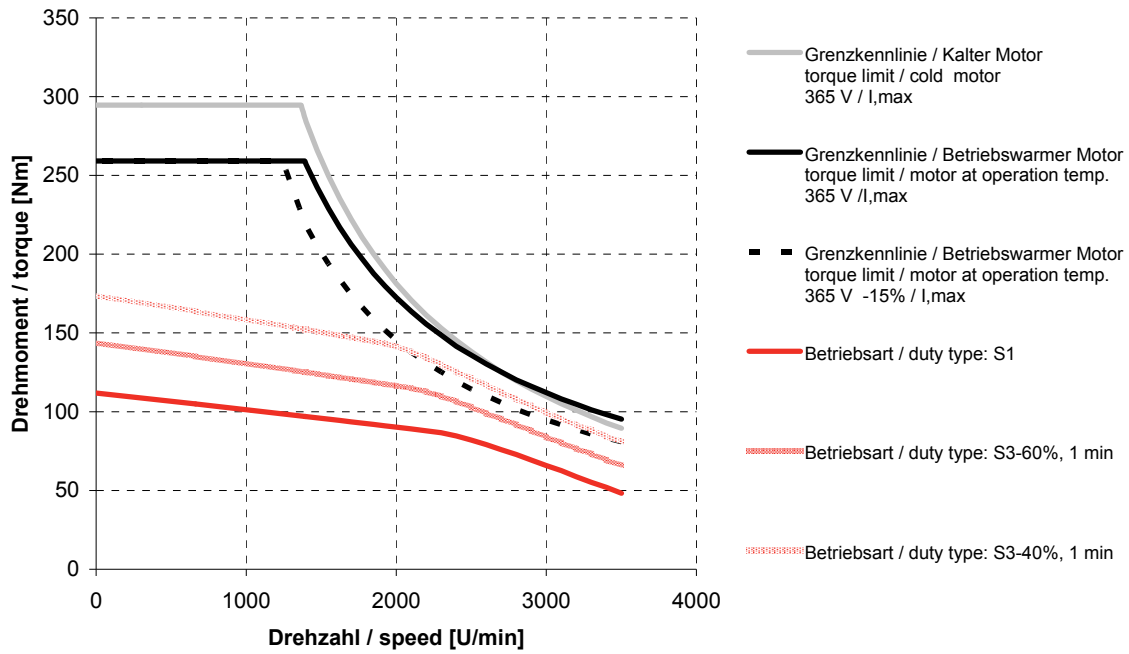
DSD2-100LO640-60-54



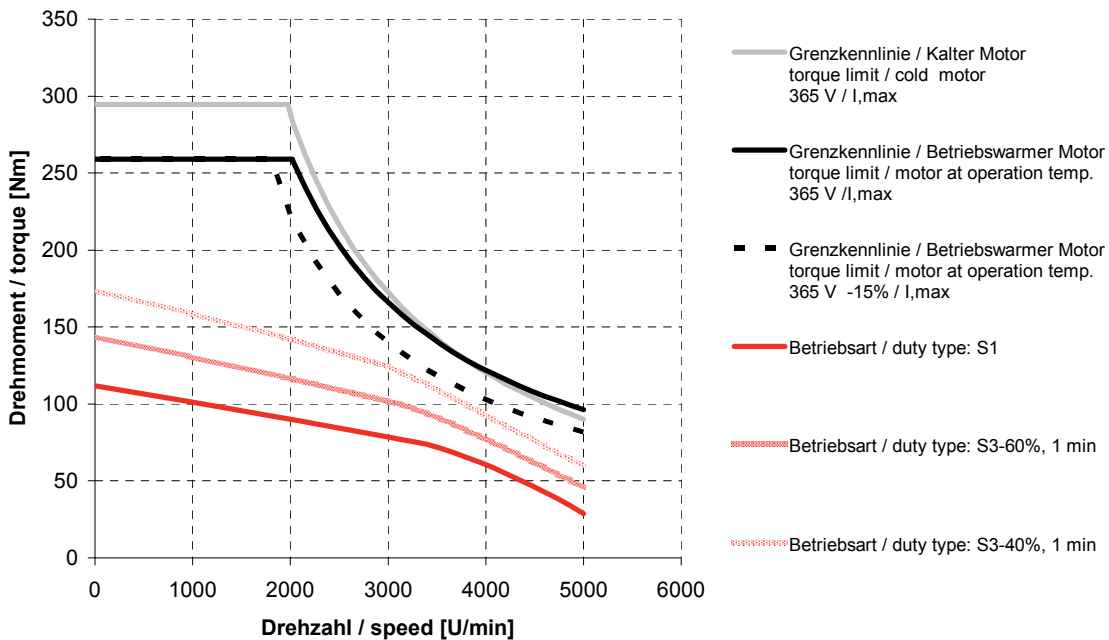
DSD2-100BO640-12-54



DSD2-100BO64O-20-54

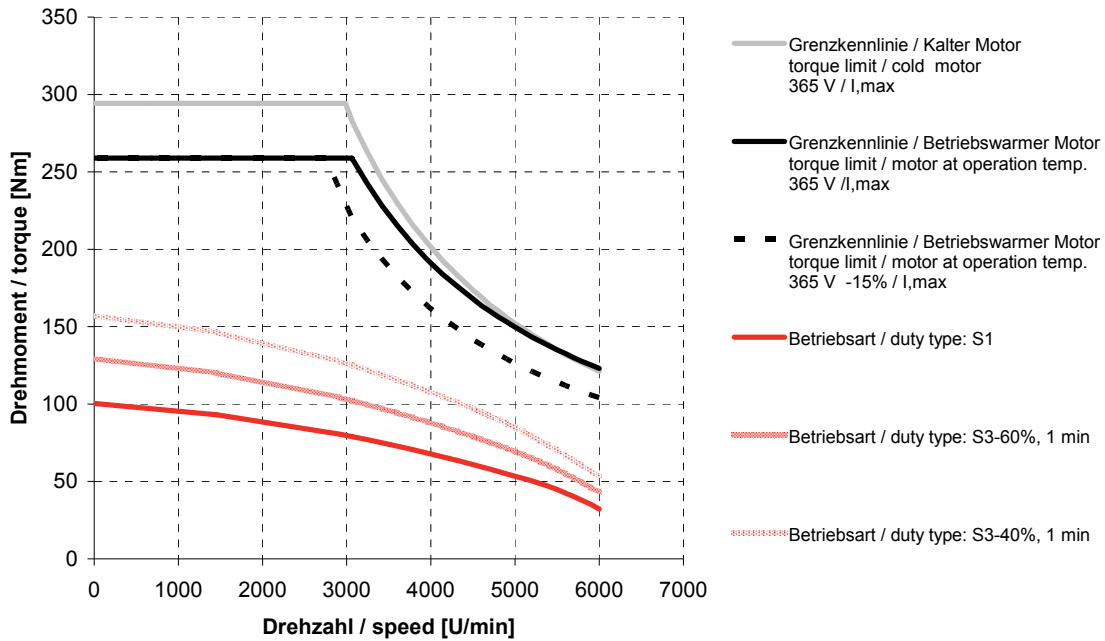


DSD2-100BO64O-30-54

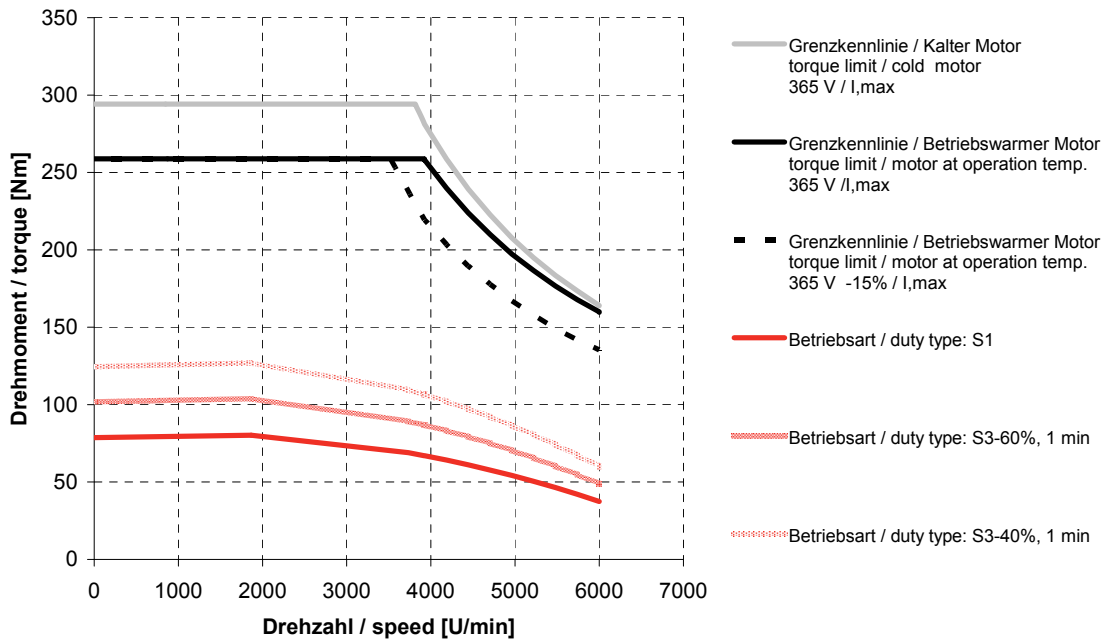




DSD2-100BO640-45-54

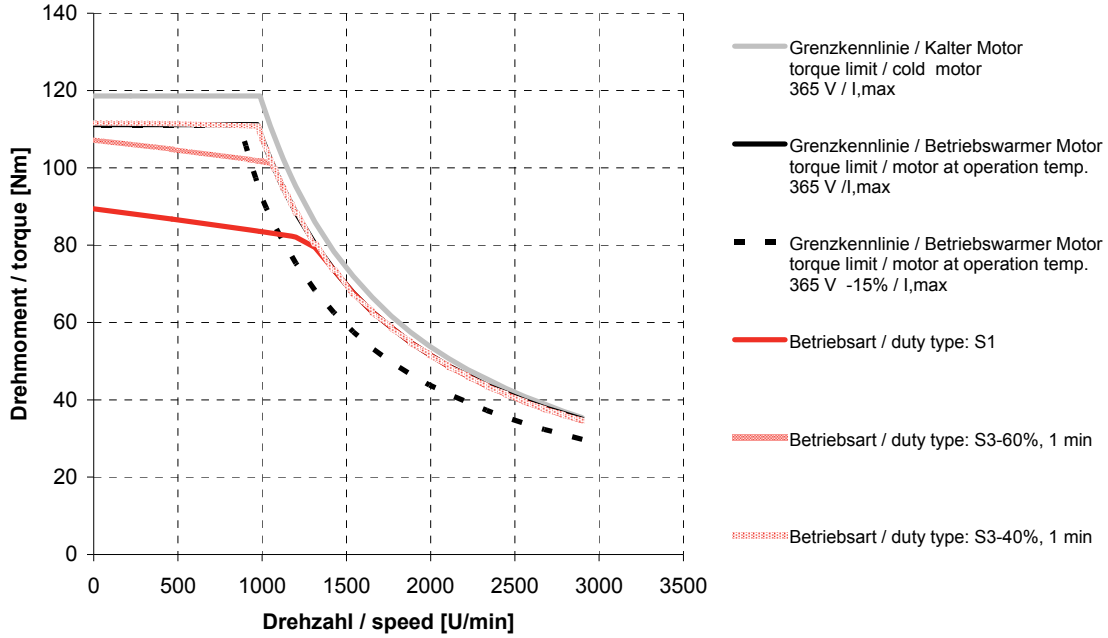


DSD2-100BO640-60-54

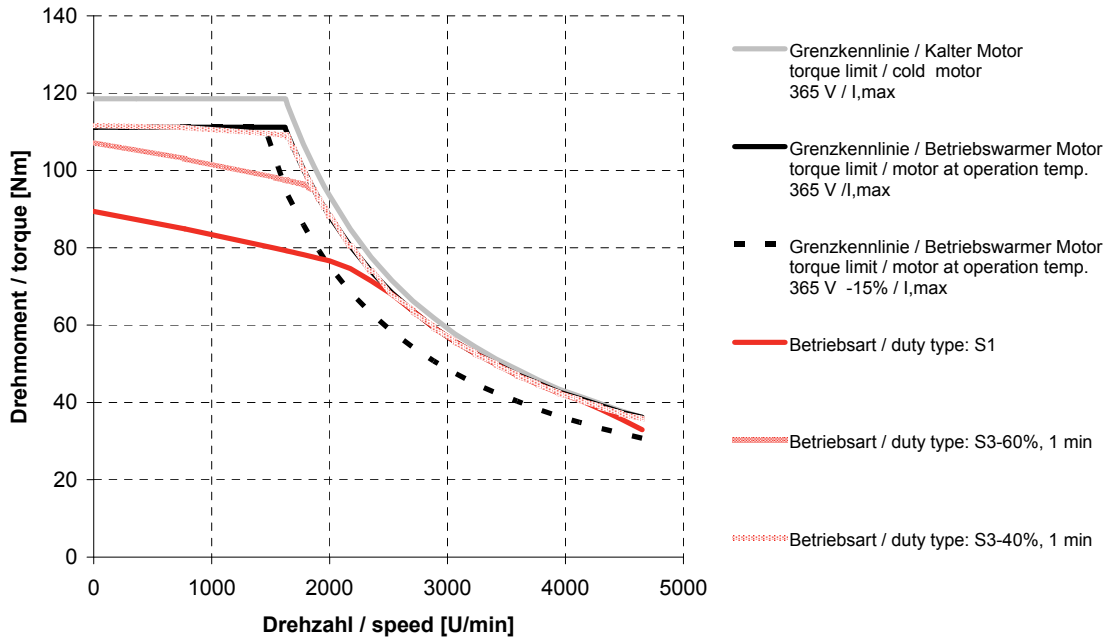


5.6.3. DSD2-100..64W-.. (water cooled)

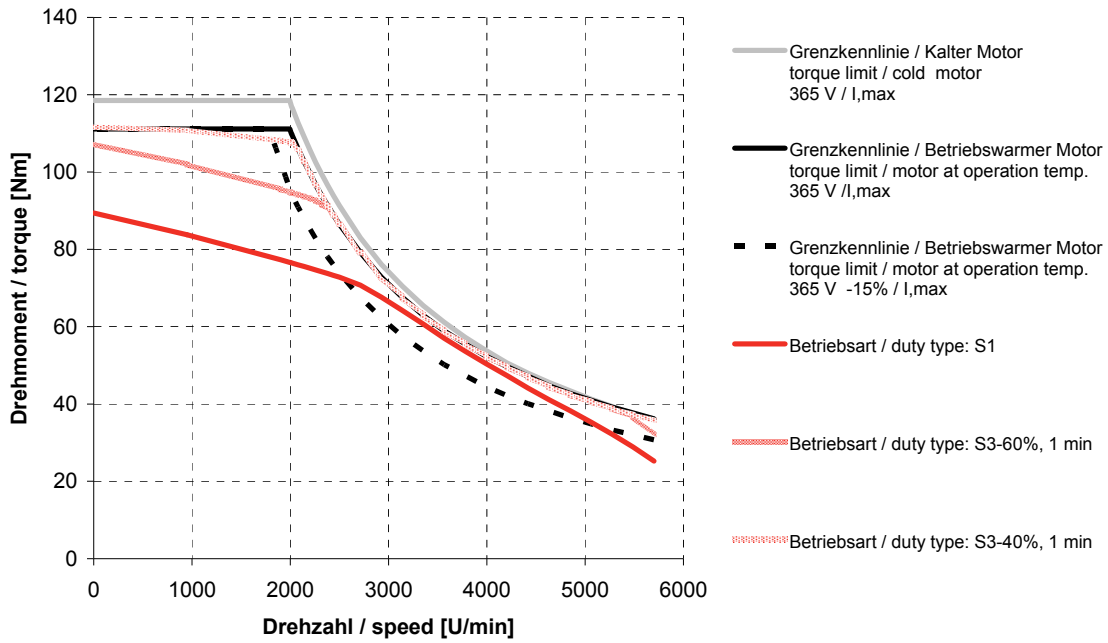
DSD2-100SO64W-12-54



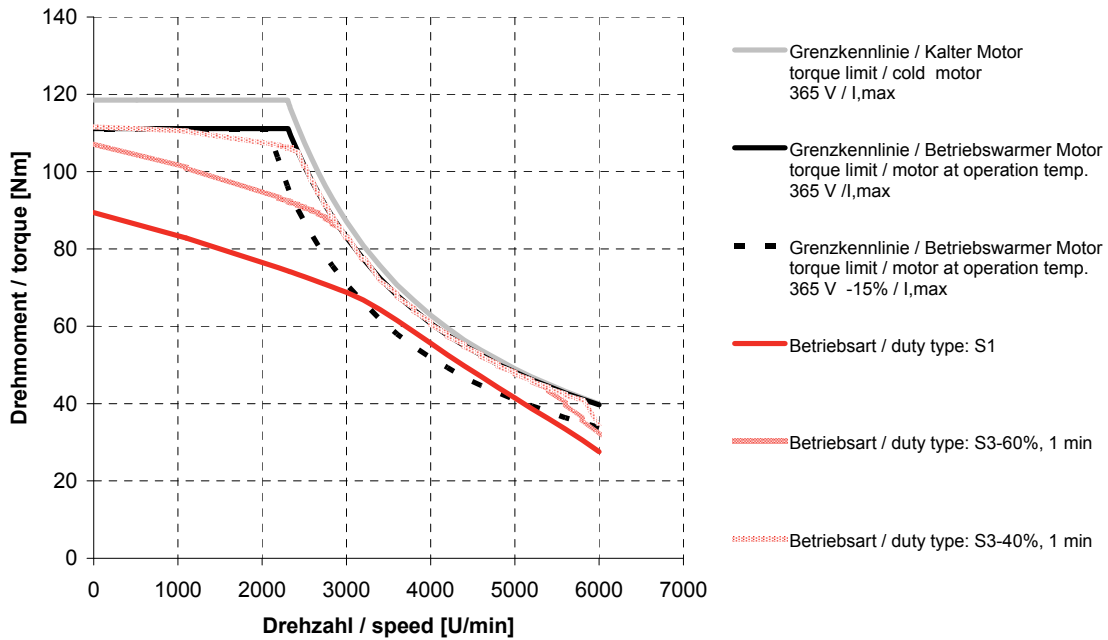
DSD2-100SO64W-20-54



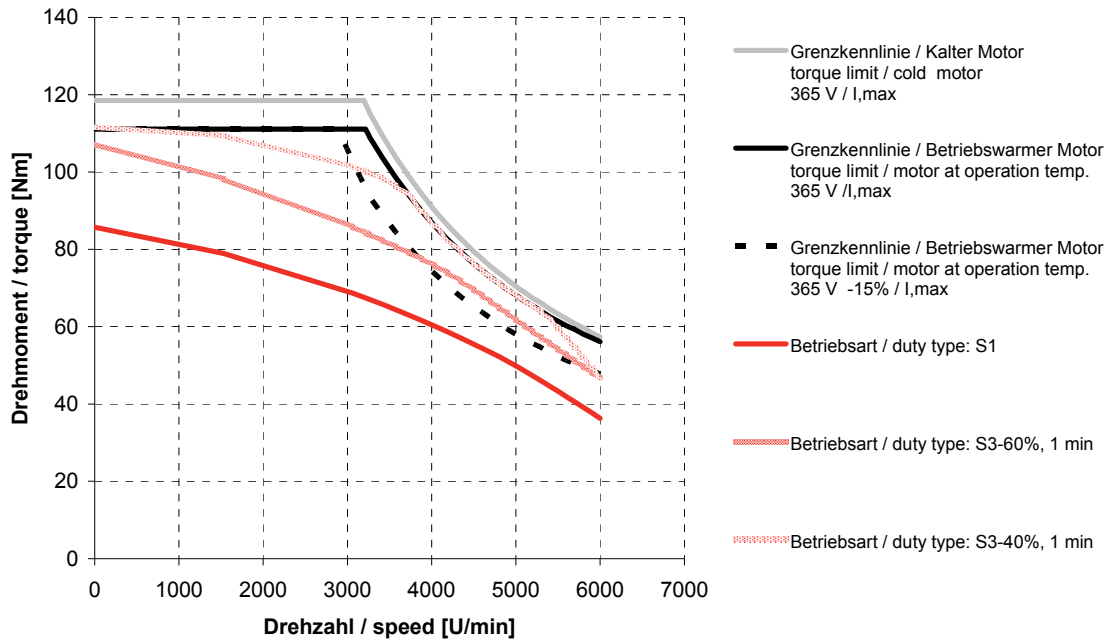
DSD2-100SO64W-25-54



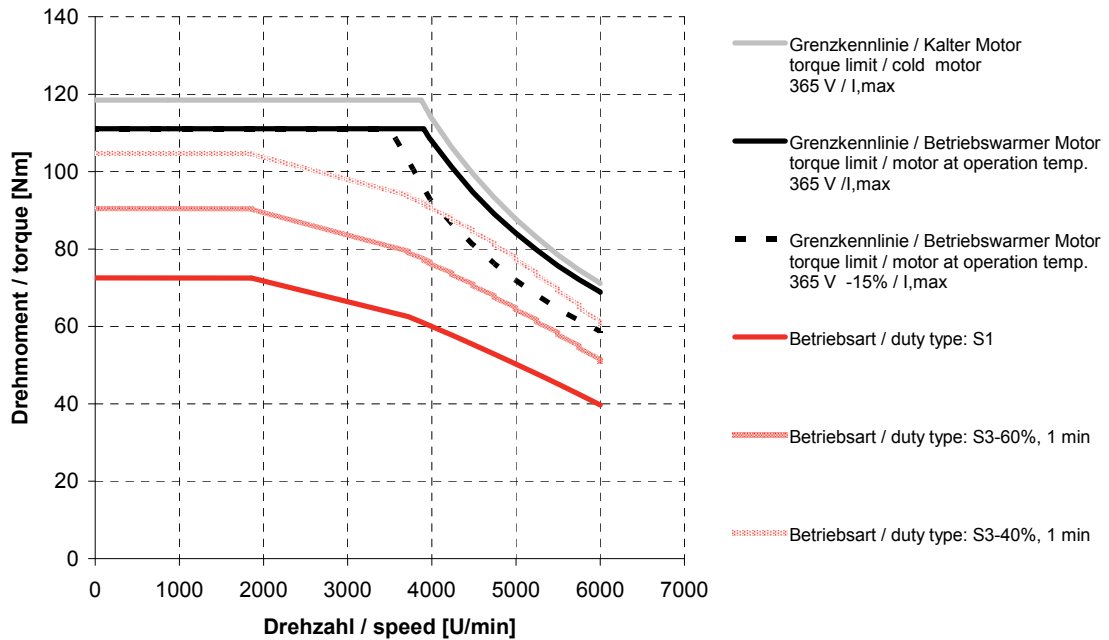
DSD2-100SO64W-30-54



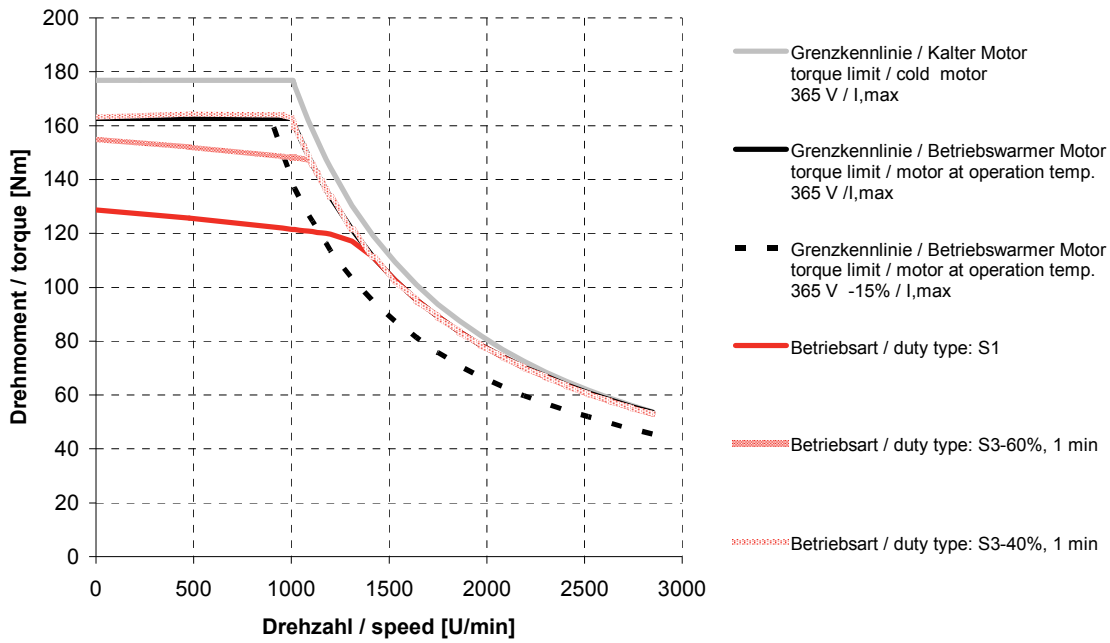
DSD2-100SO64W-45-54



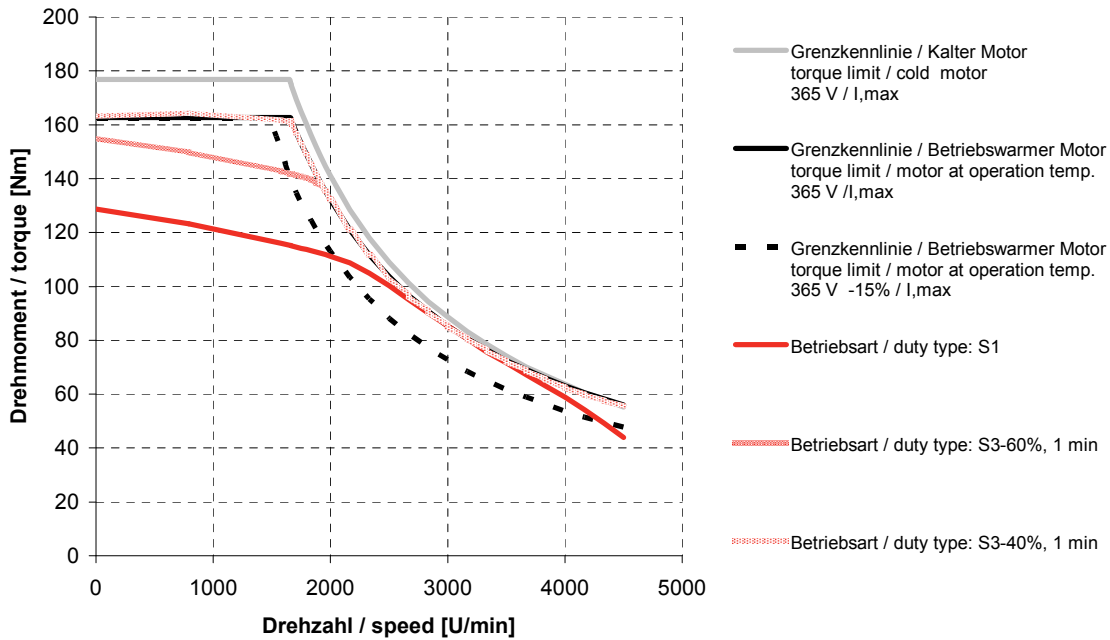
DSD2-100SO64W-60-54



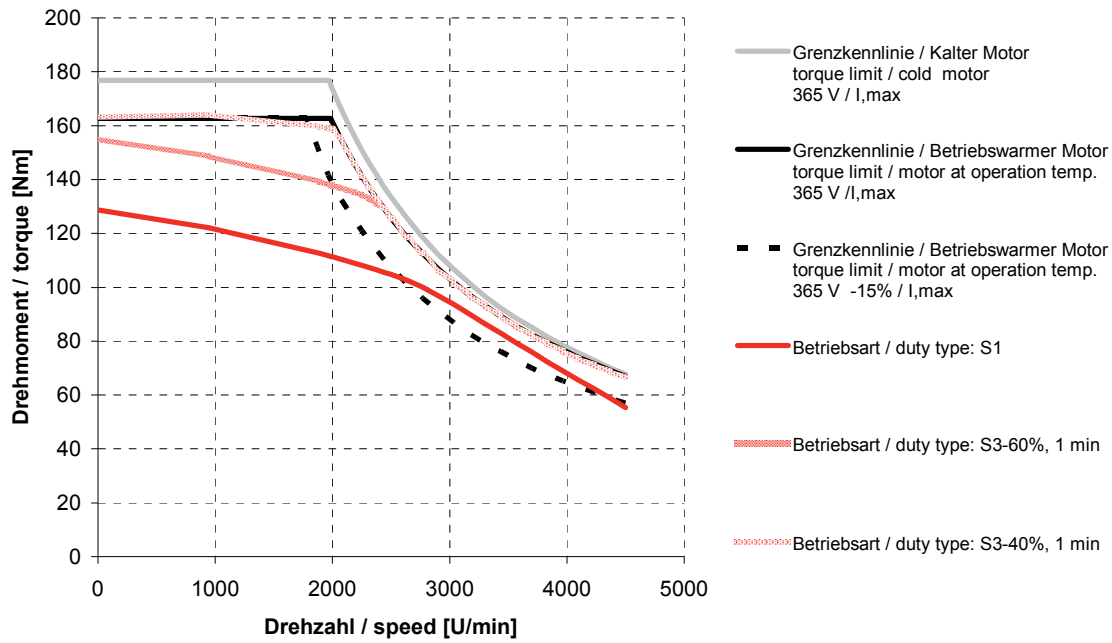
DSD2-100MO64W-12-54



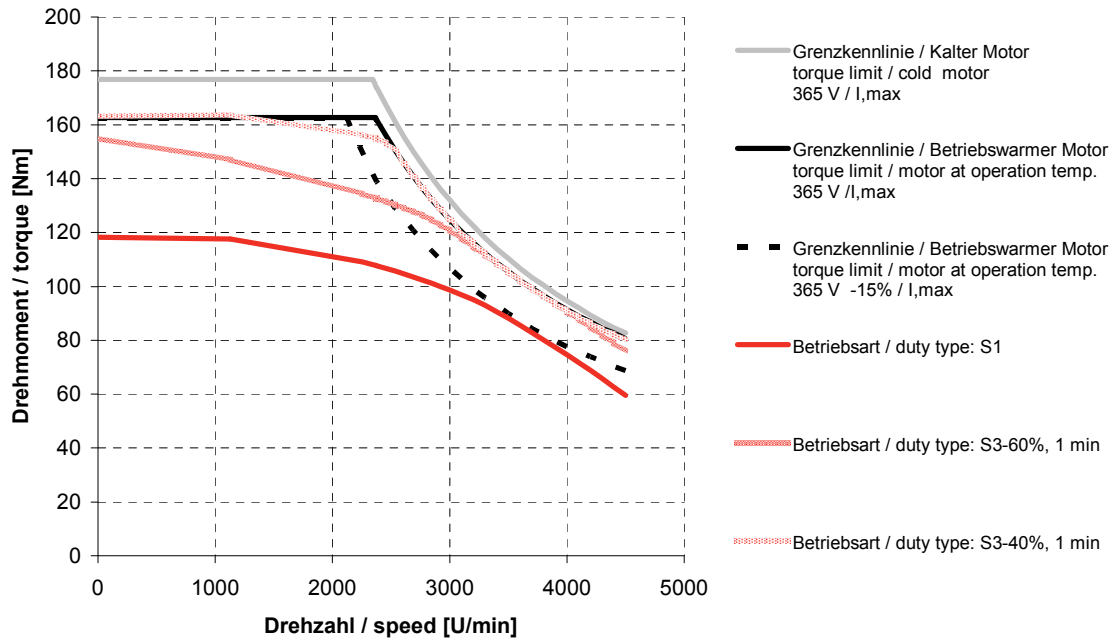
DSD2-100MO64W-20-54



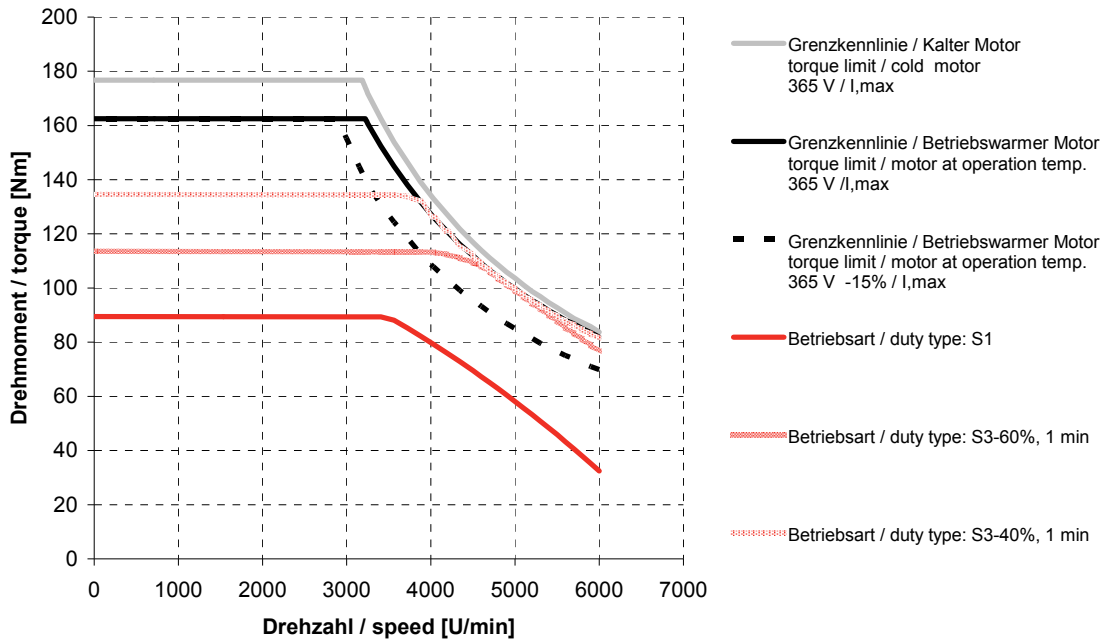
DSD2-100MO64W-25-54



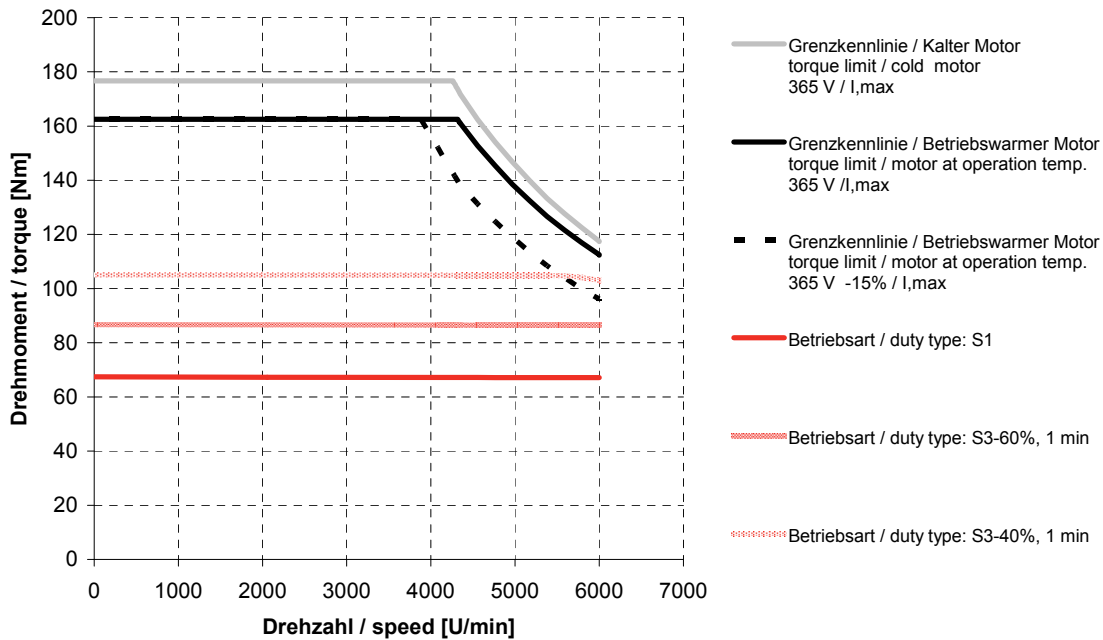
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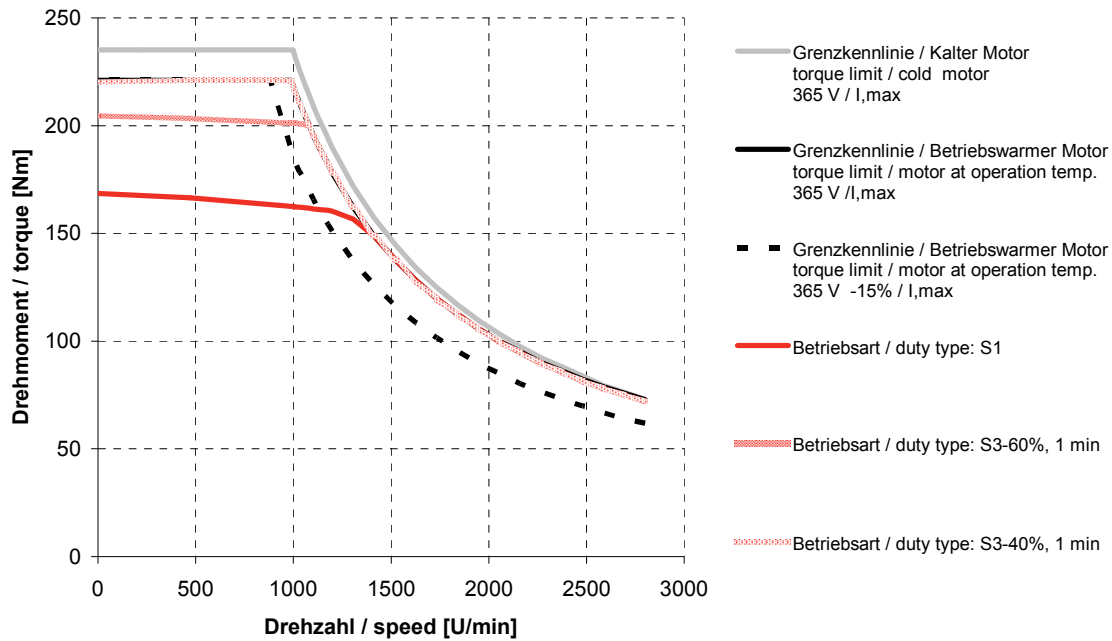
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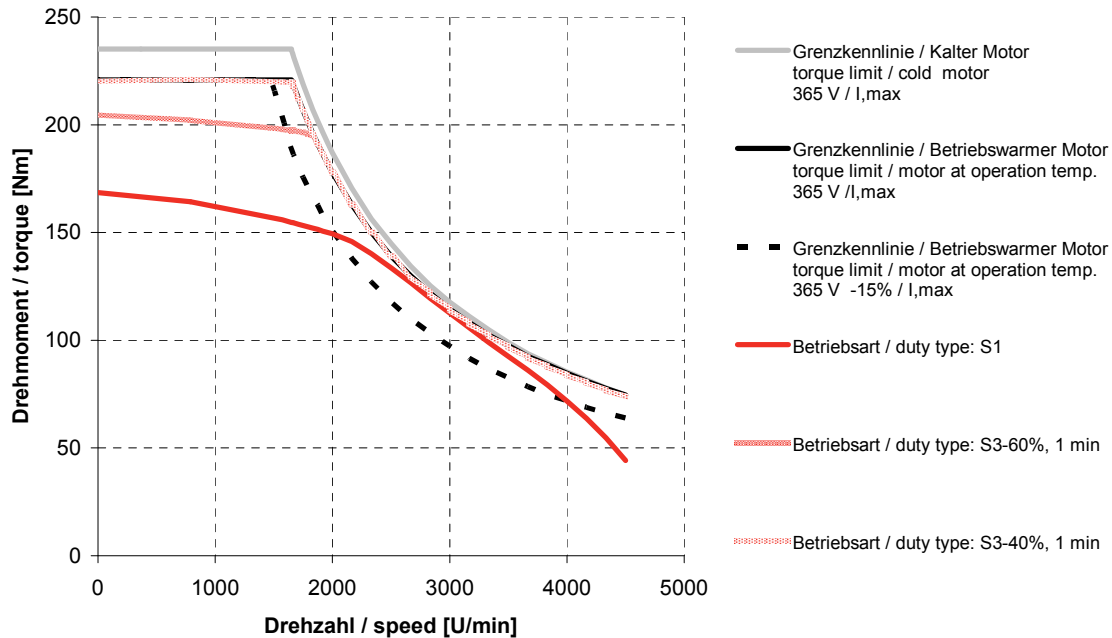
DSD2-100MO64W-60-54



DSD2-100LO64W-12-54

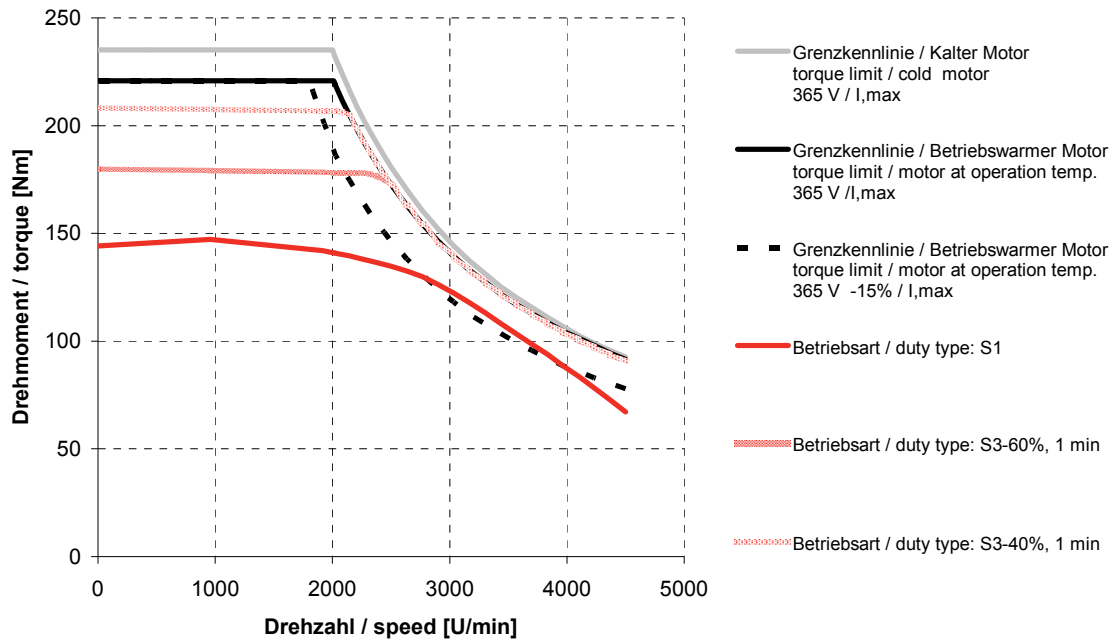


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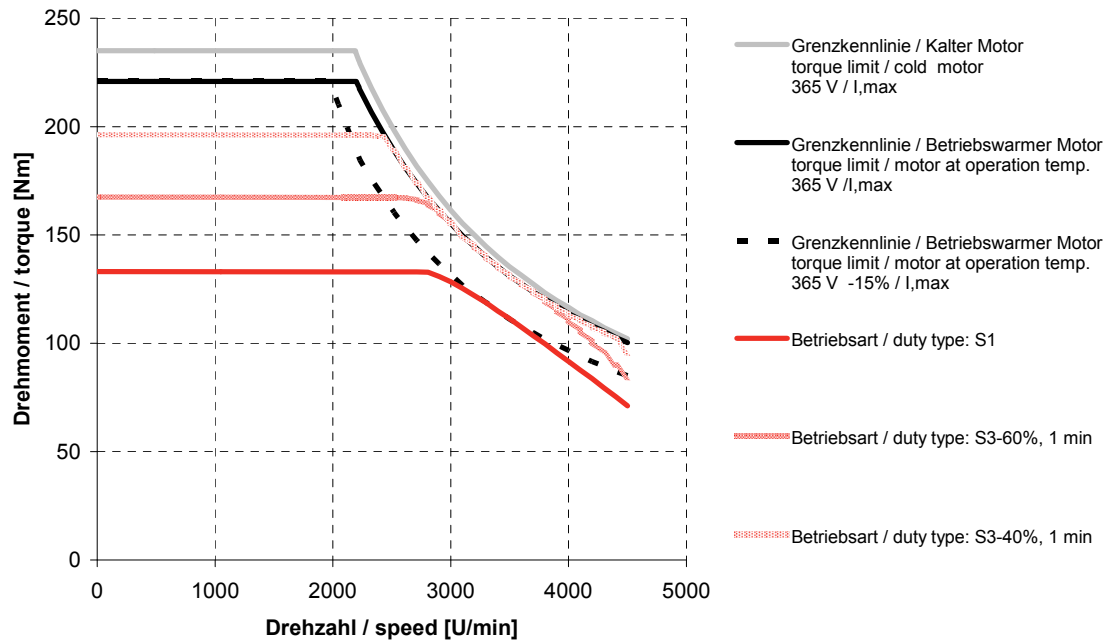




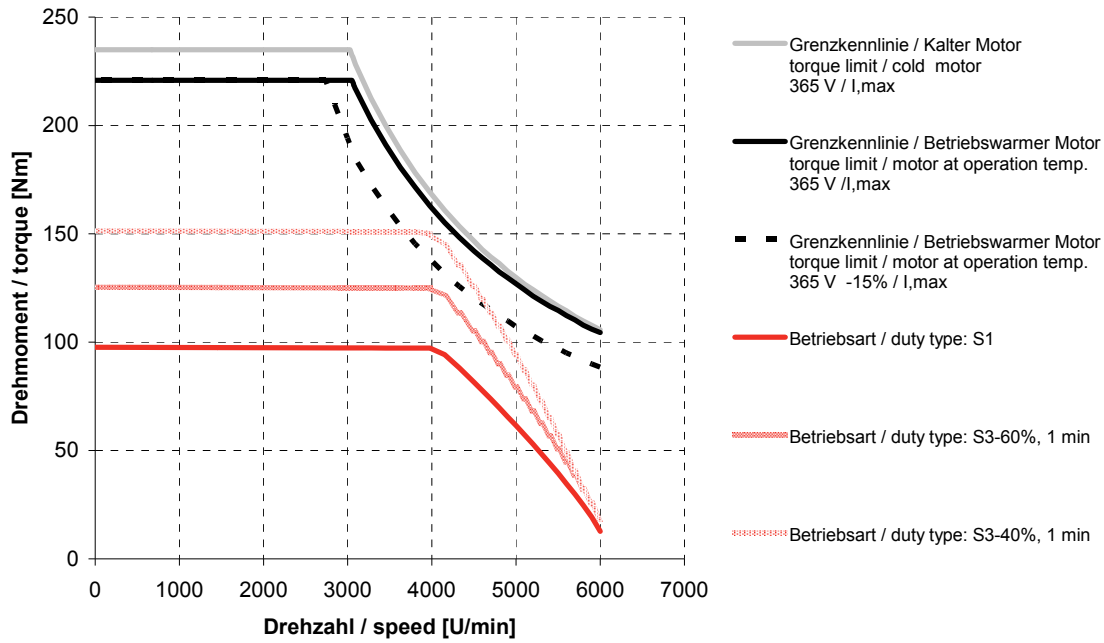
DSD2-100LO64W-25-54



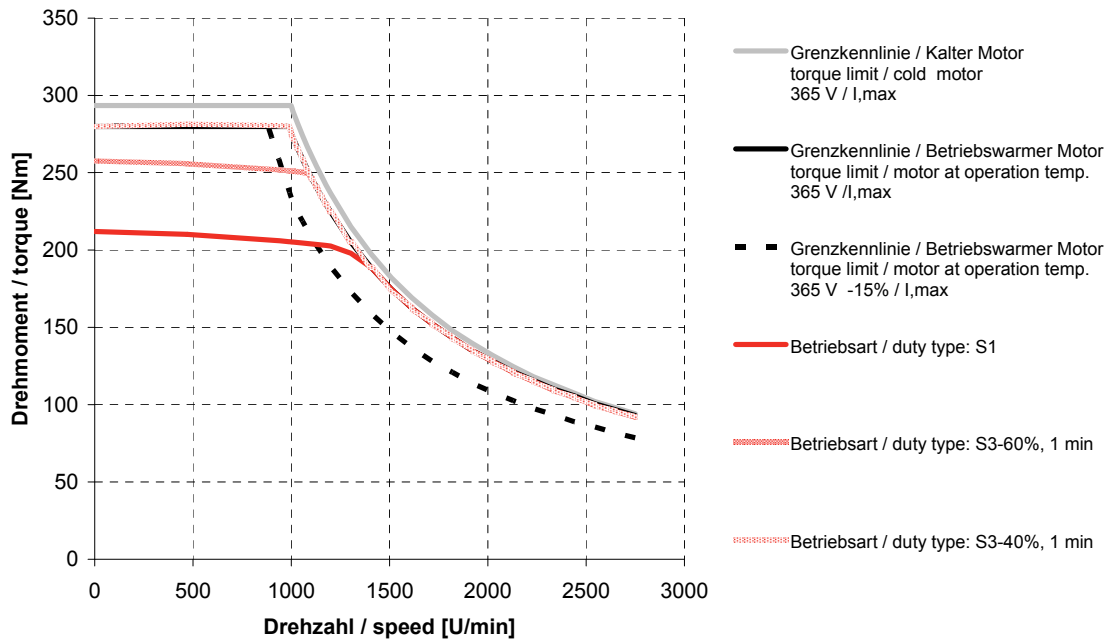
DSD2-100LO64W-30-54



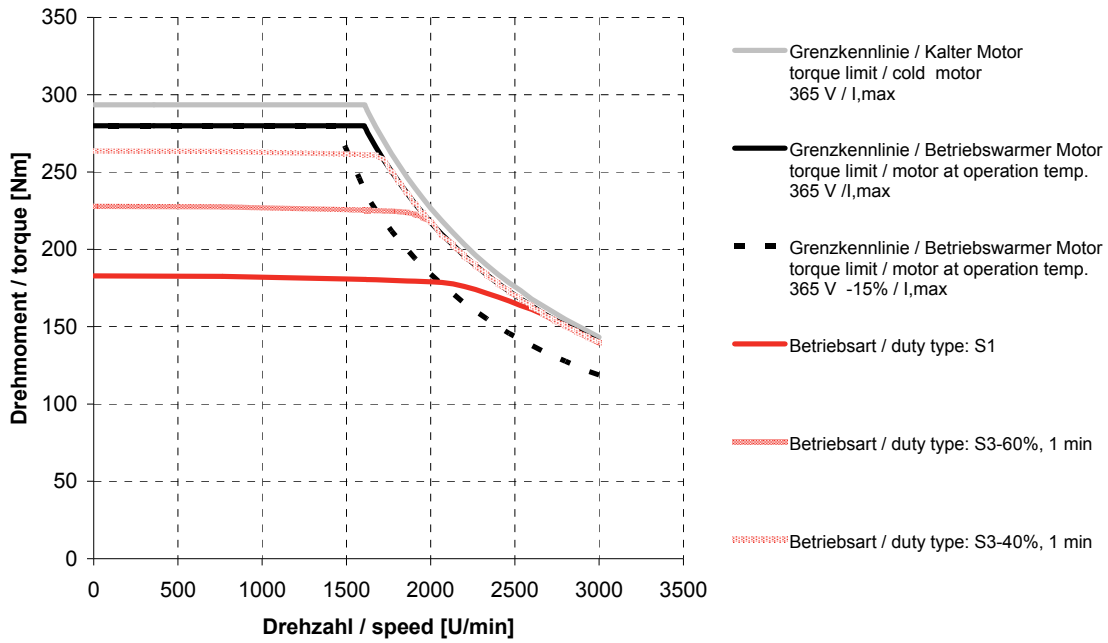
DSD2-100LO64W-45-54



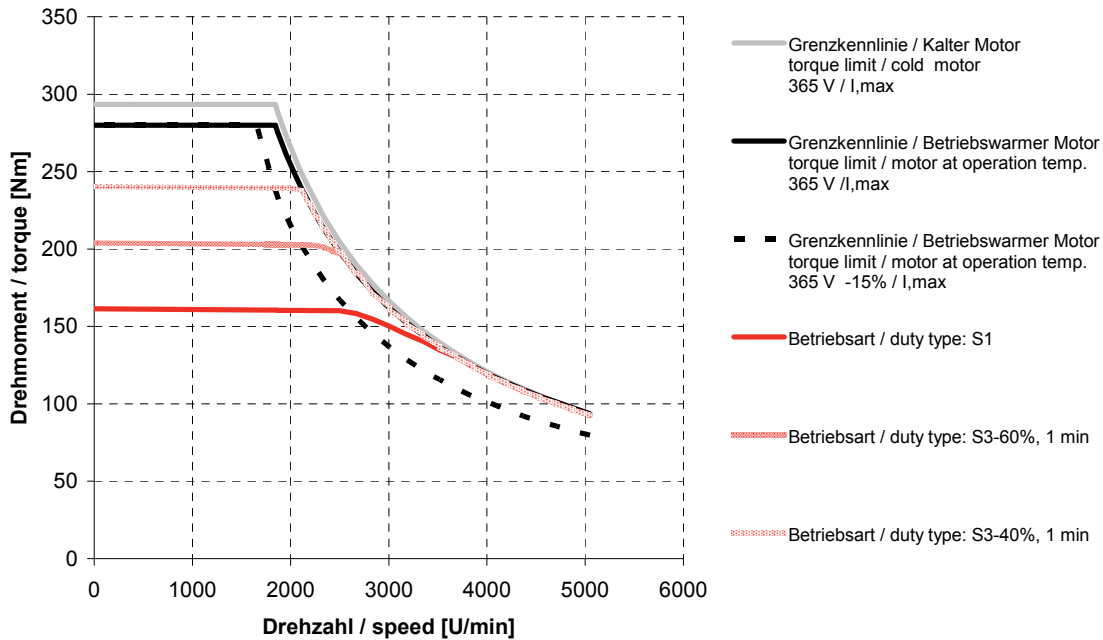
DSD2-100BO64W-12-54



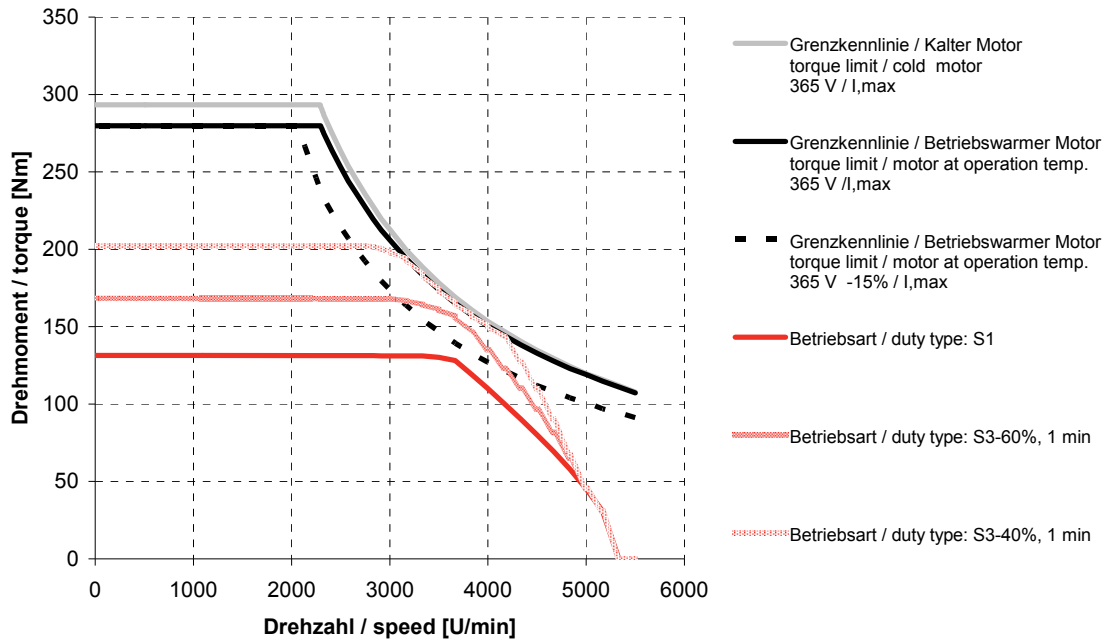
DSD2-100BO64W-20-54



DSD2-100BO64W-25-54



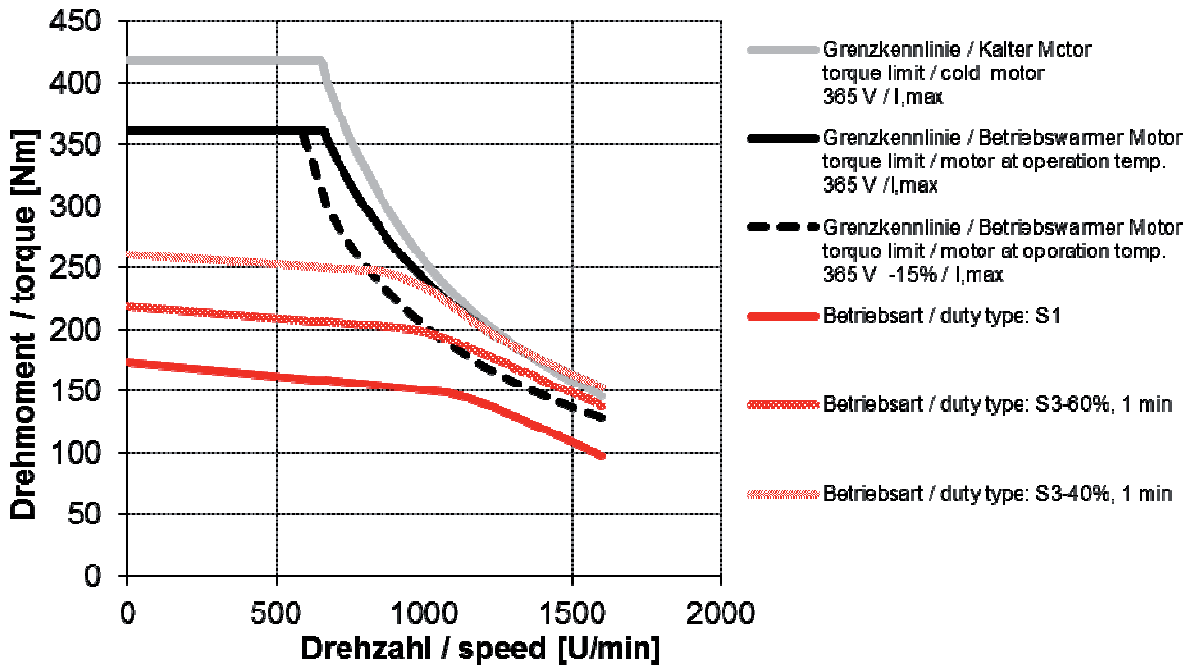
DSD2-100BO64W-30-54



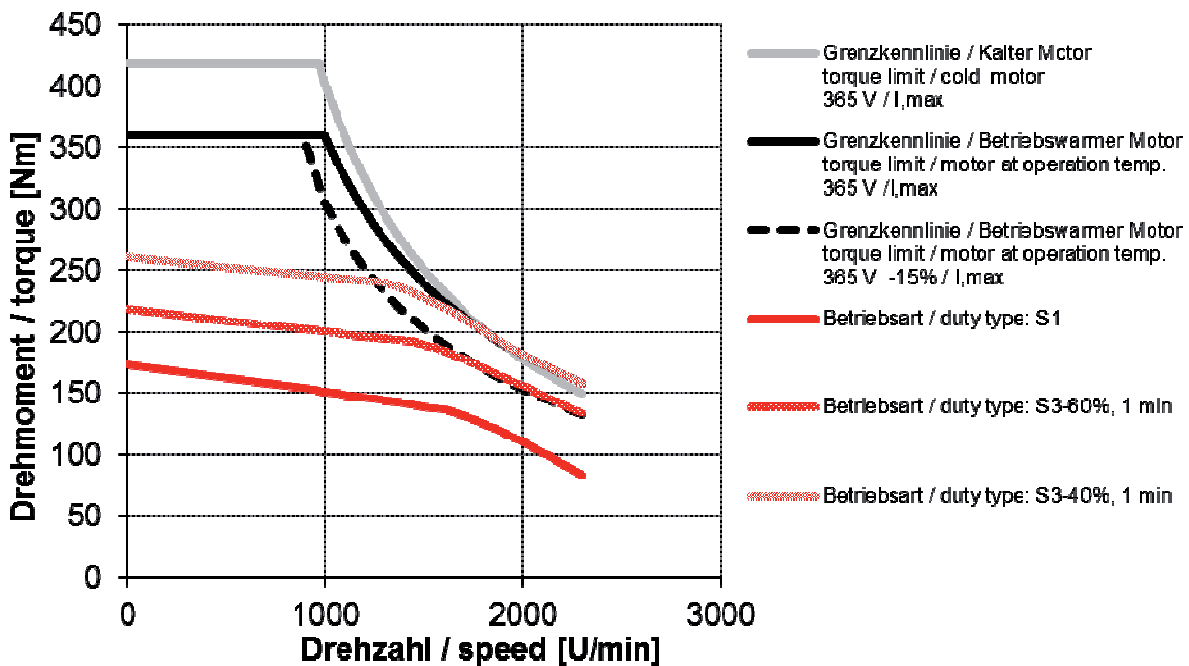
5.7. Motor characteristic curve DSD2-132

5.7.1. DSD2-132..54A(R)-..(IP54 surface cooled)

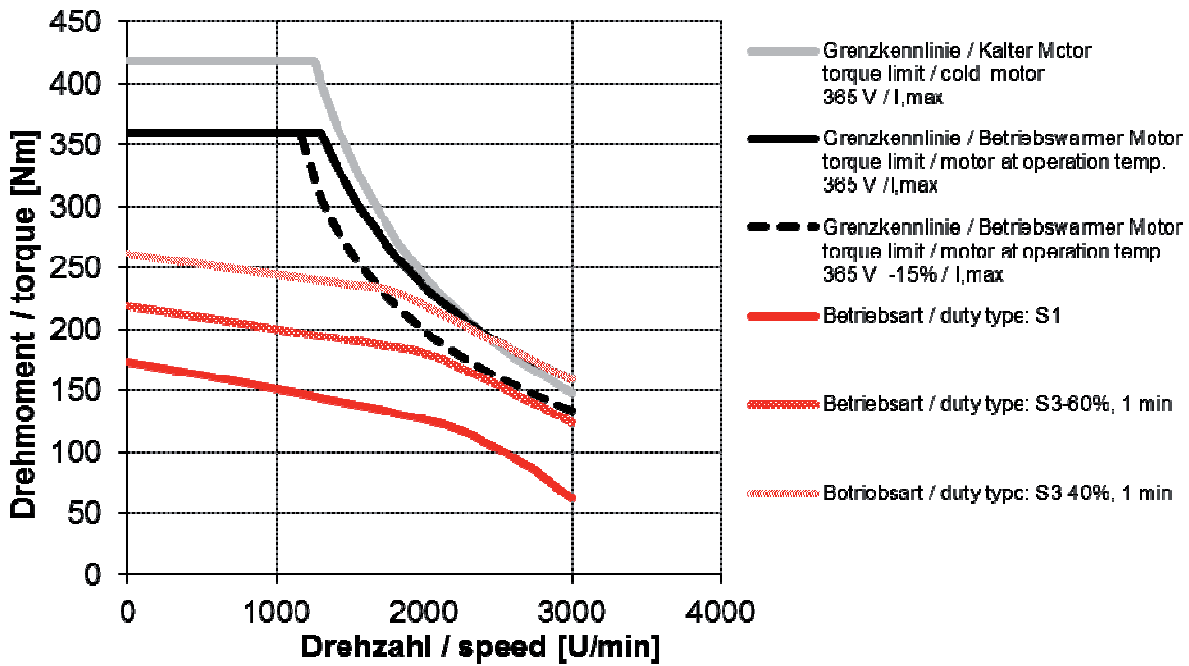
DSD2-132KO54A(R)-10-5



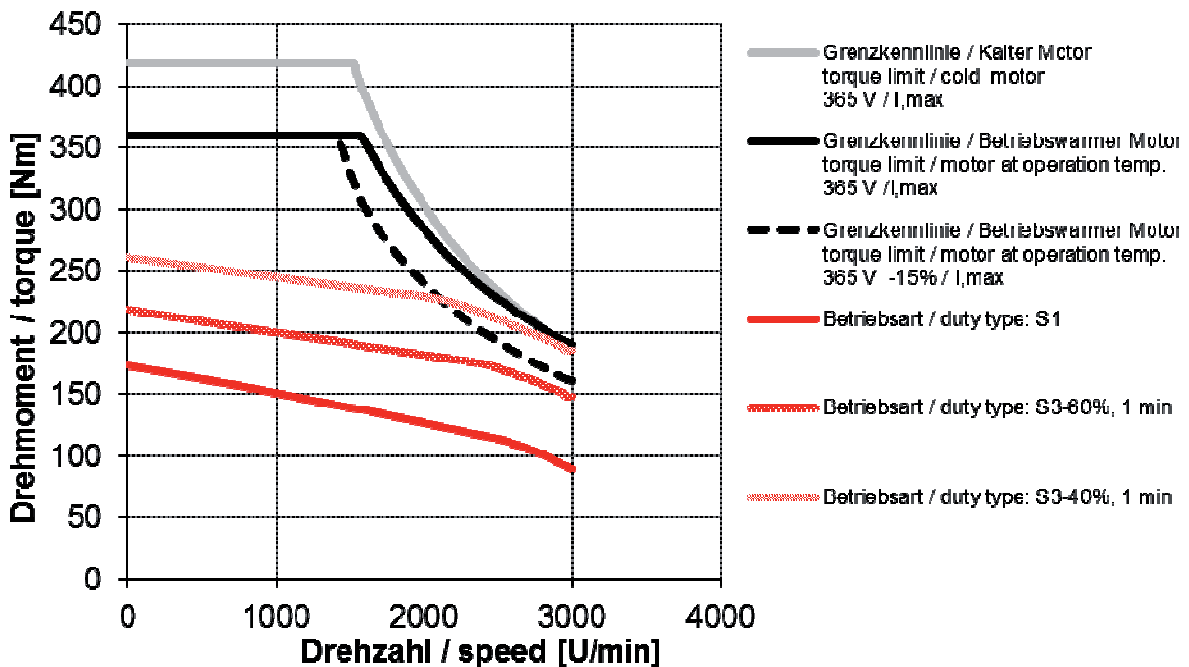
DSD2-132KO54A(R)-15-5



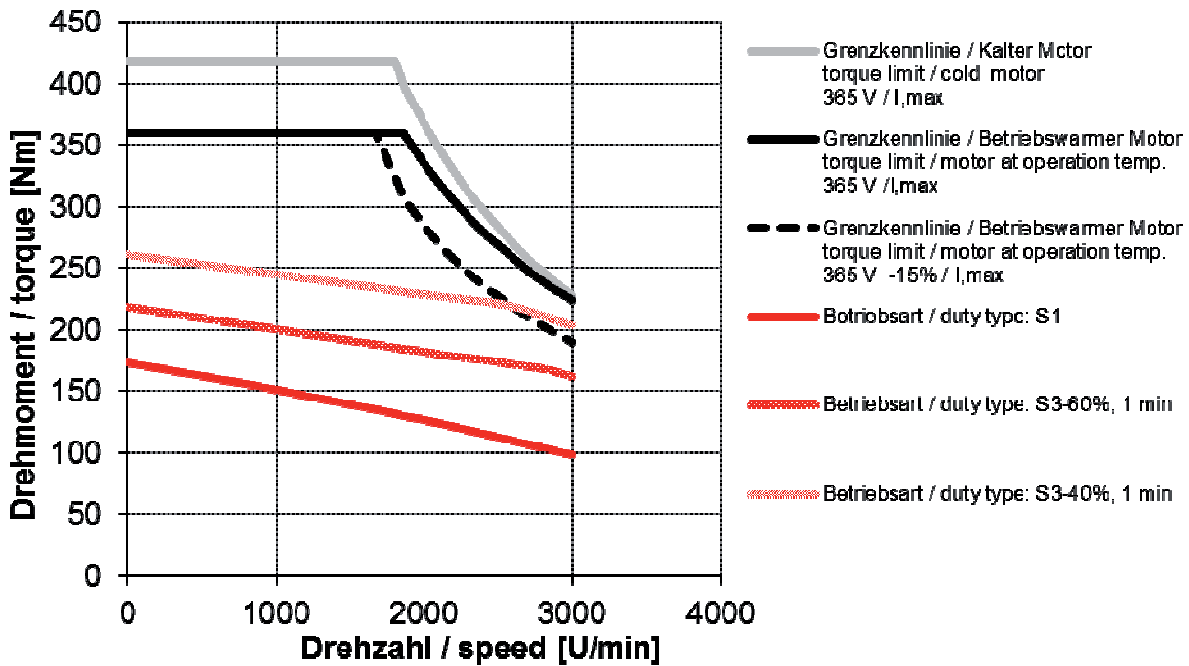
DSD2-132KO54A(R)-20-5



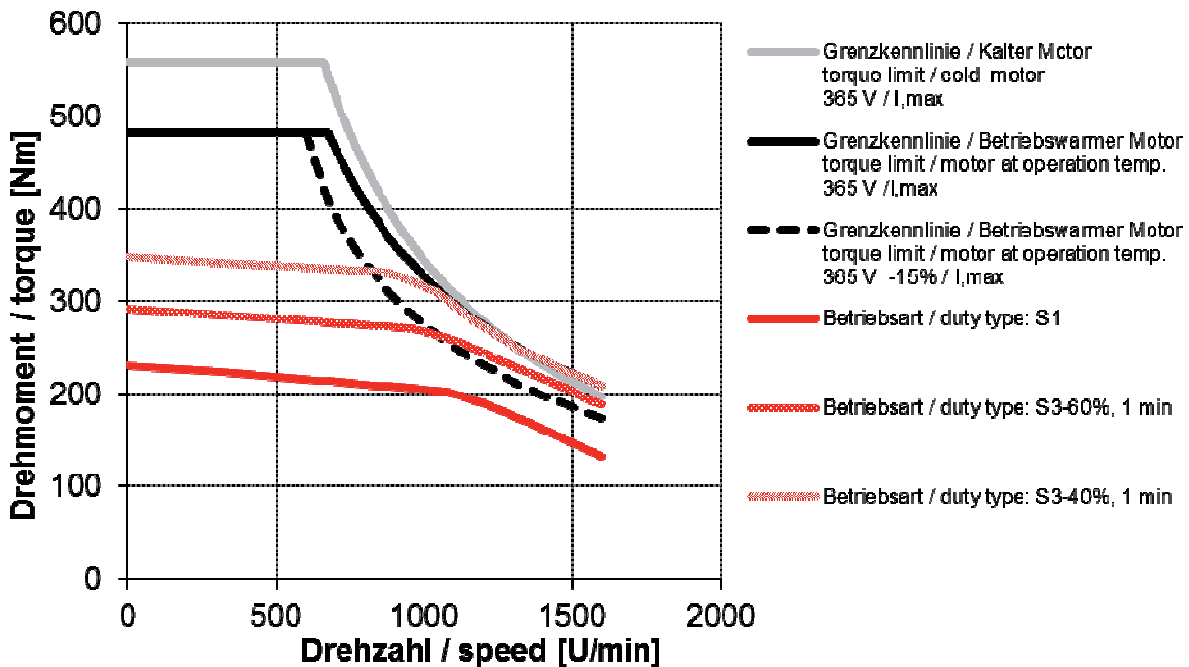
DSD2-132KO54A(R)-25-5



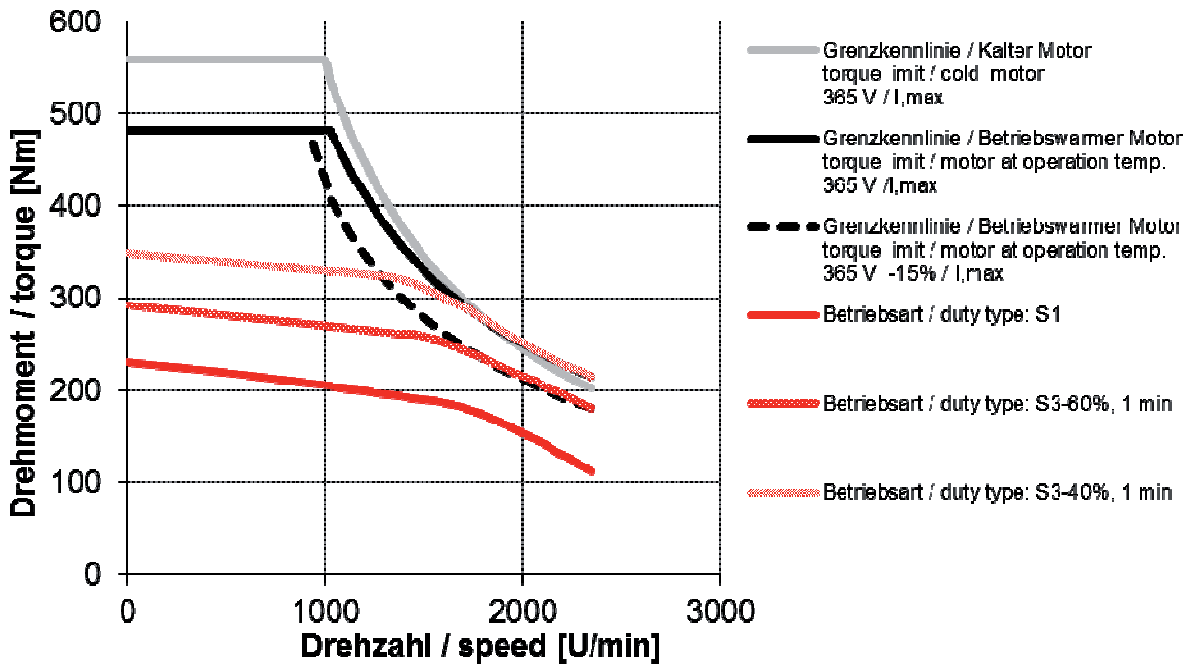
DSD2-132KO54A(R)-30-5



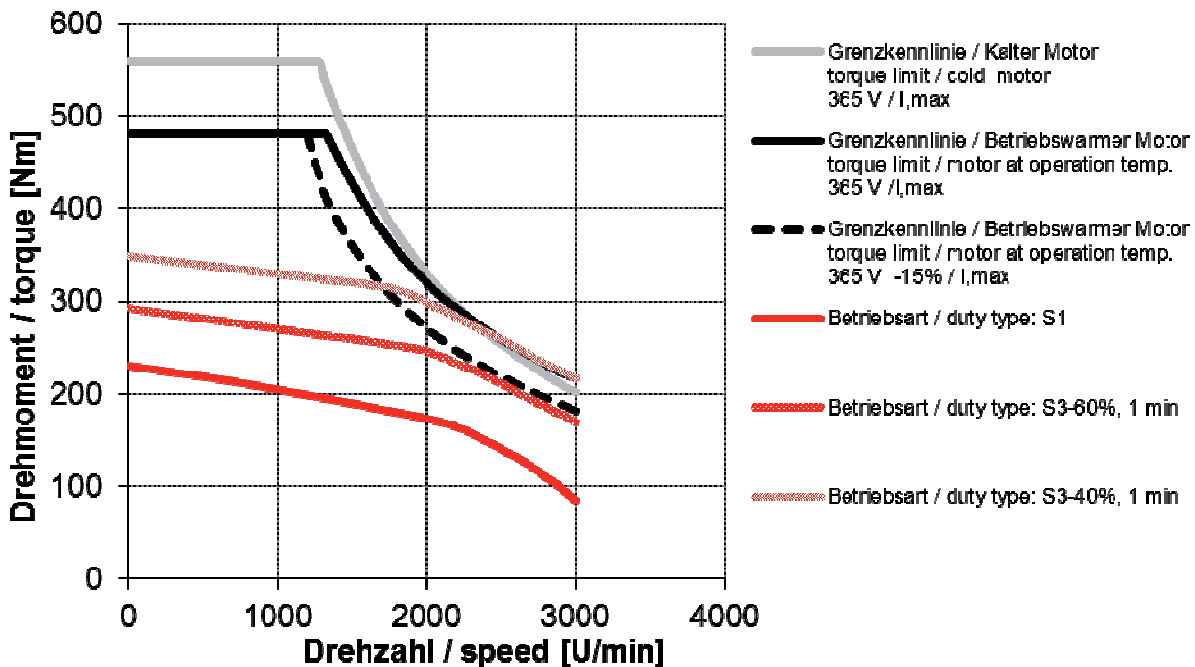
DSD2-132MO54A(R)-10-5



DSD2-132MO54A(R)-15-5

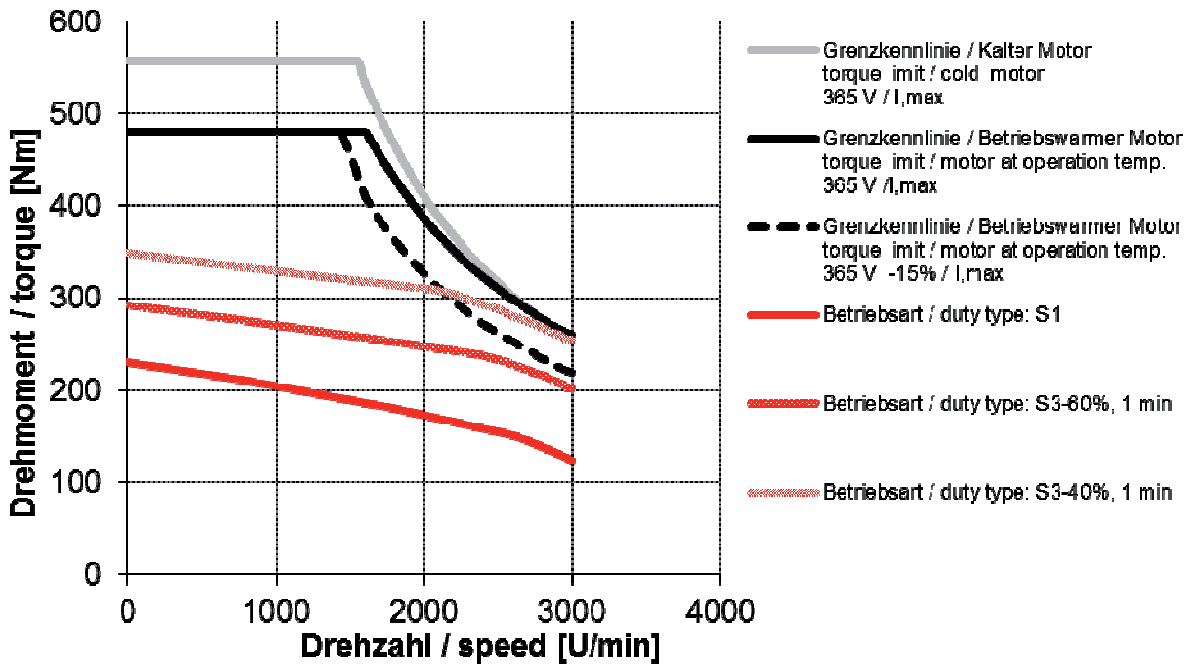


DSD2-132MO54A(R)-20-5

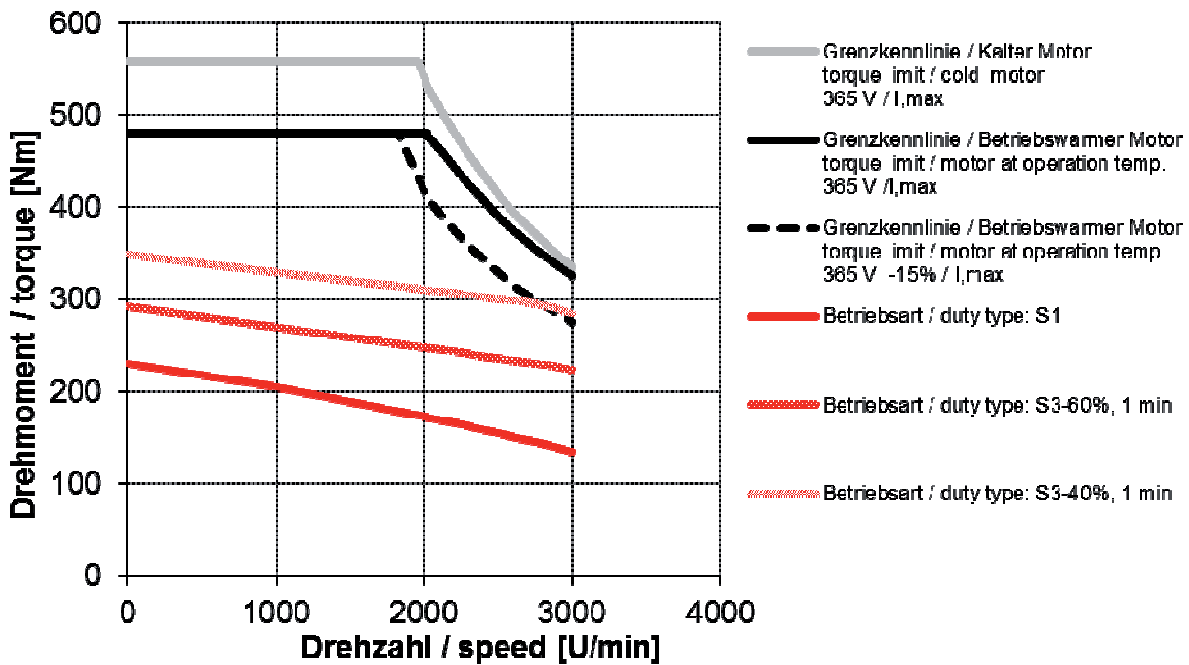




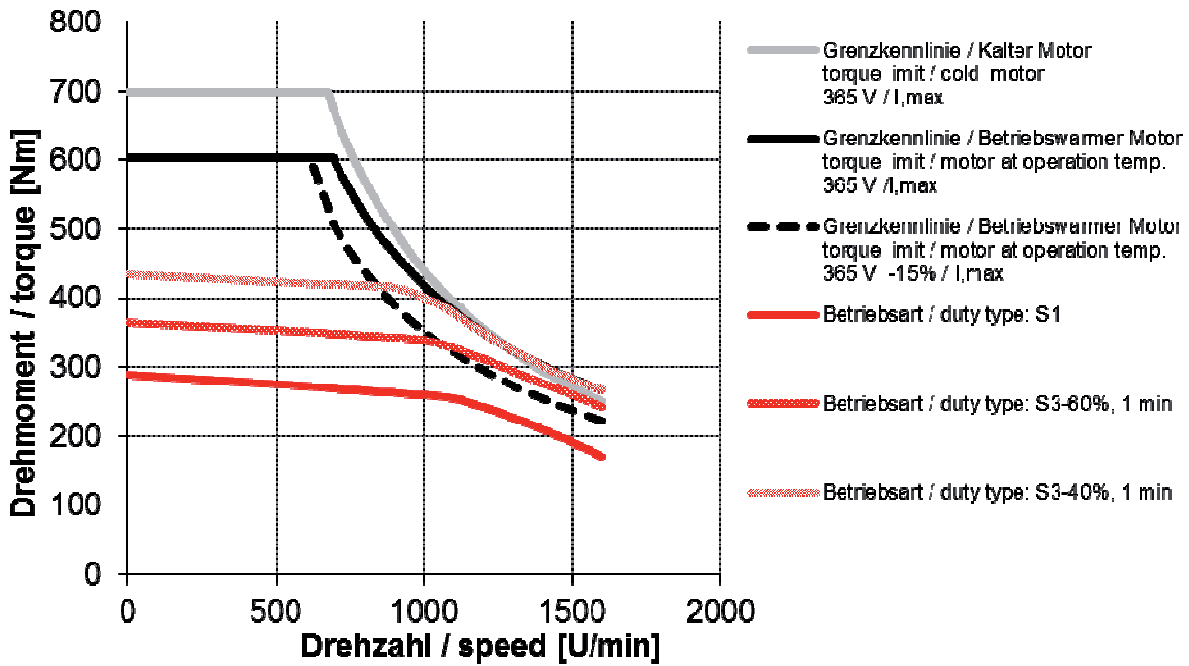
DSD2-132MO54A(R)-25-5



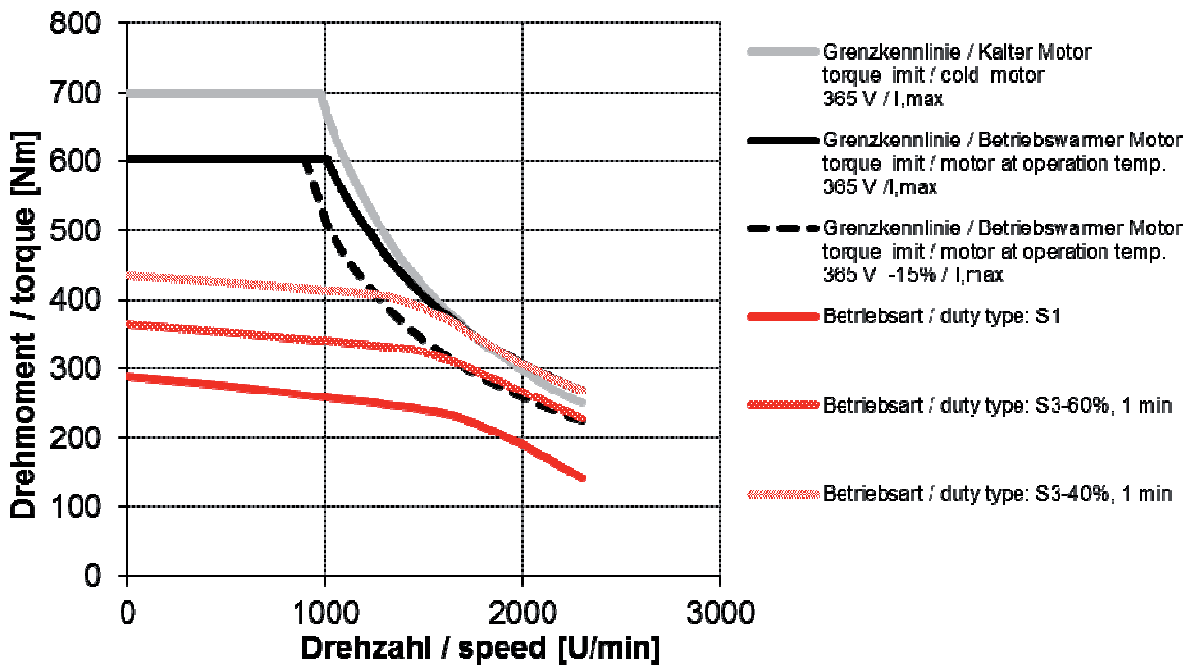
DSD2-132MO54A(R)-30-5



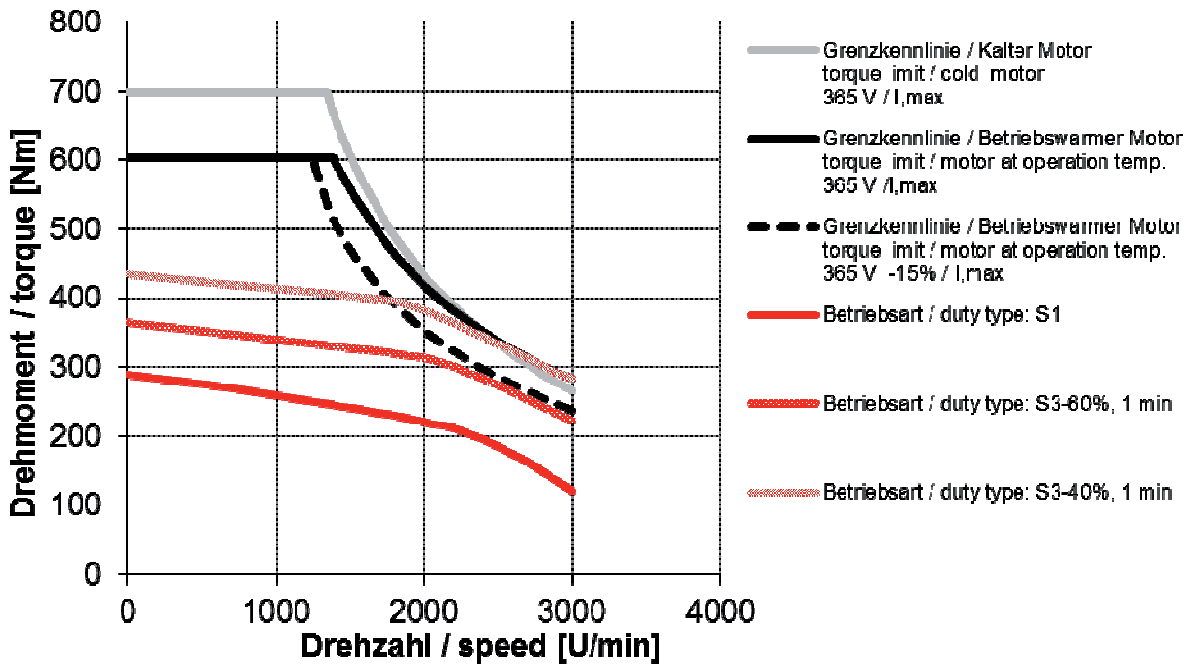
DSD2-132LO54A(R)-10-5



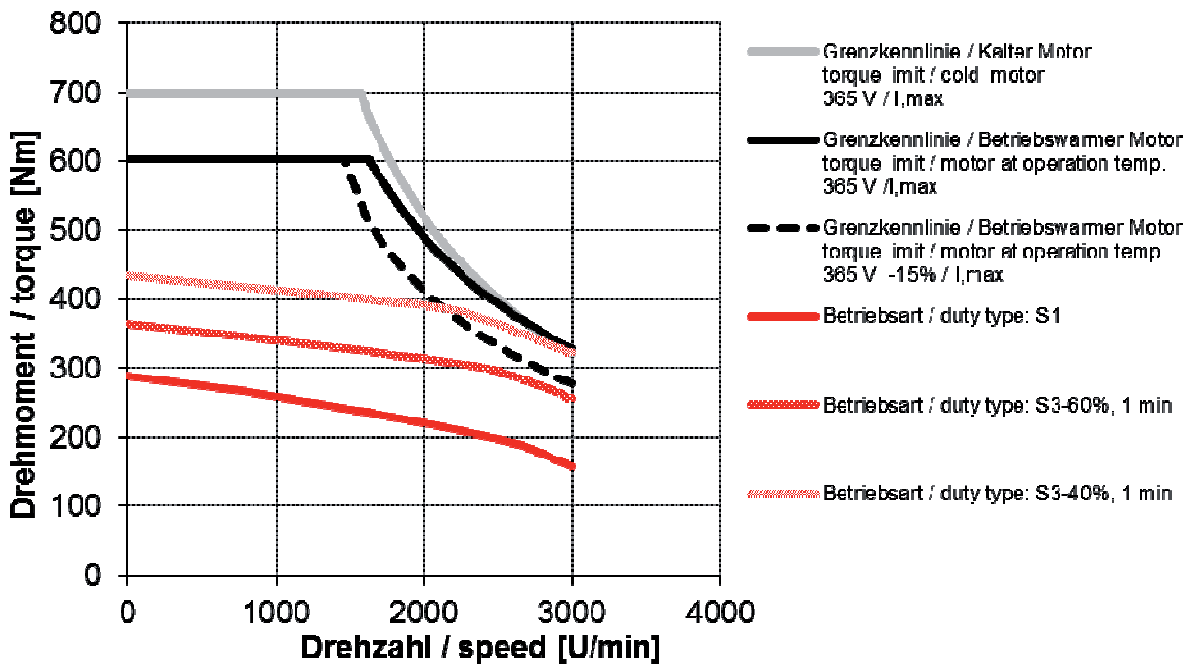
DSD2-132LO54A(R)-15-5



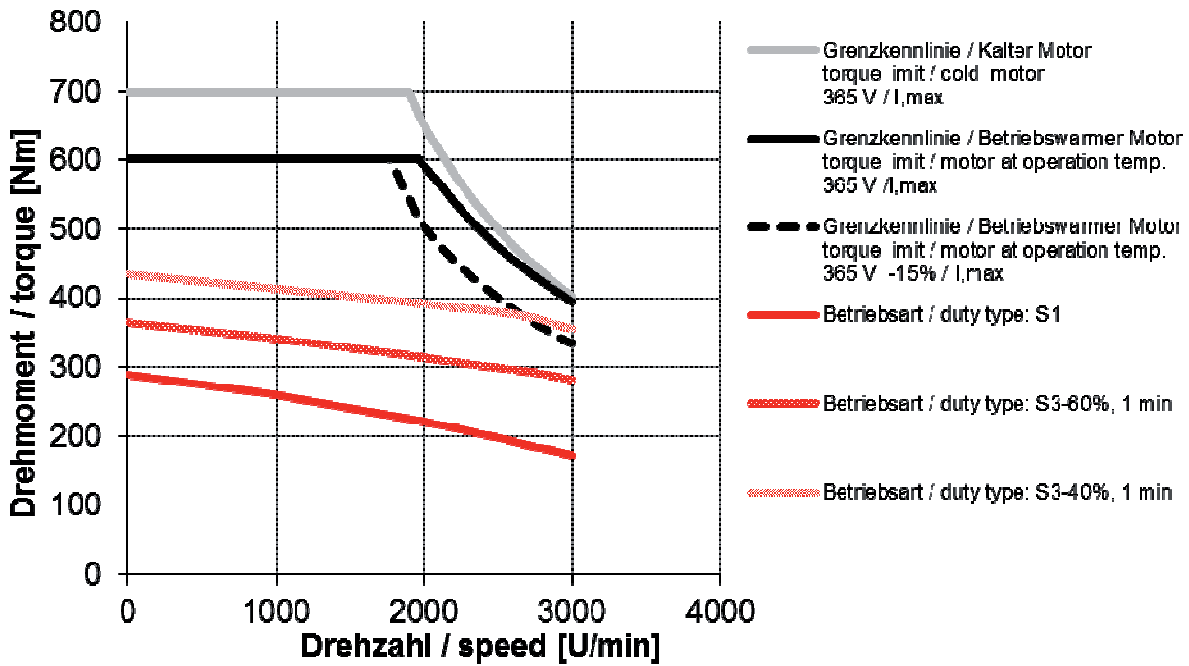
DSD2-132LO54A(R)-20-5



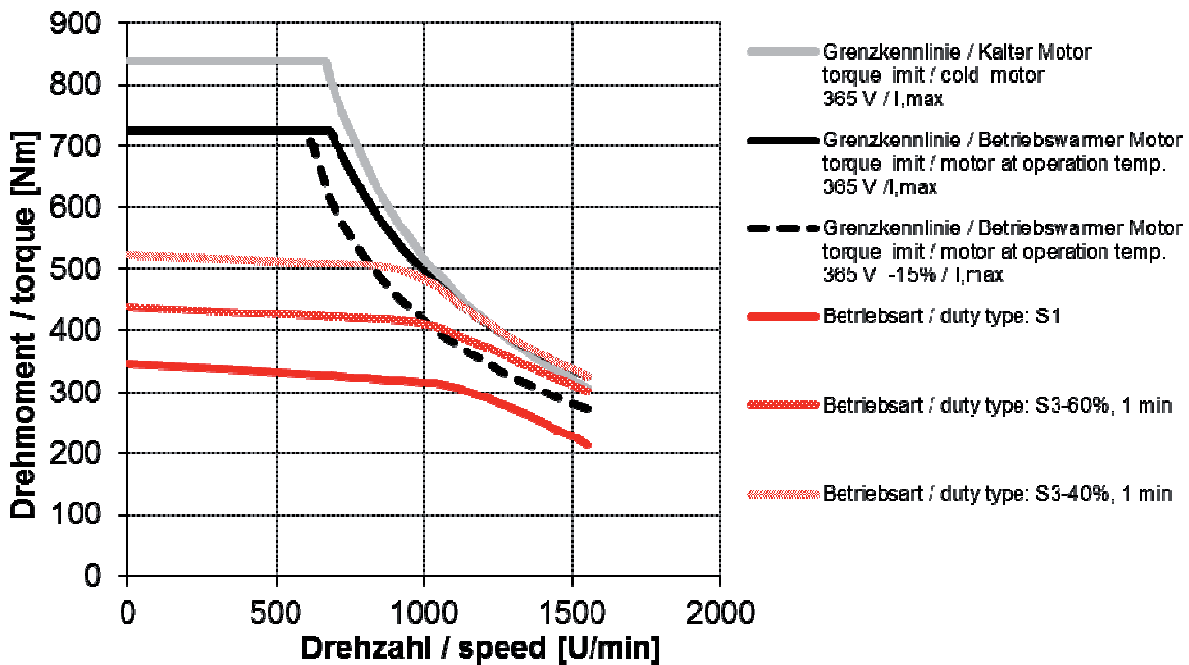
DSD2-132LO54A(R)-25-5



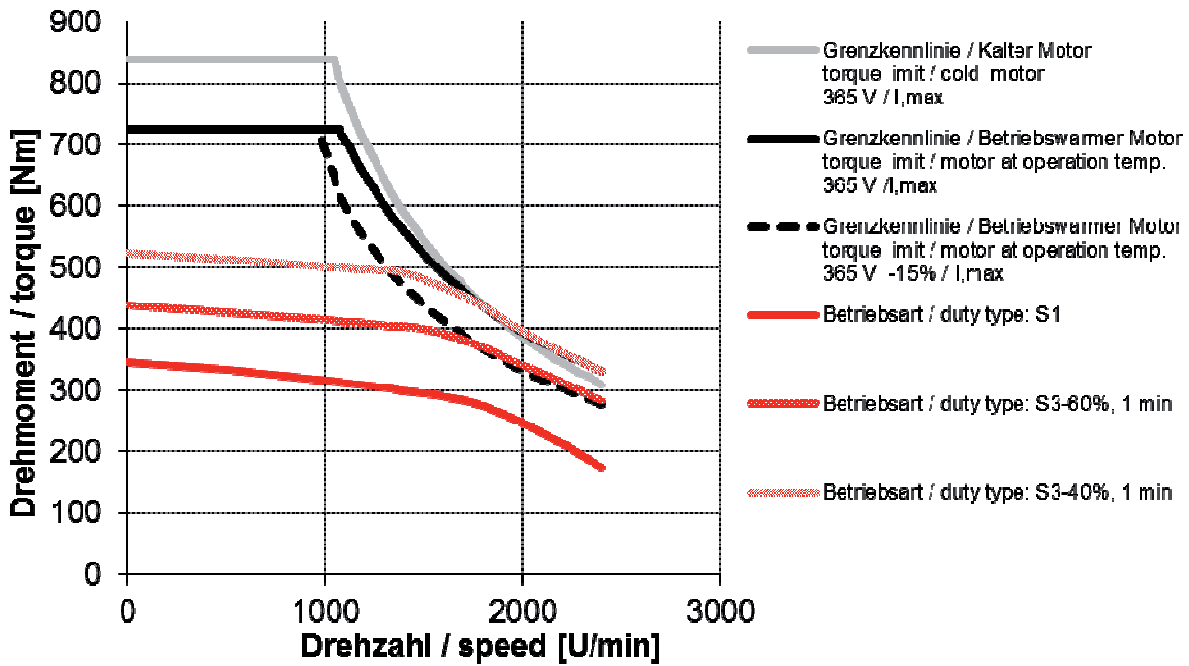
DSD2-132LO54A(R)-30-5



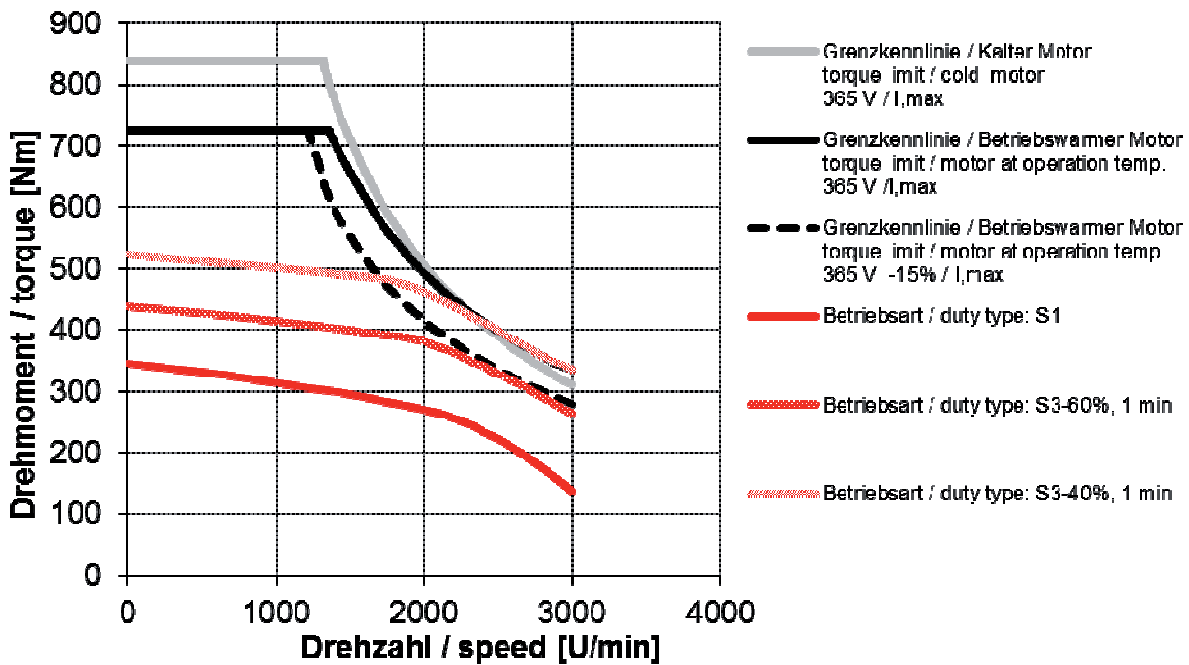
DSD2-132BO54A(R)-10-5



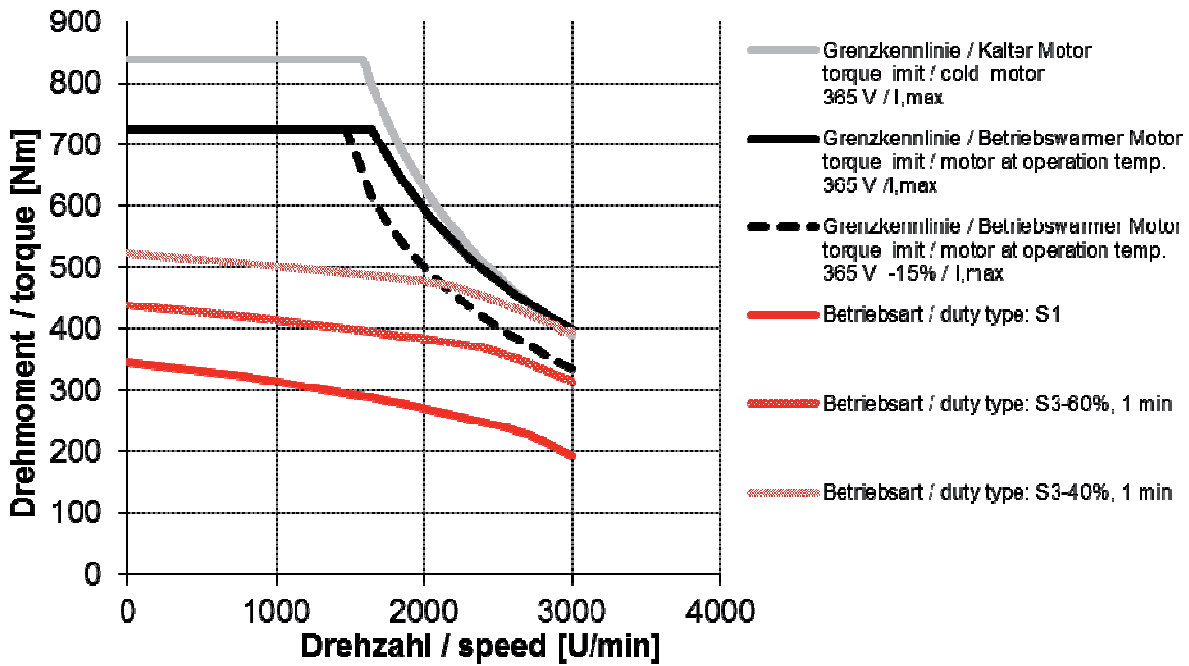
DSD2-132BO54A(R)-15-5



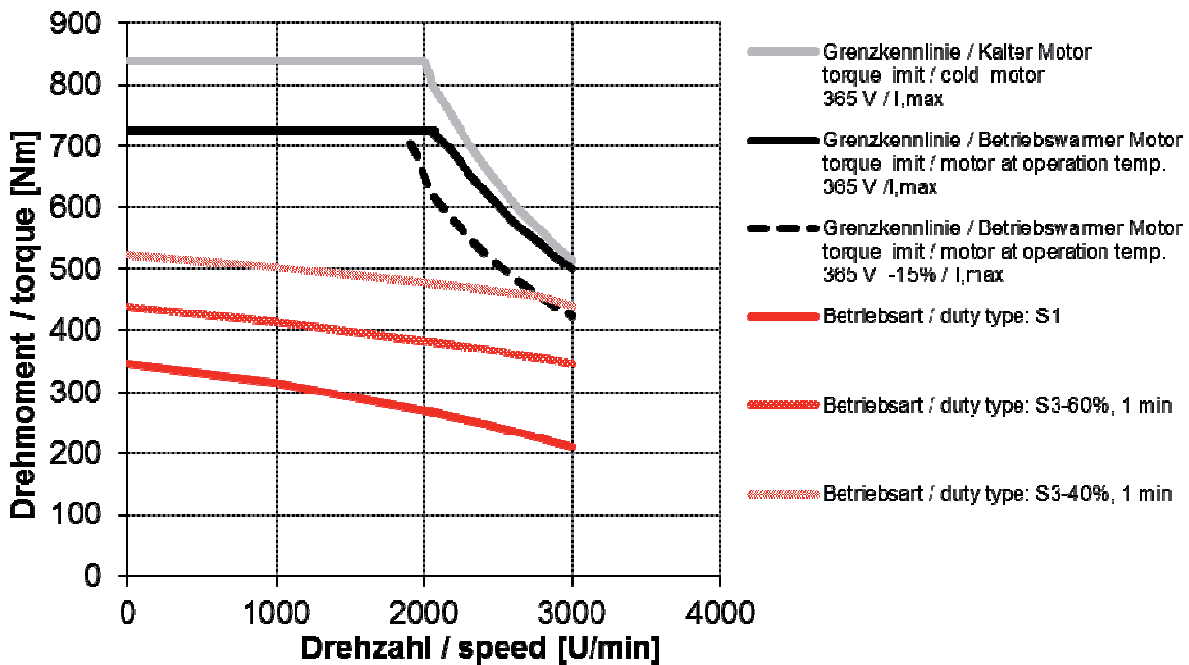
DSD2-132BO54A(R)-20-5



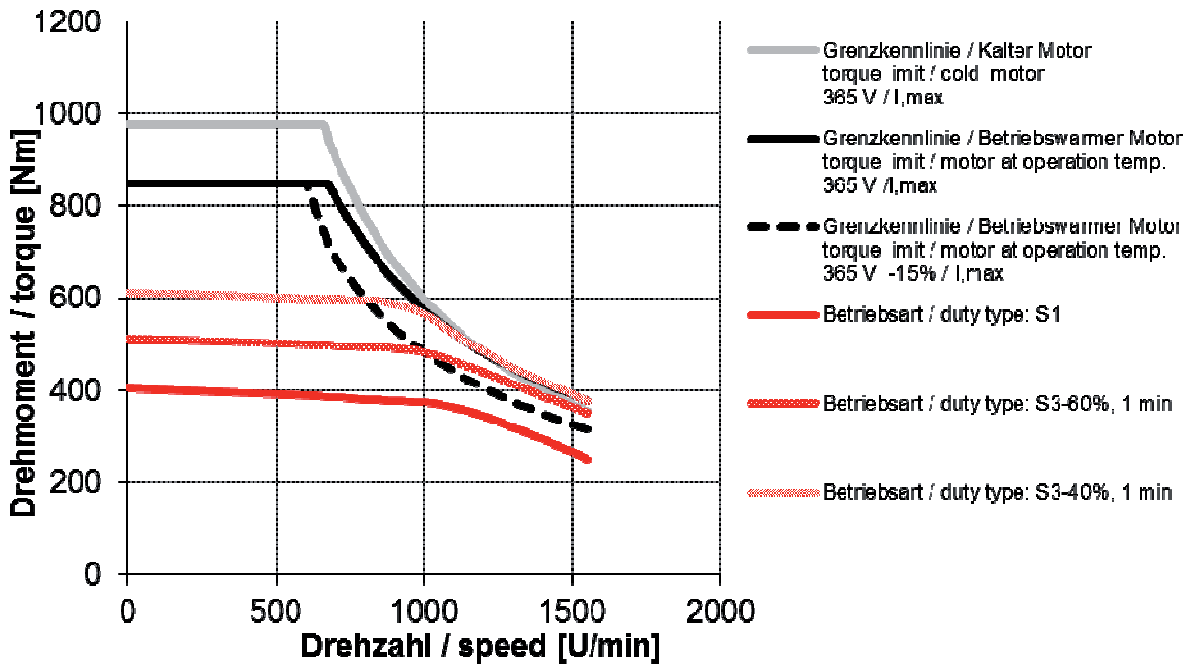
DSD2-132BO54A(R)-25-5



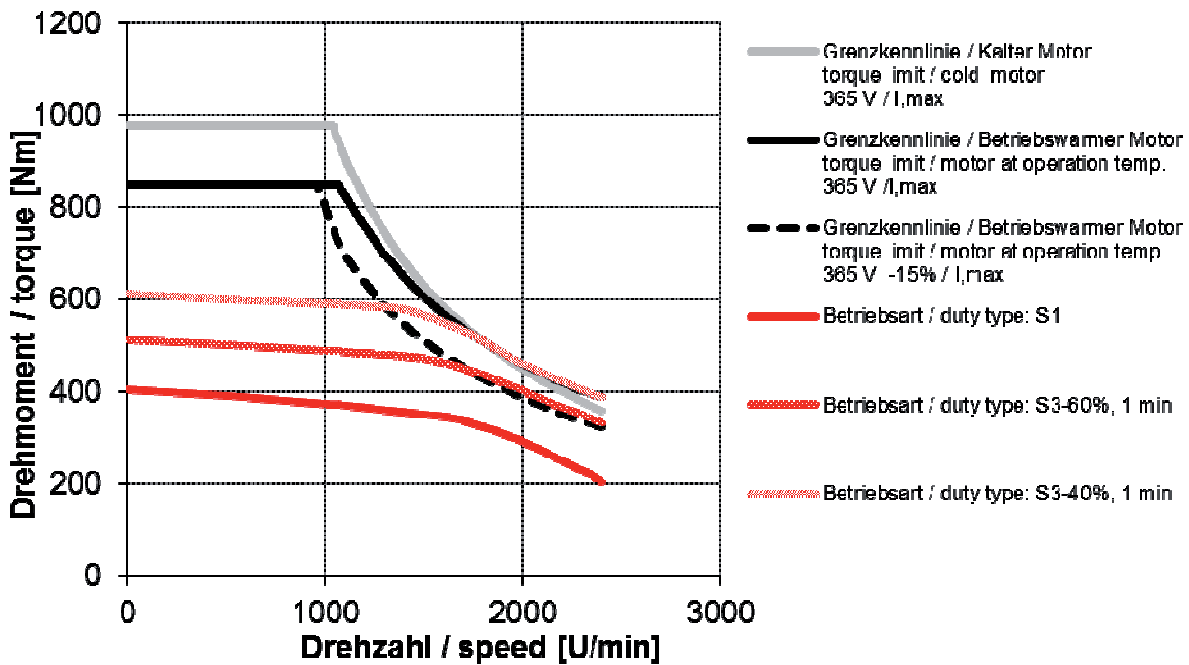
DSD2-132BO54A(R)-30-5



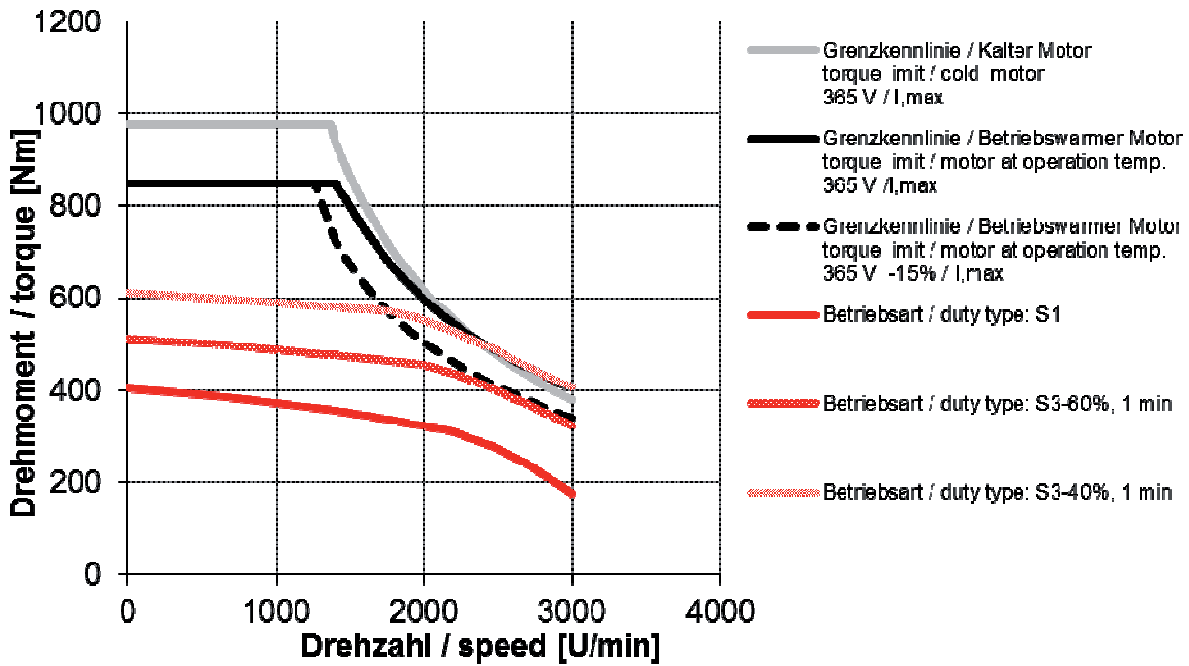
DSD2-132XO54A(R)-10-5



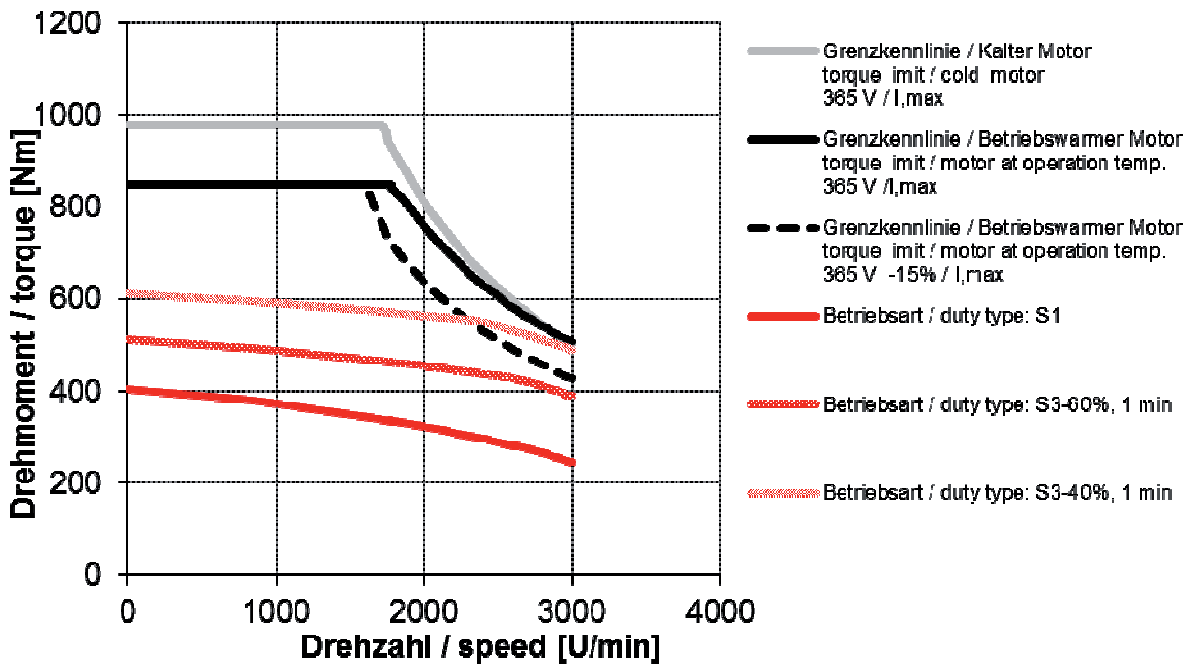
DSD2-132XO54A(R)-15-5



DSD2-132XO54A(R)-20-5

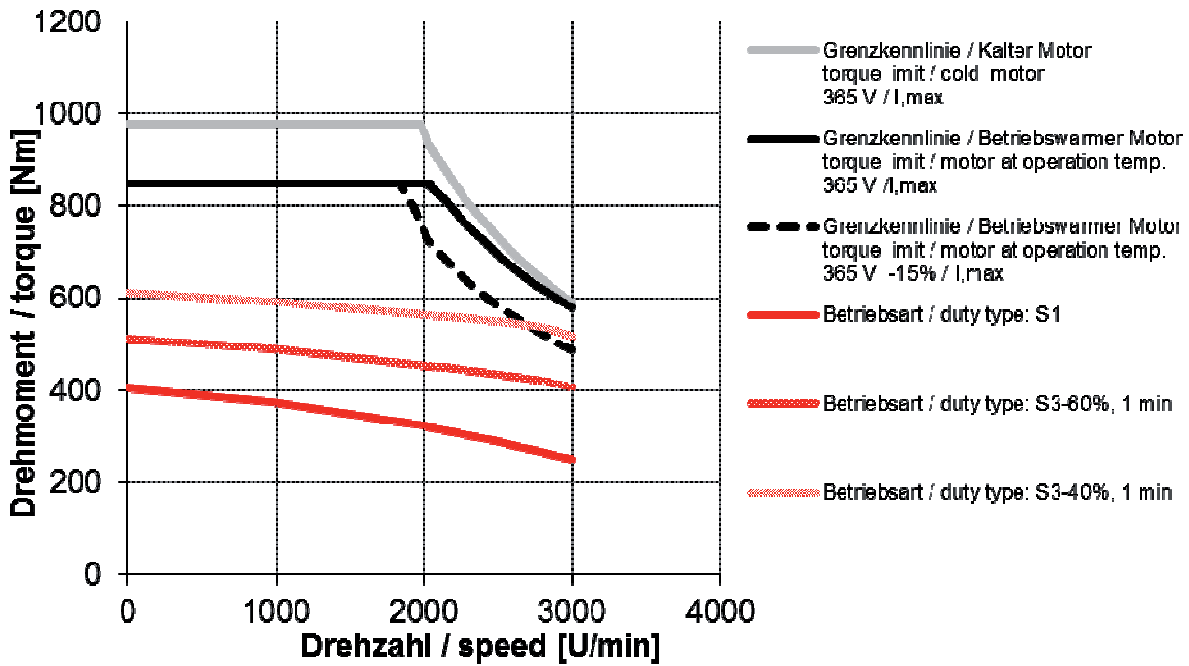


DSD2-132XO54A(R)-25-5

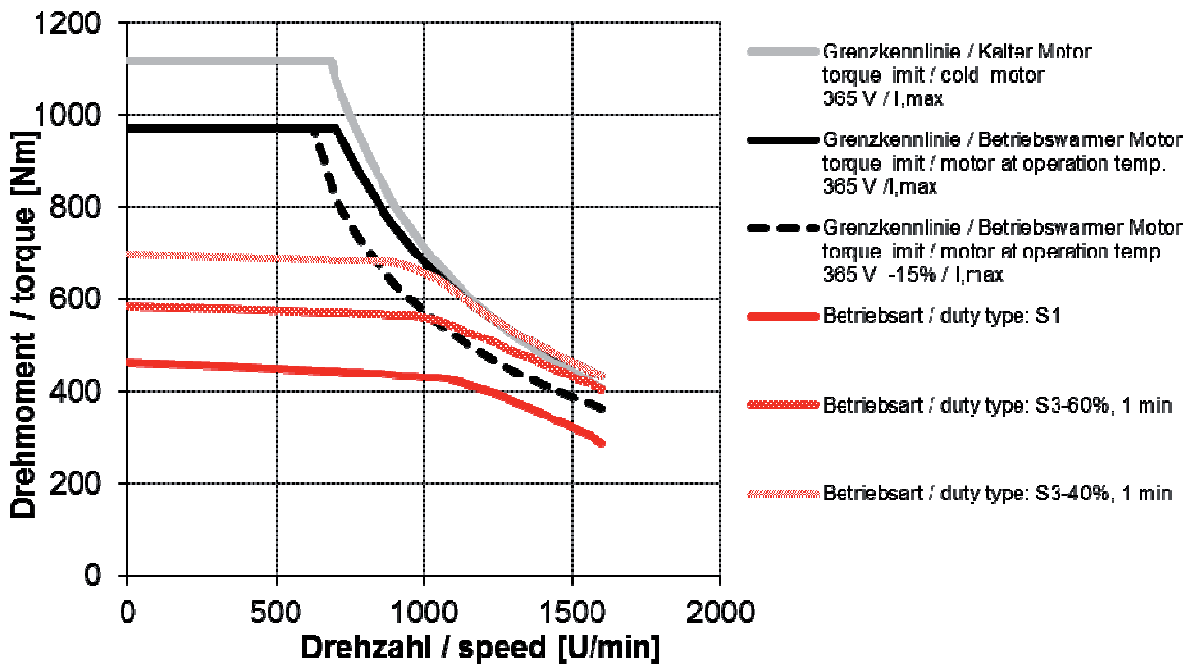




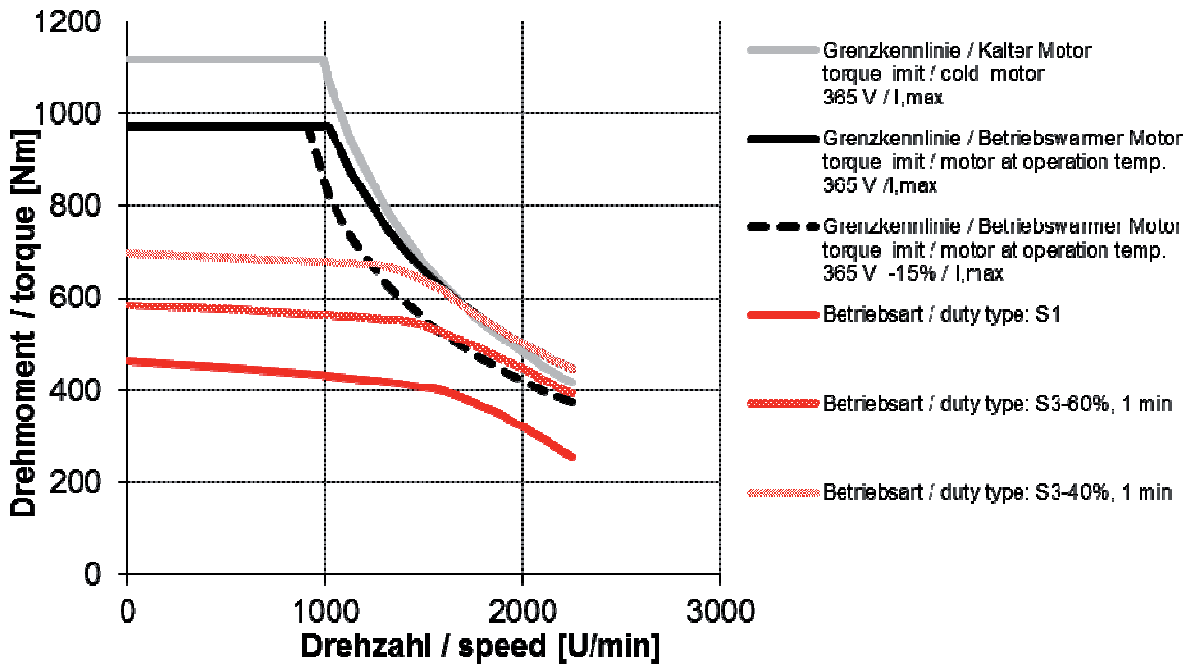
DSD2-132XO54A(R)-30-5



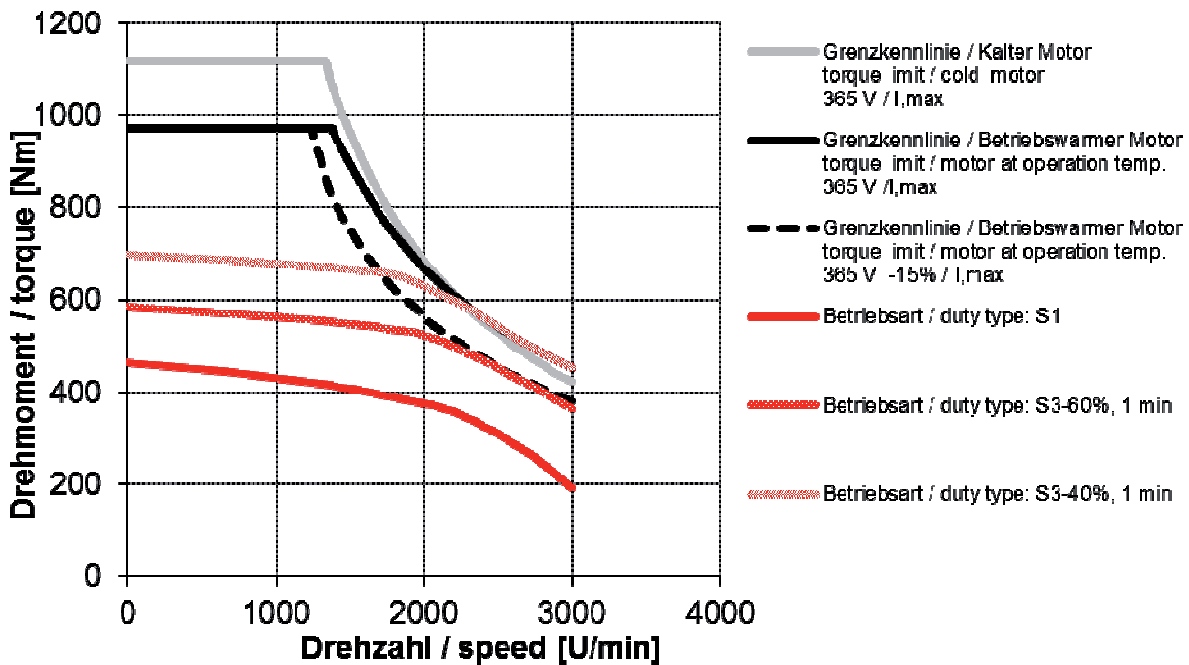
DSD2-132YO54A(R)-10-5



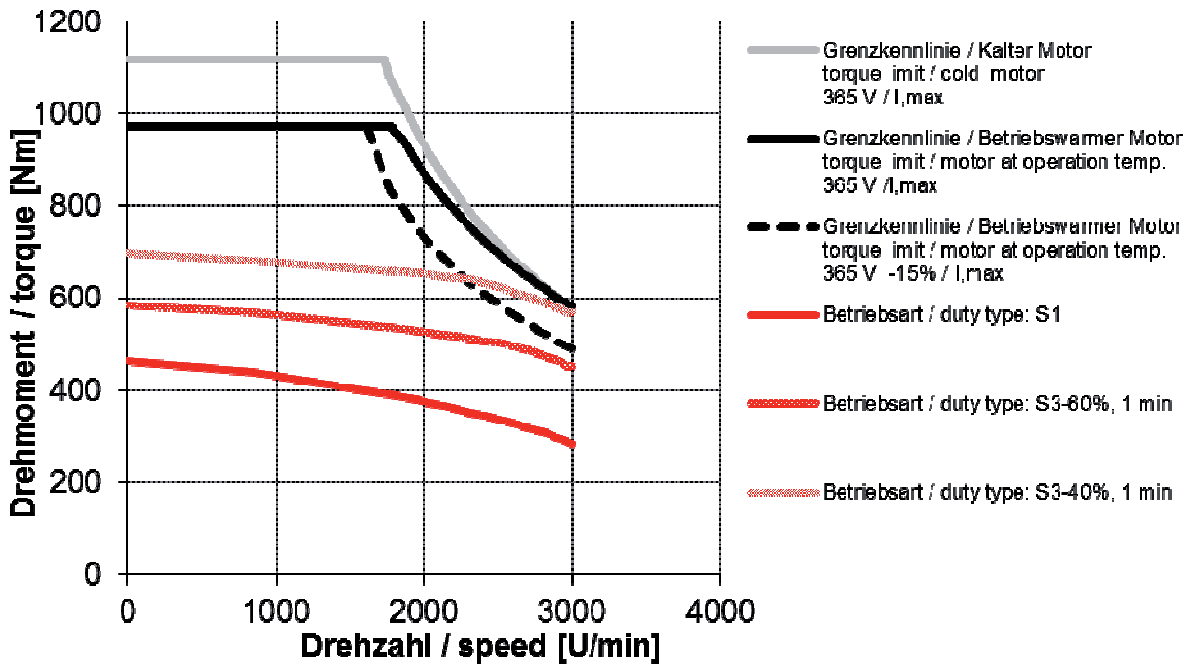
DSD2-132YO54A(R)-15-5



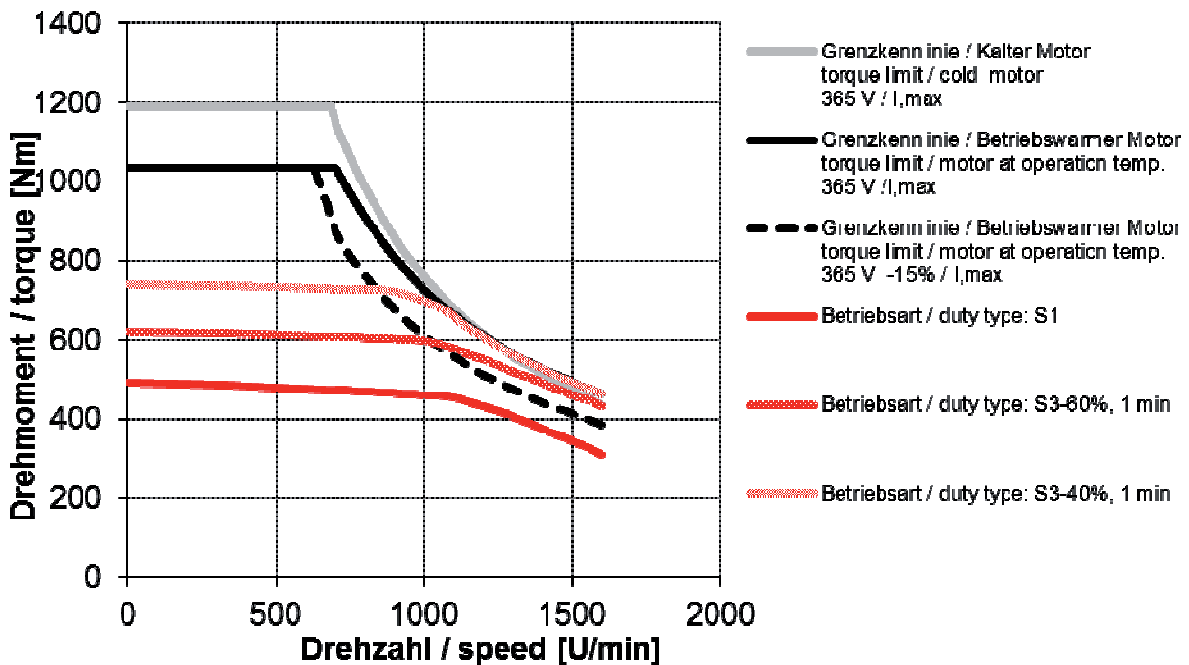
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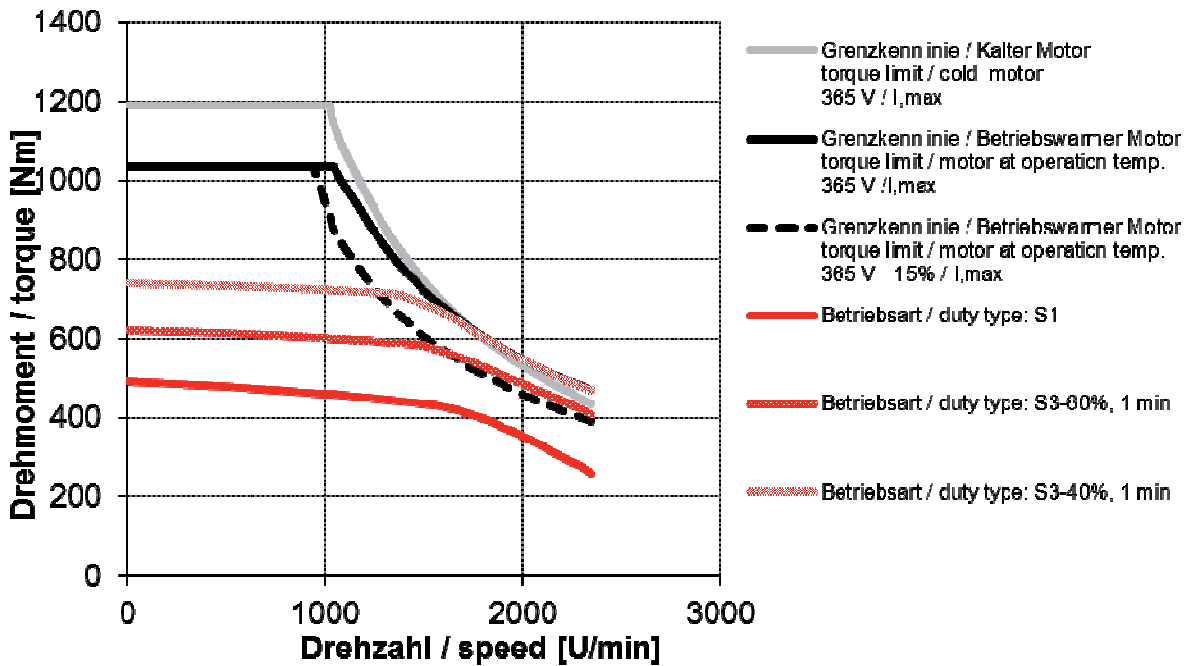
DSD2-132YO54A(R)-25-5



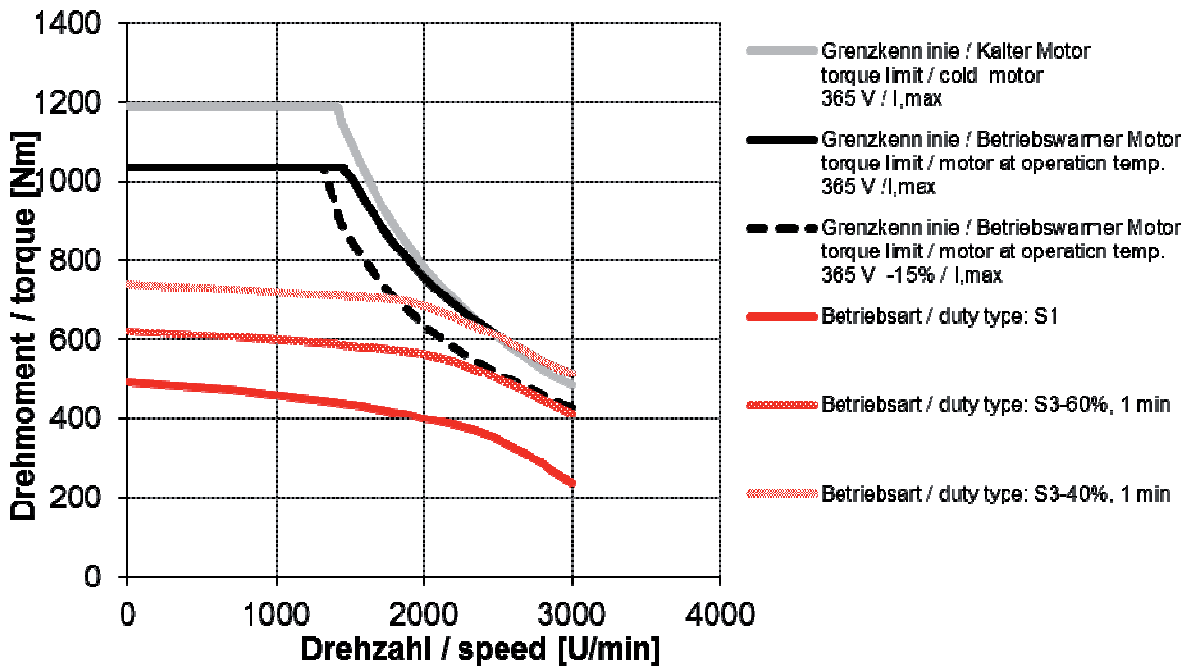
DSD2-132YZ54A(R)-10-5



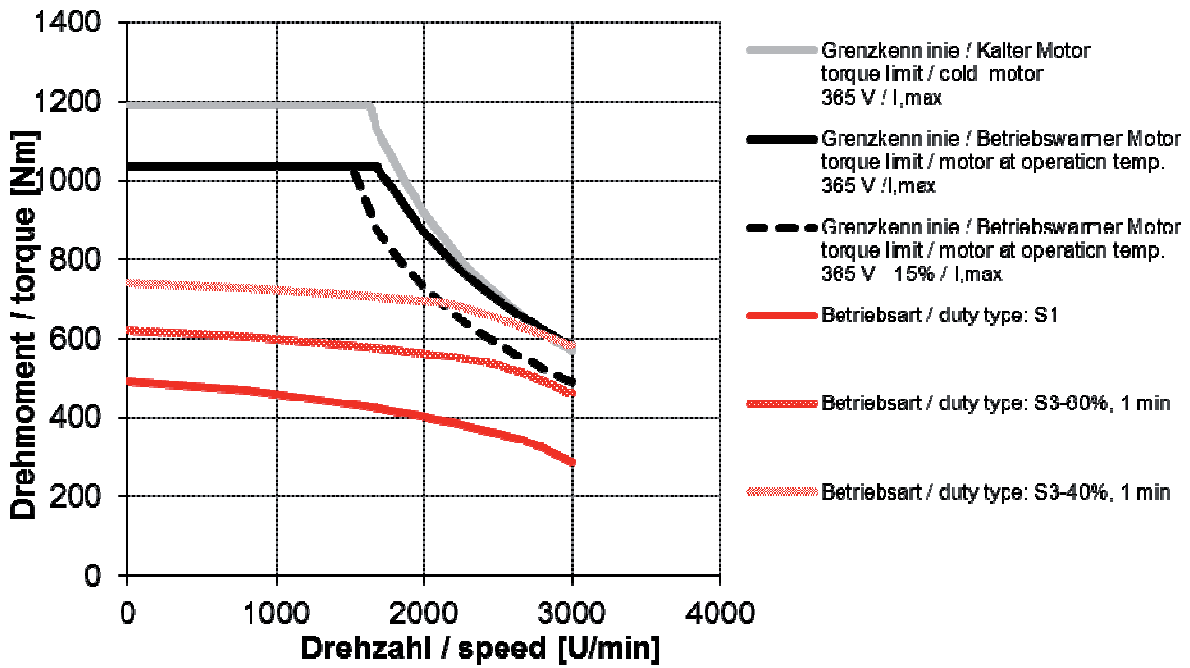
DSD2-132YZ54A(R)-15-5



DSD2-132YZ54A(R)-20-5

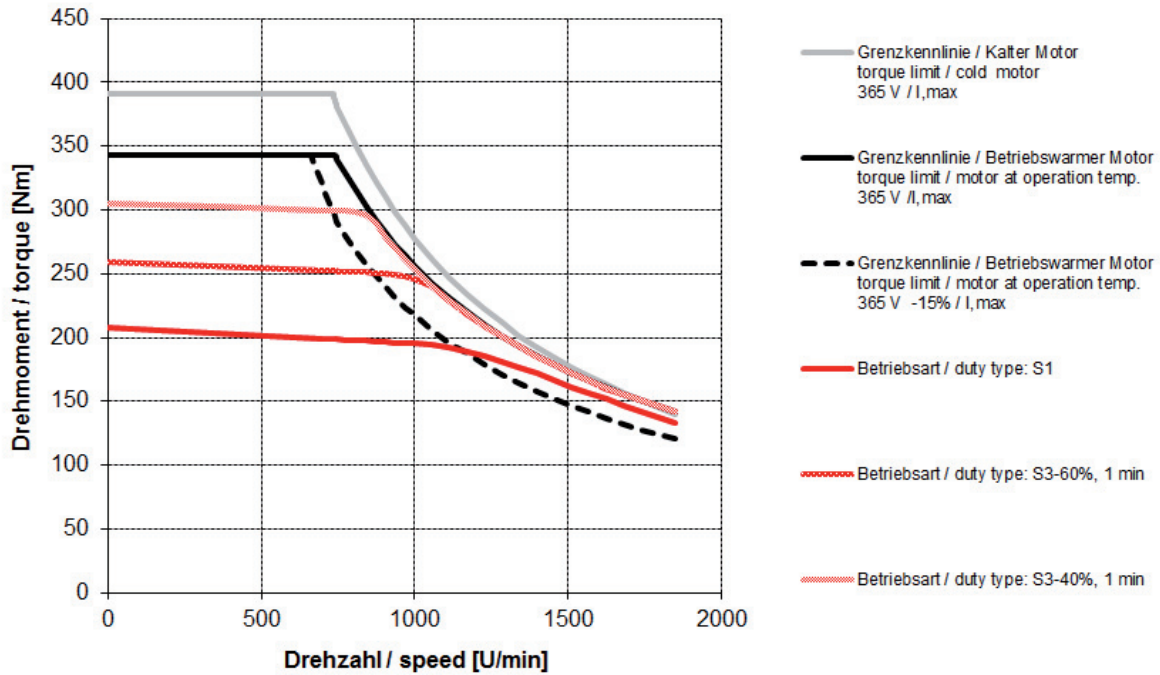


DSD2-132YZ54A(R)-25-5

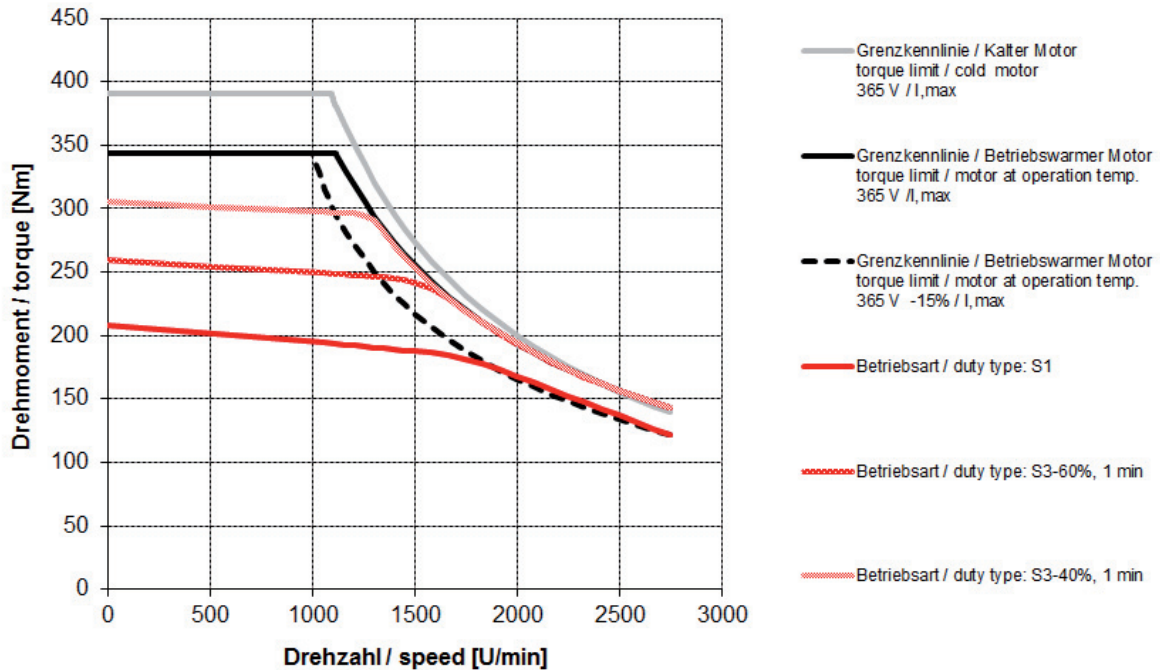


5.7.2. DSD2-132..54W-.. (IP54 water cooled)

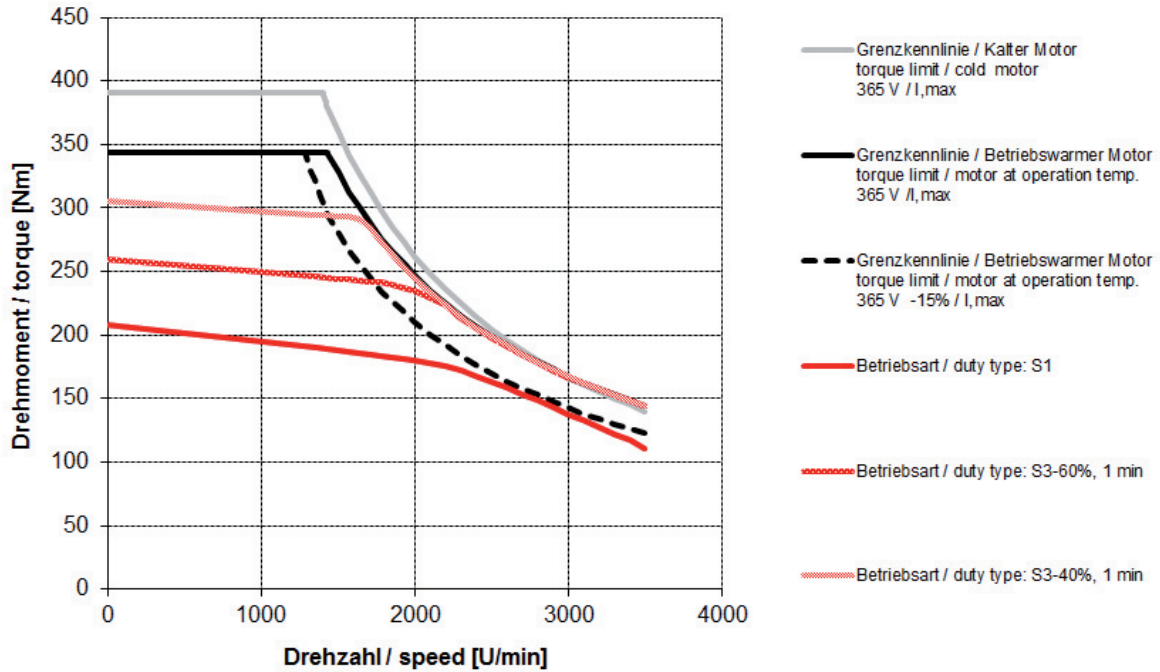
DSD2-132KO54W-10-54



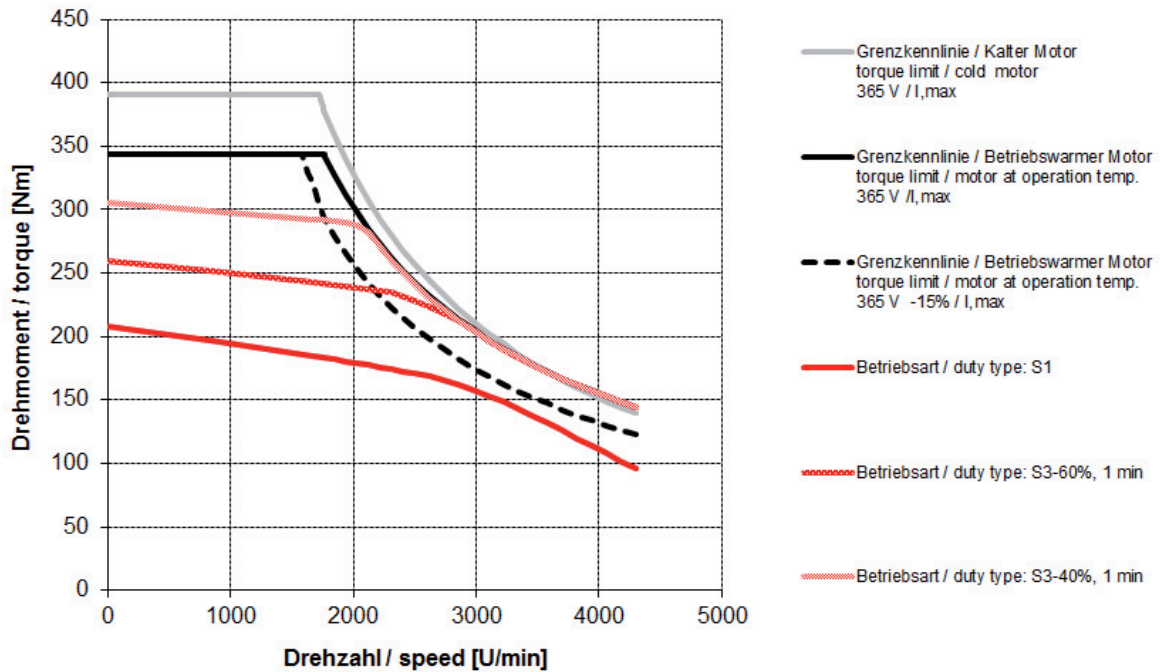
DSD2-132KO54W-15-54



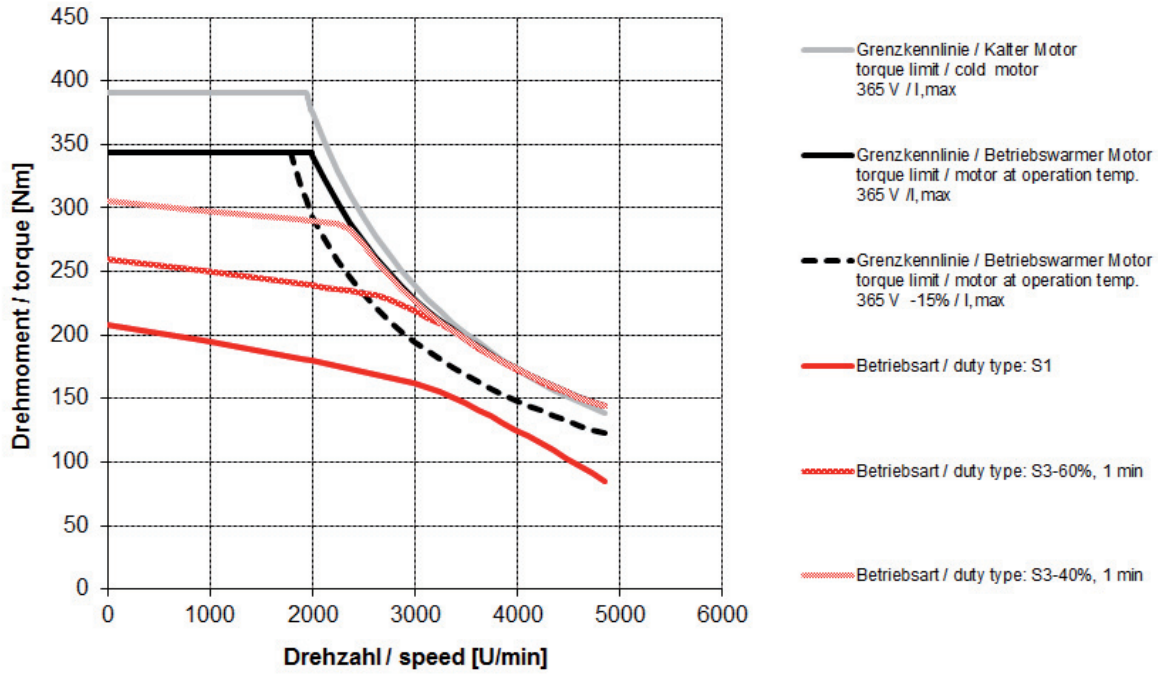
DSD2-132KO54W-20-54



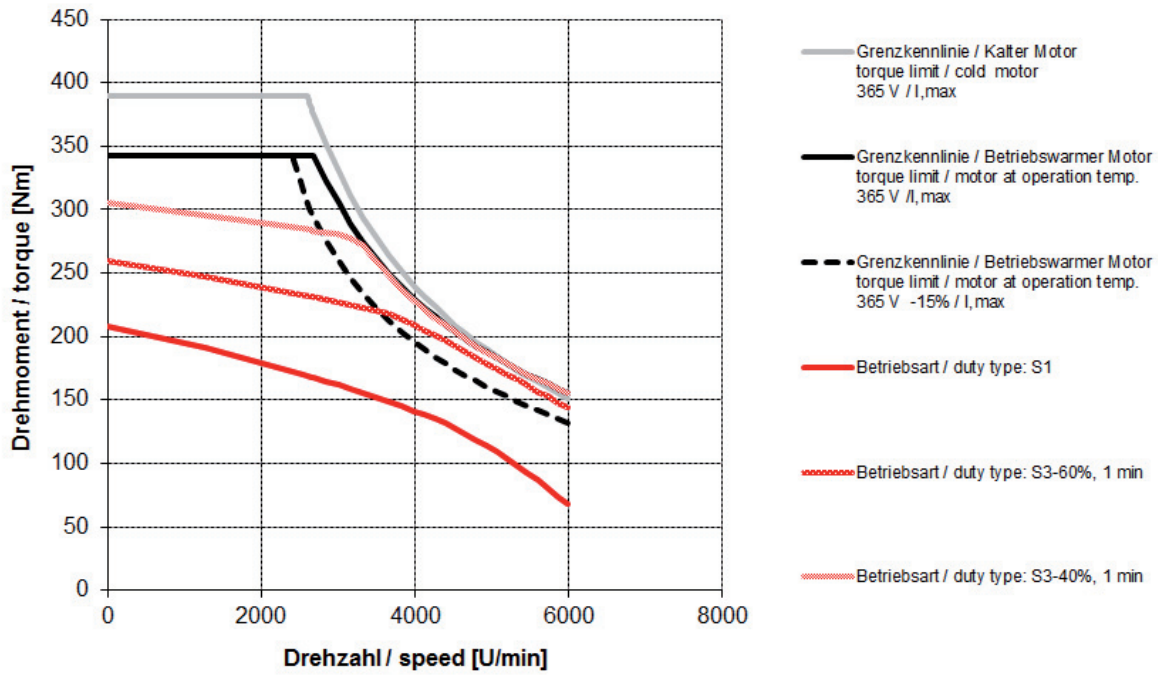
DSD2-132KO54W-25-54



DSD2-132KO54W-30-54

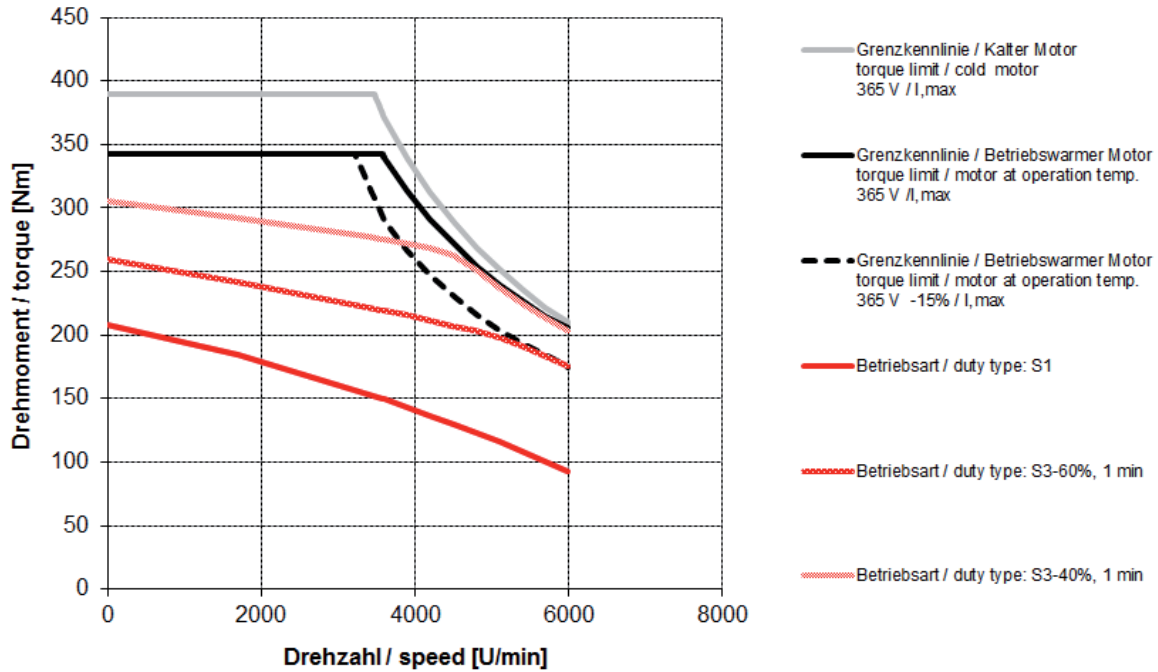


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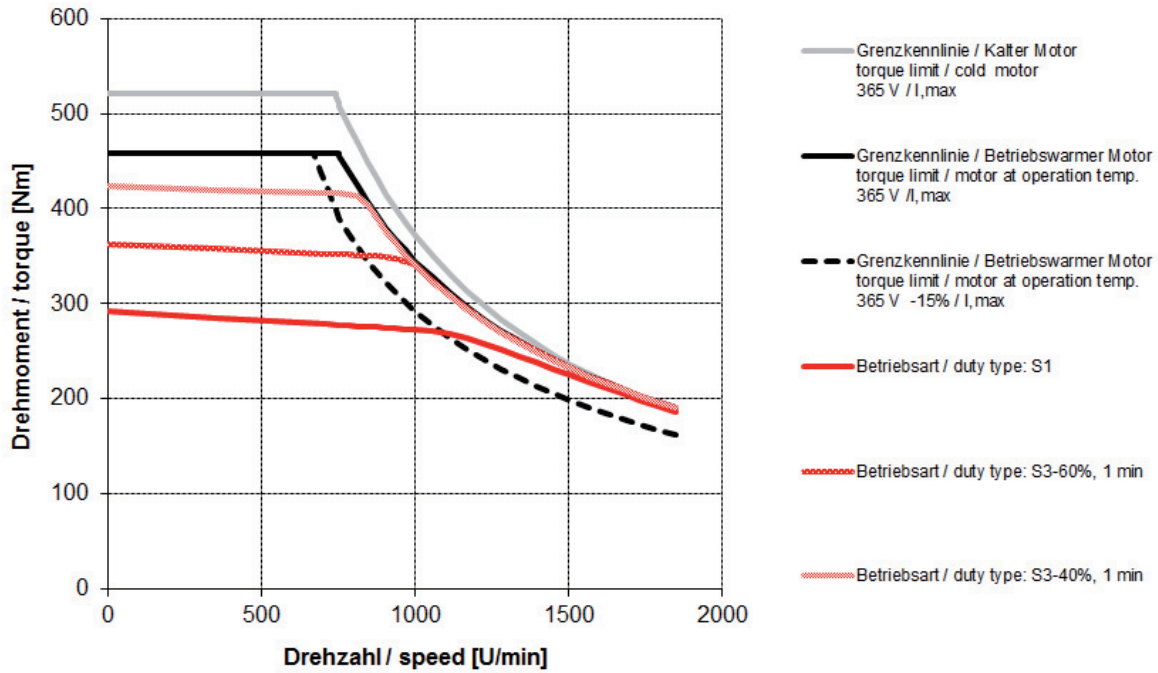




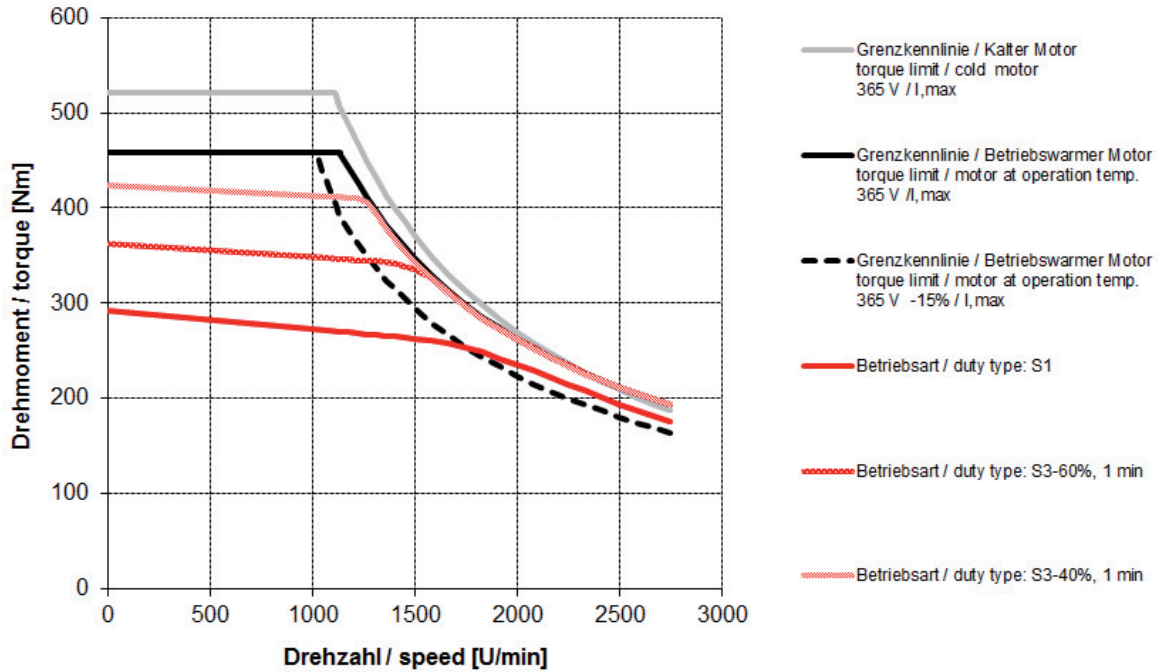
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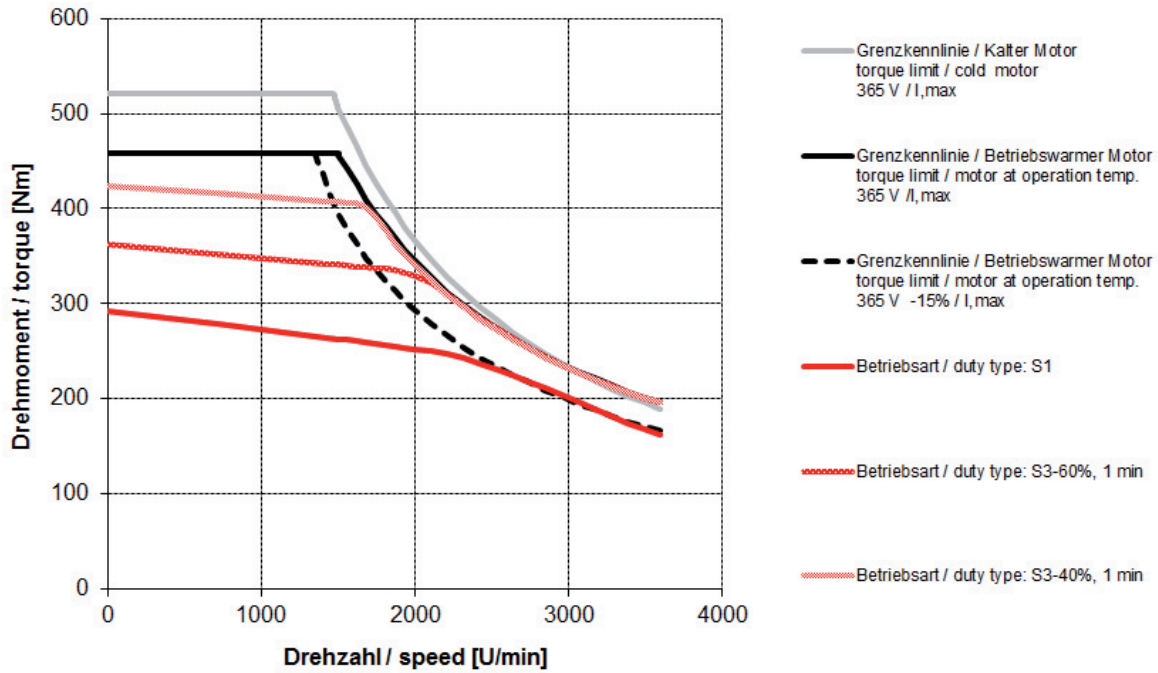
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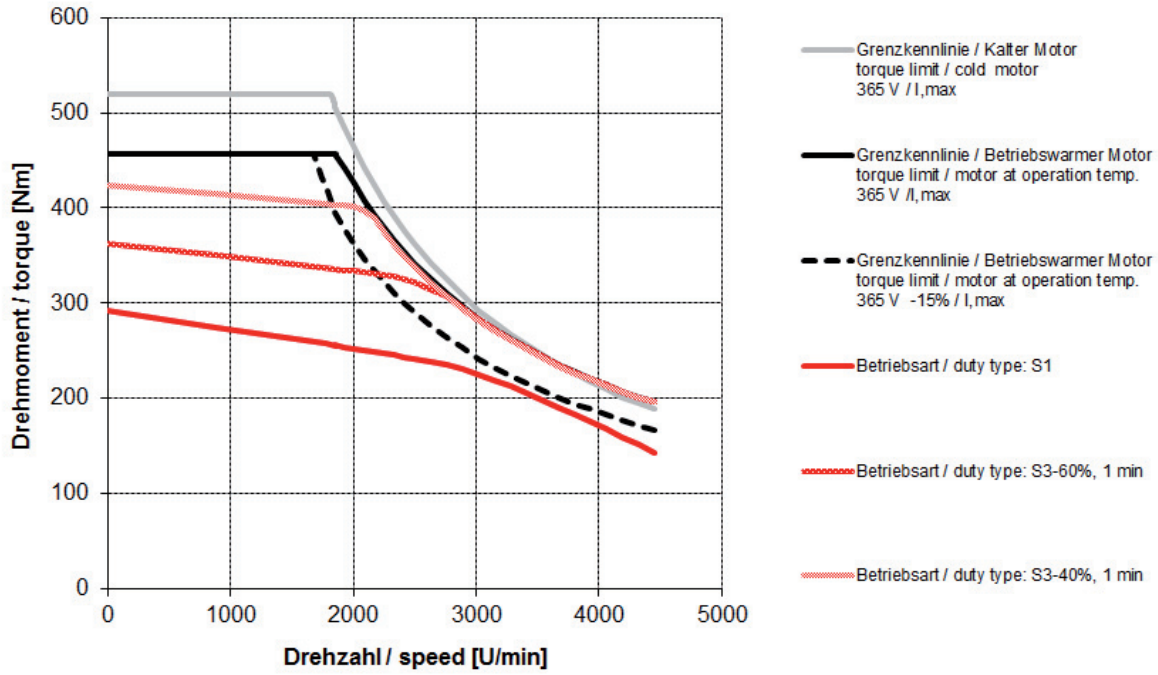
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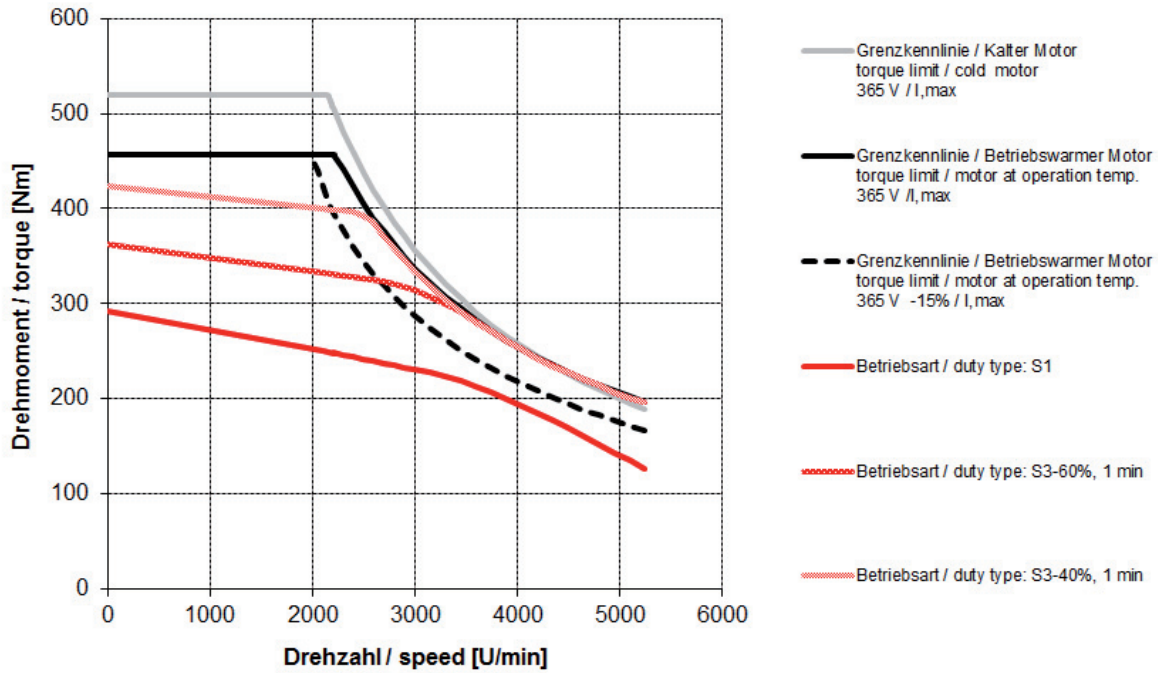
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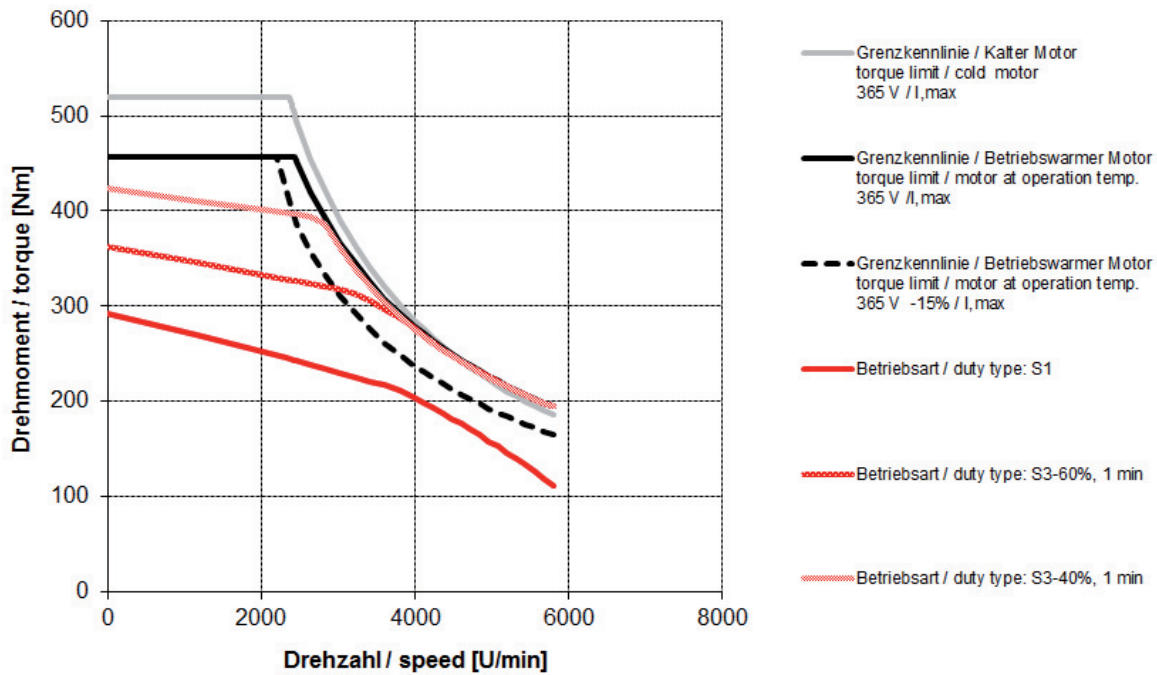
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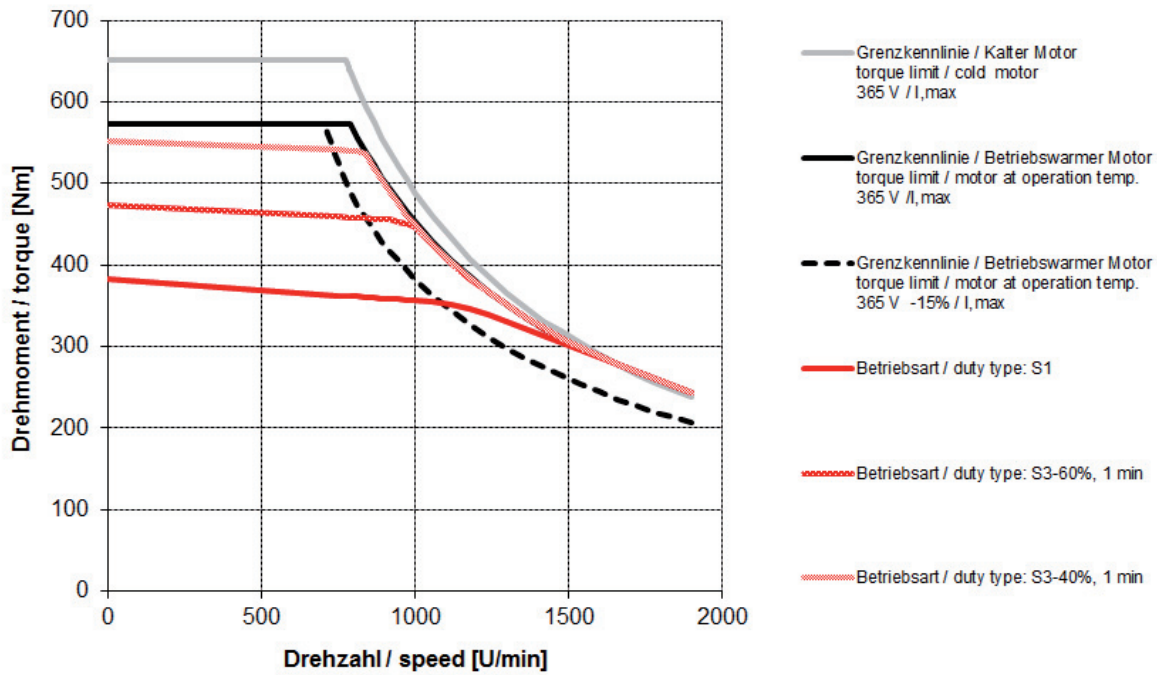
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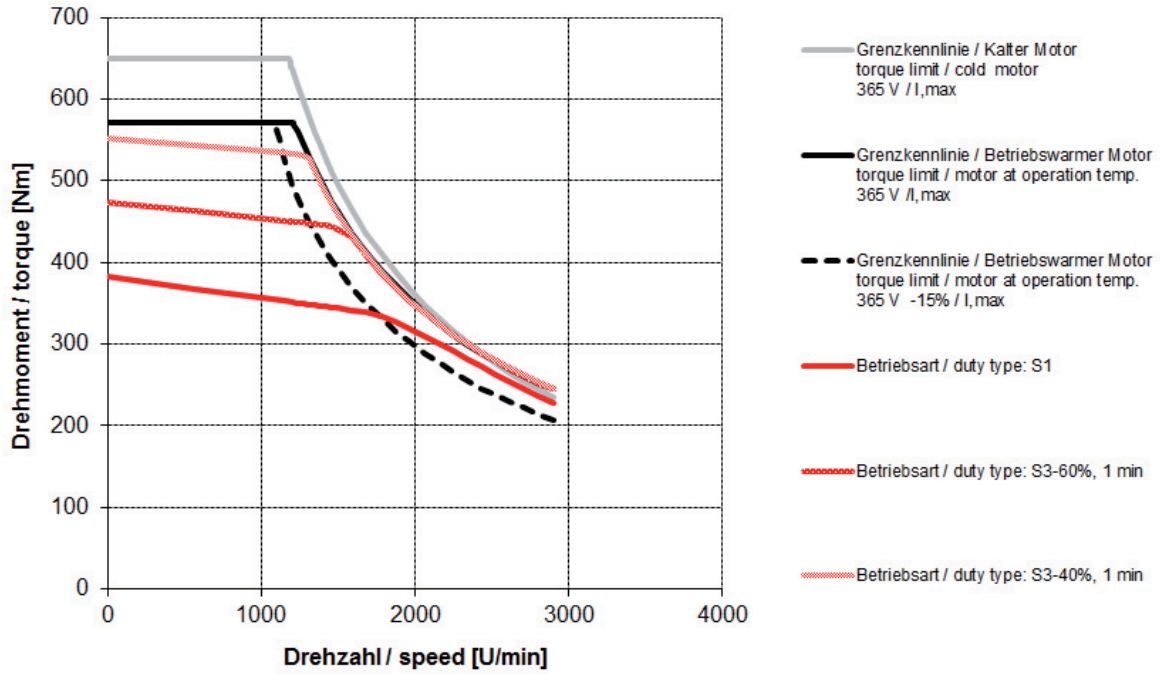
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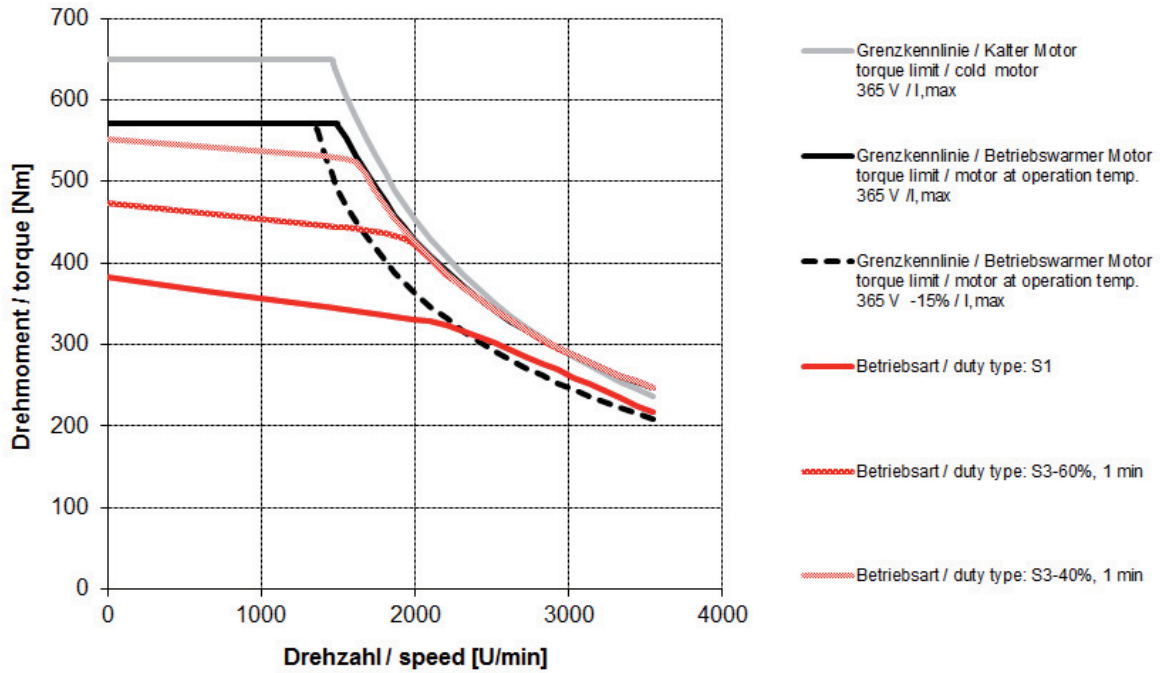
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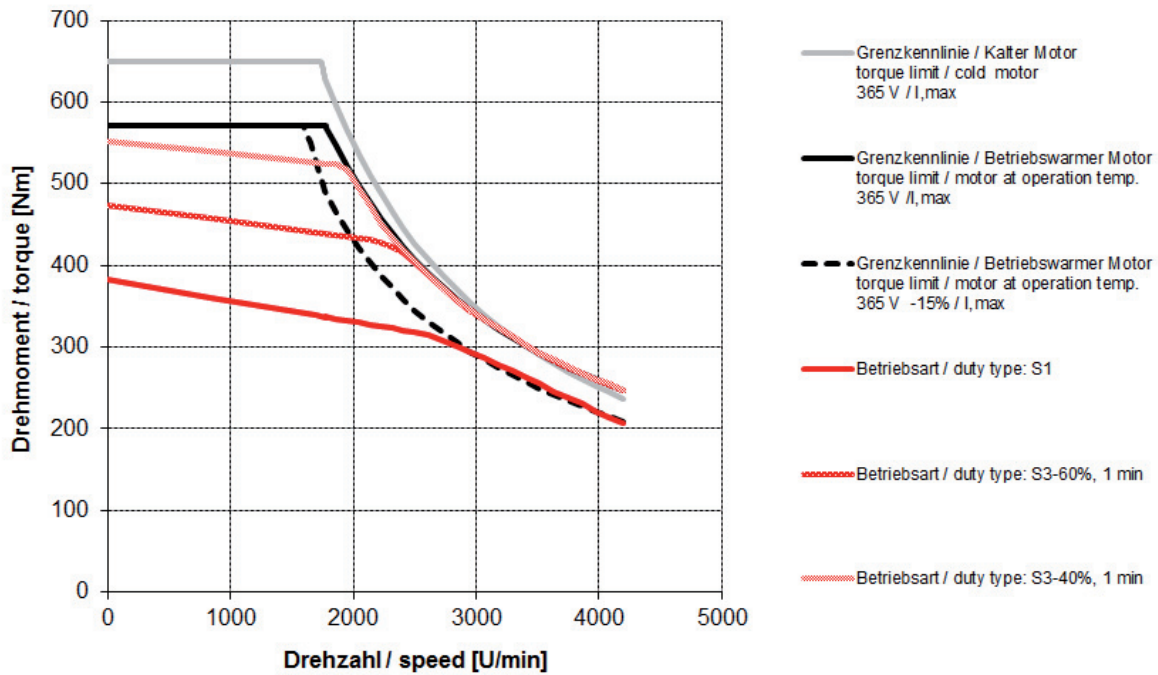
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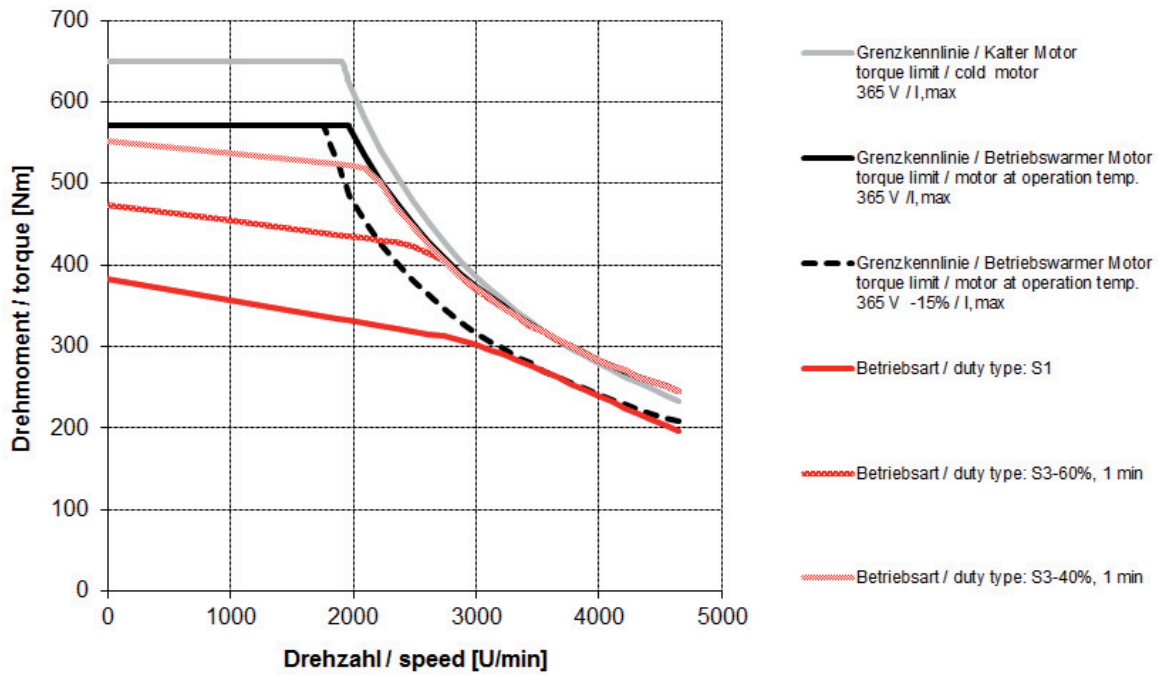
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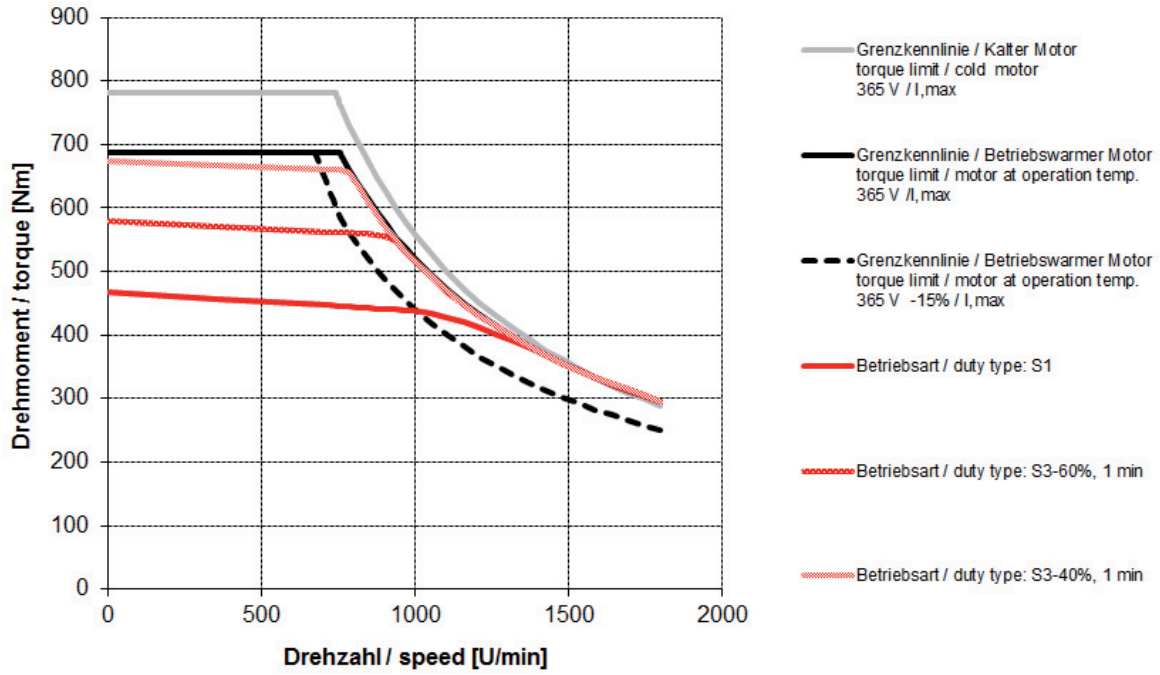
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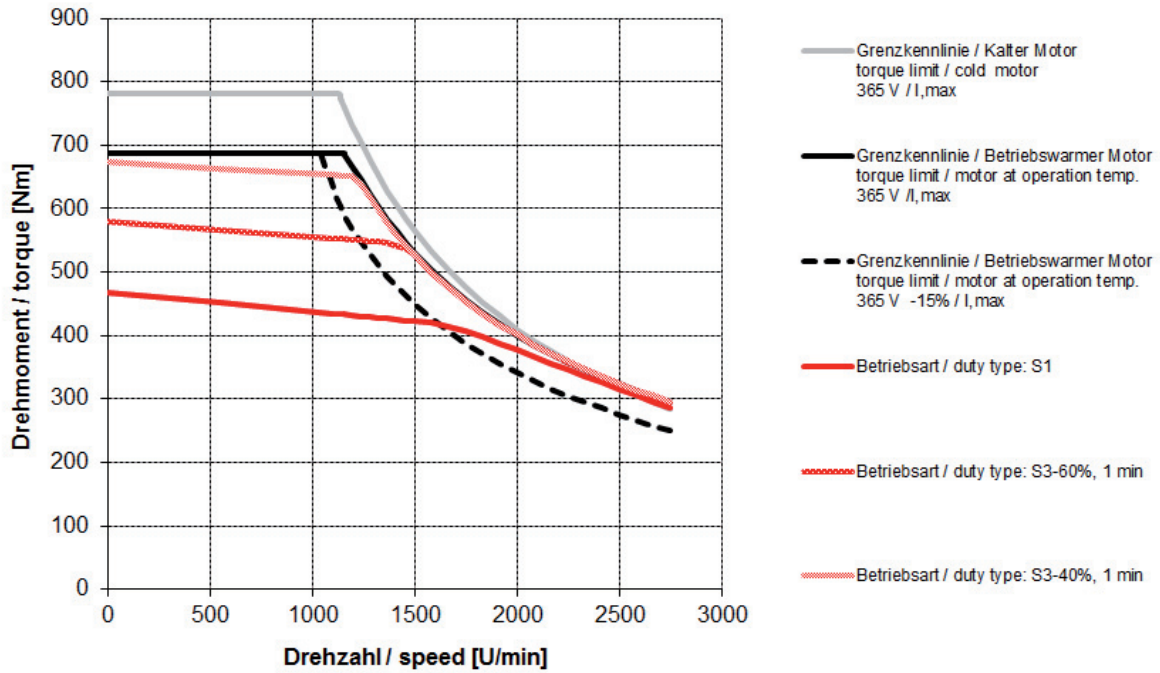
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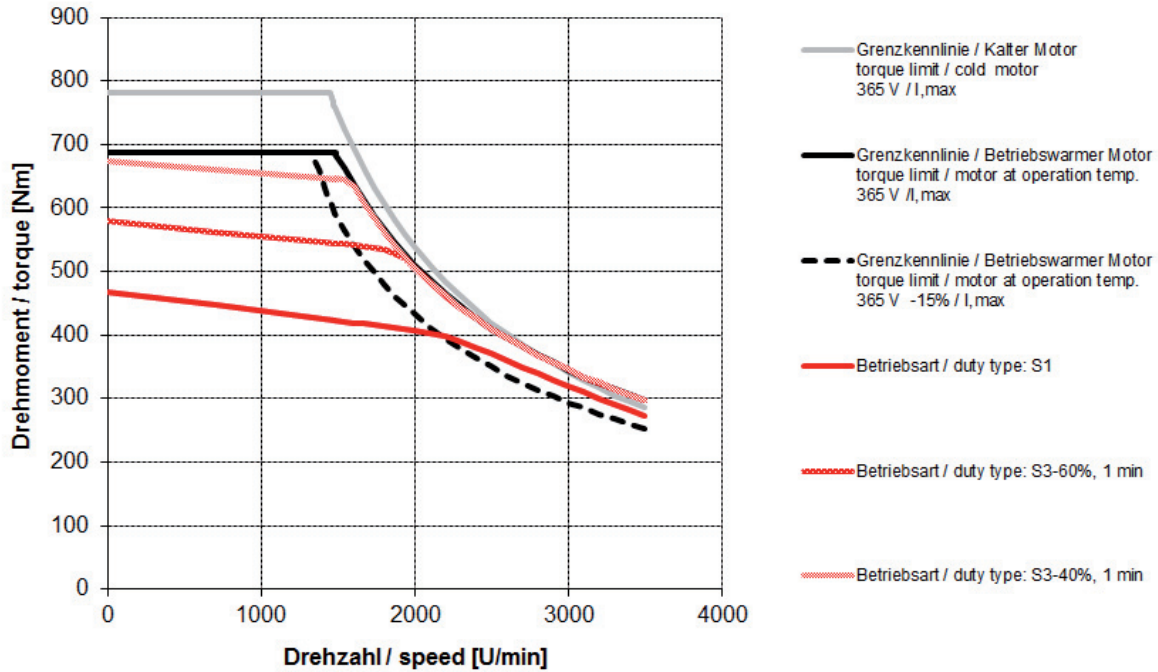
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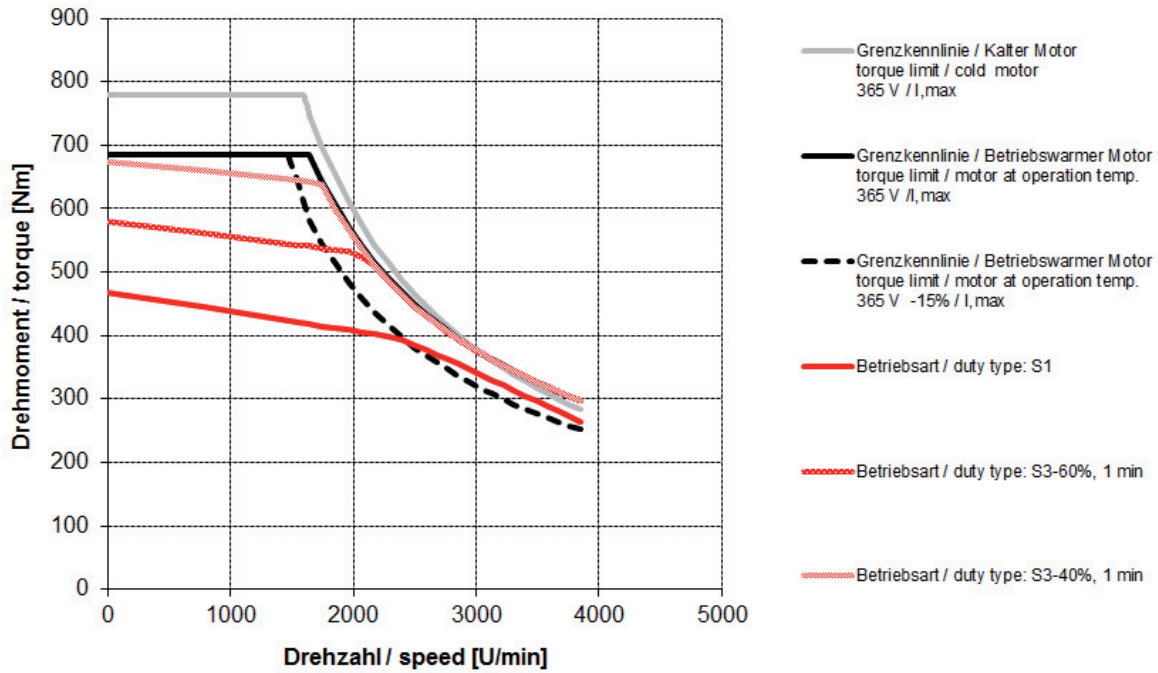
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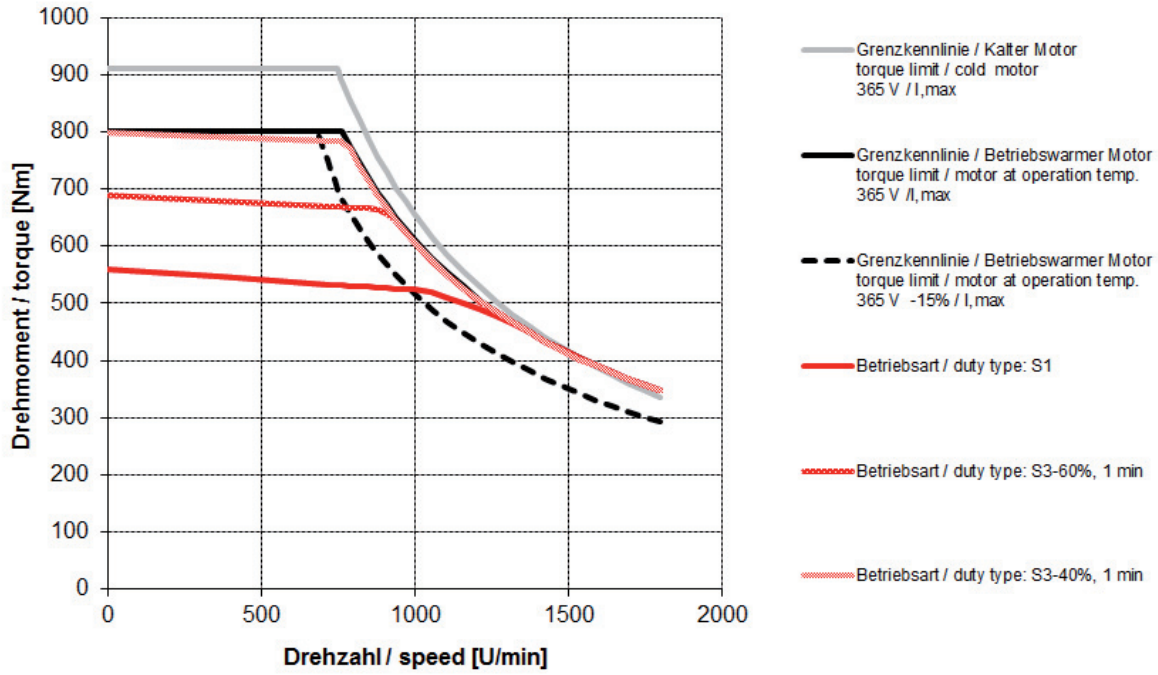


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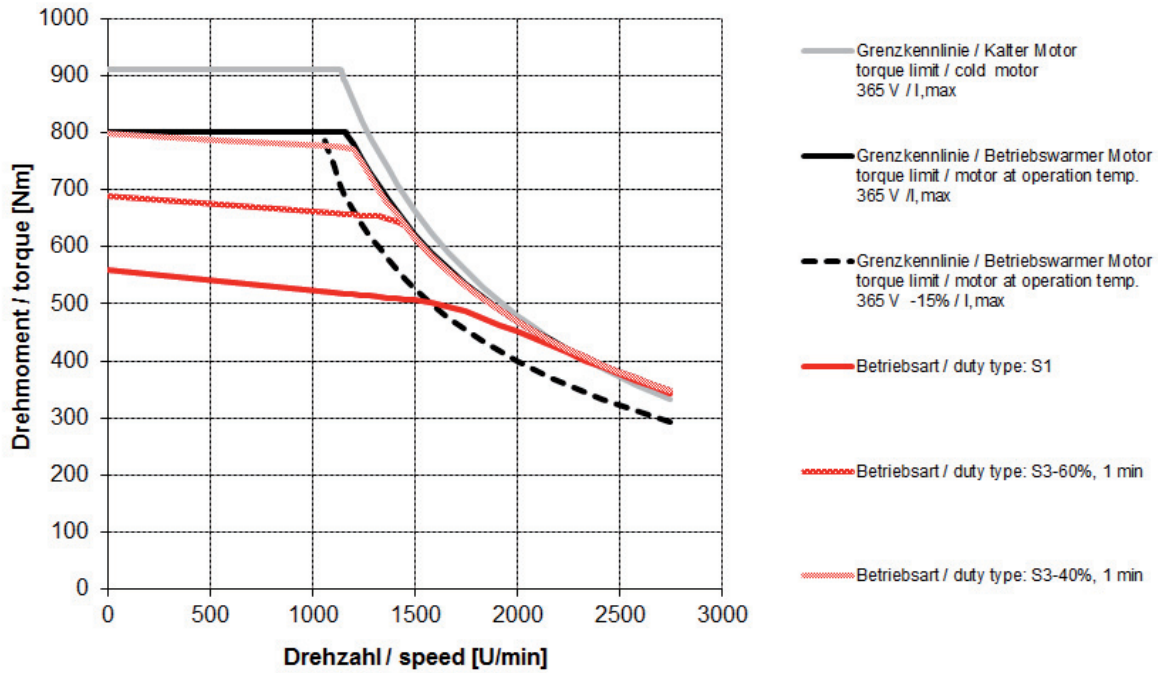




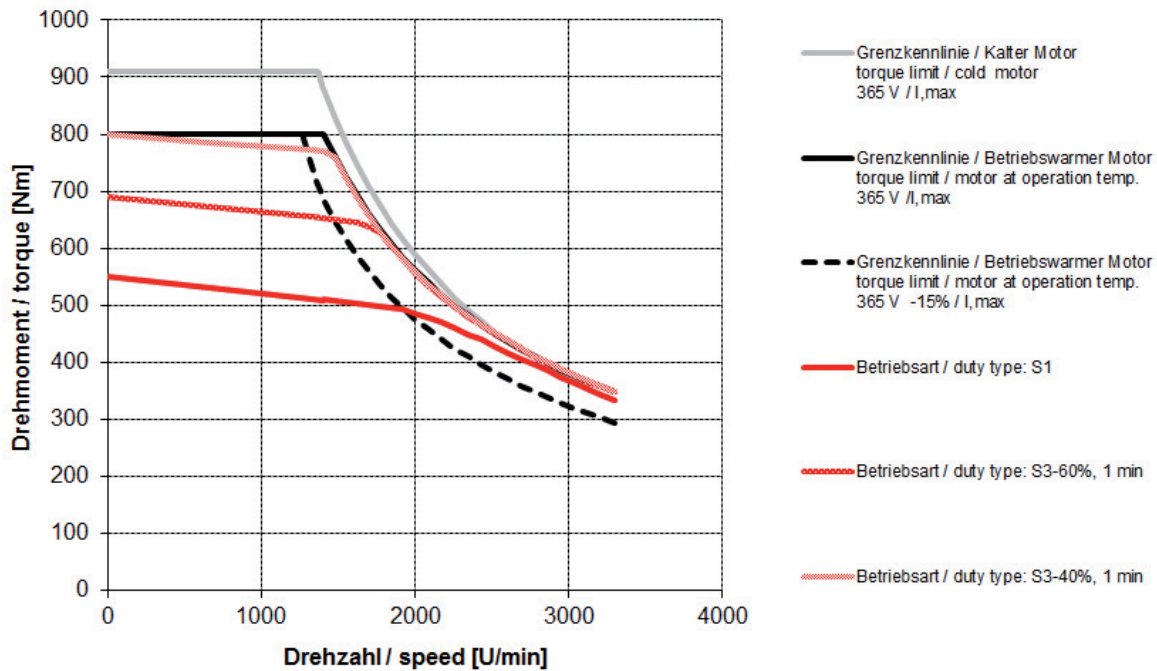
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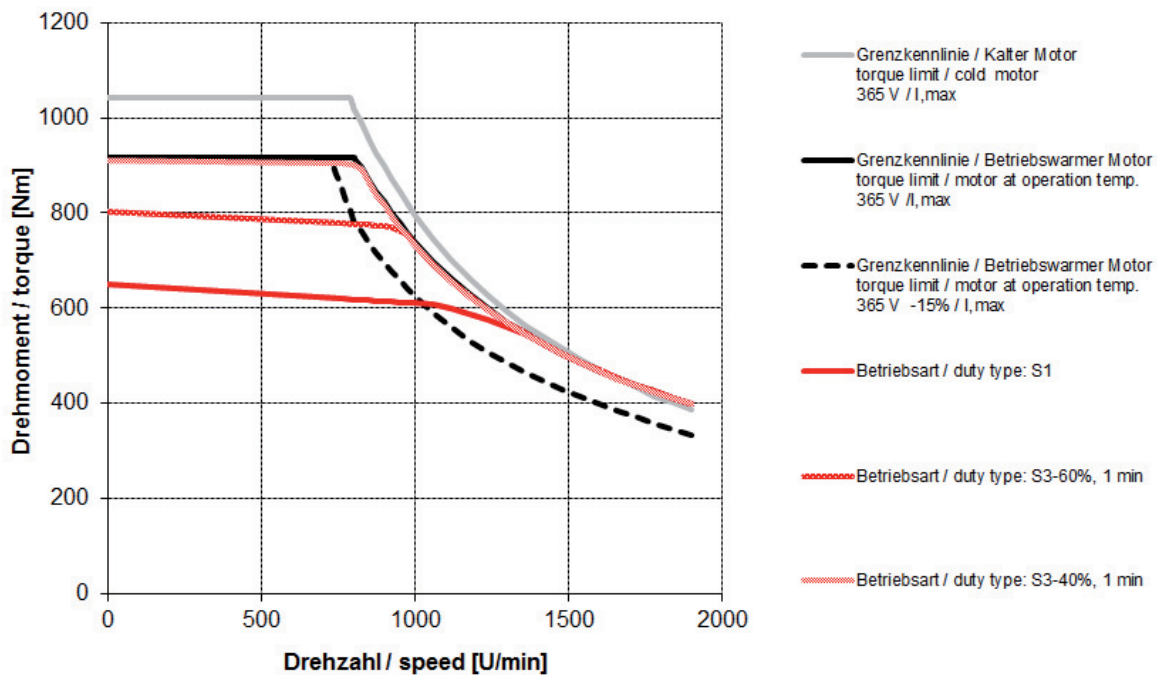
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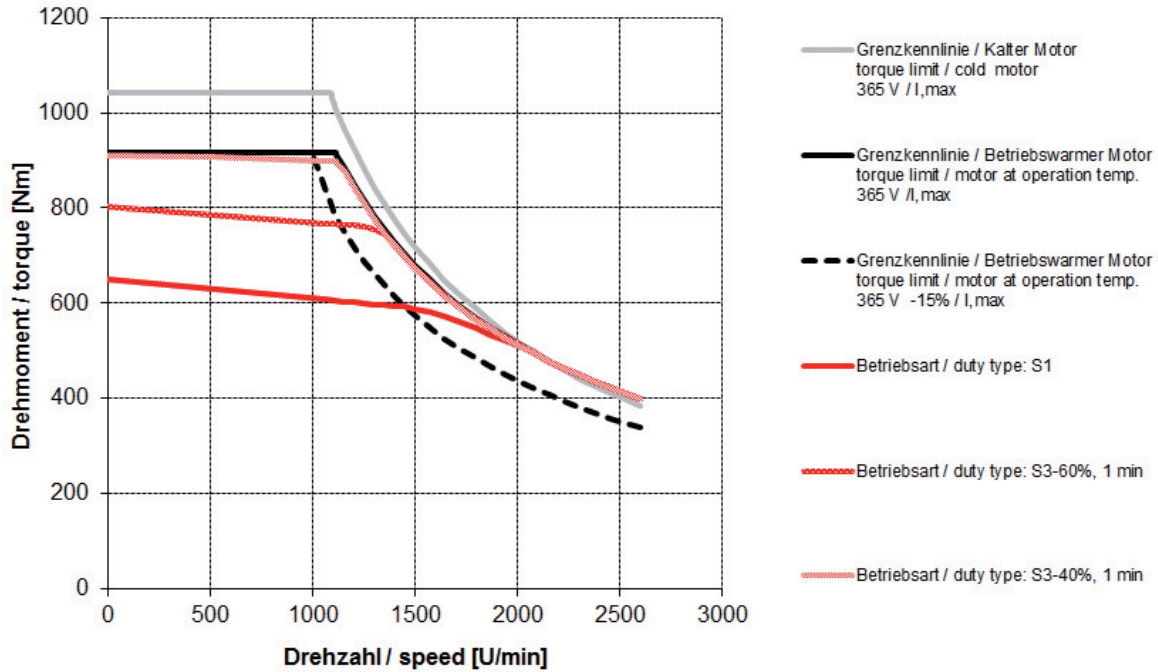
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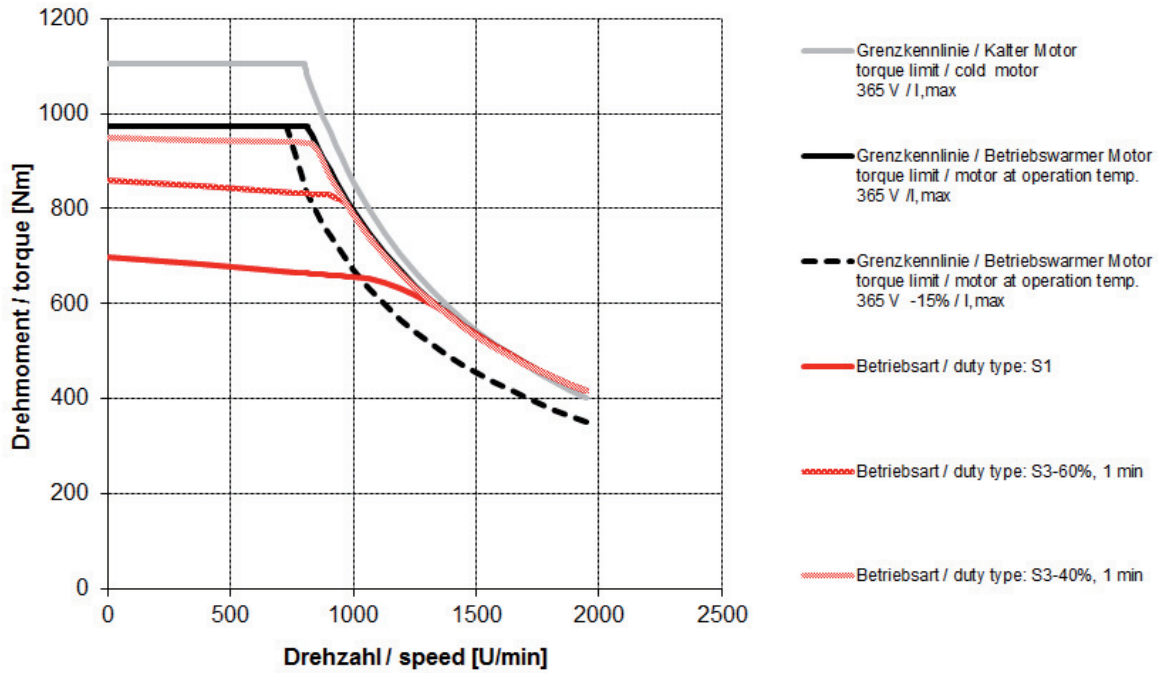
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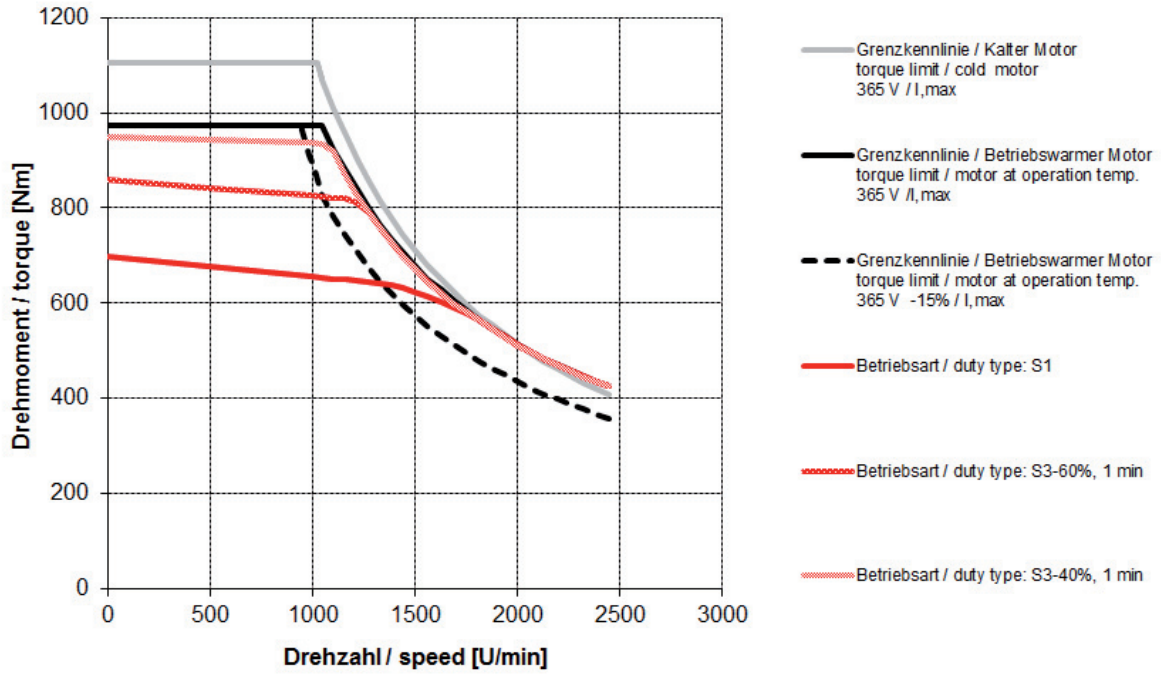
DSD2-132YO54W-15-54



DSD2-132YZ54W-10-54



DSD2-132YZ54W-15-54



## 6. Commissioning and maintenance instructions

For information on commissioning the motors, please request a copy of our commissioning and maintenance instructions.

Motor	Commissioning and maintenance instructions
DSD2-028...036	No. 30025
DSD2-045...100	No. 699

The integration of size 132 is underway.

## 7. Declaration of Conformity

This chapter contains general information on EC Directives, the CE marking and the Declaration of Conformity.

### 7.1. What is an EC Directive?

EC Directives stipulate specific requirements. The Directives are compiled by the corresponding organisations within the EU and transposed by all EU member states into national law to guarantee free trade within the European Union.

An EC Directive only outlines basic minimum requirements. More detailed requirements are included in standards to which the Directive makes direct reference.

### 7.2. What does the CE marking signify?

*a) The CE marking symbolises conformity to all the obligations incumbent on manufacturers for the product by virtue of the Community Directives providing for its affixing.*

*b) The CE marking affixed to industrial products symbolises the fact that the natural or legal person having affixed or been responsible for affixing the said marking has verified that the product conforms to all Community provisions for total harmonisation which apply to it and has been the subject of the appropriate conformity evaluation procedures.*

*Council Decision 93/465/EEC, appendix I B. a) + c)*

We affix the CE marking to the device and include it in the documentation as soon as we have established that the product fulfils the requirements outlined in the relevant Directives.

If this Baumüller product is used in your machine as specified, you can assume that the product satisfies the requirements stipulated in 2006/95/EC.

Correct installation is a decisive factor in ensuring that this product complies with 89/336/EEC (EMC Directive). Since you are installing the product yourself, you are also responsible for ensuring compliance with 89/336/EEC.

We will provide you with assistance in the form of EMC information, which can be found in the corresponding technical instructions. Once you have satisfied all the requirements outlined in this documentation and the technical instructions, you can assume (or "suppose") that the product meets all the requirements stipulated in the EMC Directive.

Please remember to observe all binding national, local and system-specific regulations as well.

In order for you to operate your machine within the EU, the following must be available:

- Mark of conformity (CE symbol)
- Declaration(s) of Conformity relating to the relevant Directive(s) for the machine

### **7.3. Definition of terms in the Declaration of Conformity**

A Declaration of Conformity based on this documentation is a declaration that the electrical equipment brought into circulation meets all the basic health and safety regulations that currently apply.

By including the Declaration of Conformity in this chapter, Baumüller Nürnberg GmbH declares that the product complies with all the relevant basic health and safety regulations from the Directives and standards listed in the Declaration of Conformity.

## 7.4. EG-Declaration of Conformity



### EU-Konformitätserklärung

gemäß

- Richtlinie 2014/35/EU  
(Niederspannungsrichtlinie)

Richtlinie 2014/30/EU  
(EMV-Richtlinie)  
ausschließlich mit Geber, wenn im Motor integriert

#### Hersteller

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Hiermit erklären wir, dass die nachfolgend genannten Produkte aufgrund ihrer Konzeption, Konstruktion und Bauart in der von uns in Verkehr gebrachten Ausführung den Anforderungen der oben genannten Richtlinien einschließlich der zum Zeitpunkt der Erklärung geltenden Änderungen entsprechen.

#### Hinweise:

1. Bei Umbau oder Änderungen am Produkt verliert diese Erklärung mit sofortiger Wirkung ihre Gültigkeit.
2. Diese Erklärung bescheinigt die Übereinstimmung mit der genannten Richtlinie, stellt aber keine Zusicherung von darüber hinaus gehenden Produkteigenschaften dar.
3. Die alleinige Verantwortung für die Erstellung der Konformitätserklärung trägt der Hersteller.

#### Angewandte harmonisierte Normen:

- DIN EN 60034-1:2010  
Drehende elektrische Maschinen – Teil 1:  
Bemessung und Betriebsverhalten
- DIN EN 60034-5:2007-09  
Drehende elektrische Maschinen – Teil 5:  
Schutzarten aufgrund der Gesamtkonstruktion von  
drehenden elektrischen Maschinen (IP-Code) – Einteilung
- DIN EN 60034-6:1996-08  
Drehende elektrische Maschinen – Teil 6:  
Einteilung der Kühlverfahren (IC-Code)



### EU-Declaration of Conformity

according

- Directive 2014/35/EU  
(Low-voltage-directive)

Directive 2014/30/EU  
(EMC-directive)  
only if there is a electronic feedback-device  
integrated in the motor

#### Manufacturer

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We declare, that the products referred to in the following conform in their concept, construction and design as lauched by us to the above mentioned directives and their respective changes which were valid at the point of declaration.

#### Notes:

1. By modifying or alternating the device(s) this declaration immediately becomes invalid.
2. This declaration confirms the compliance with the directive listed, but it is no covenant of any further product properties.
3. Only the manufacturer is responsible for the declaration of conformity.

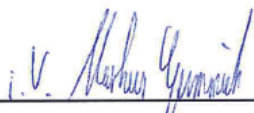
#### Applied harmonised standards:


- DIN EN 60034-1:2010  
Rotating electrical machines – Part 1:  
Rating and performance
- DIN EN 60034-5:2007-09  
Rotating electrical machines – Part 5:  
Degree of protection provided by the integral design of  
rotating electrical machines (IP-Code) – Classification
- DIN EN 60034-6:1996-08  
Rotating electrical machines – Part 6:  
Methods of cooling (IC-Code)

- DIN EN 60034-9:2008-01  
Drehende elektrische Maschinen – Teil 9:  
Geräuschgrenzwerte
  - DIN EN 60034-14:2008-03  
Drehende elektrische Maschinen – Teil 14:  
Mechanische Schwingungen von bestimmten Maschinen  
mit einer Achshöhe von 56 mm und höher – Messung,  
Bewertung und Grenzwerte der Schwingstärke
  - DIN EN 61800-5-1:2015  
Elektrische Leistungsantriebssysteme mit einstellbarer  
Drehzahl – Teil 5-1:  
Anforderungen an die Sicherheit – Elektrische, thermische  
und energetische Anforderungen
  - EN 60204-1:2006+A1:2009  
Sicherheit von Maschinen - Elektrische Ausrüstung von  
Maschinen - Teil 1:  
Allgemeine Anforderungen
- DIN EN 60034-9:2008-01  
Rotating electrical machines – Part 9:  
Noise limits
  - DIN EN 60034-14:2008-03  
Rotating electrical machines – Part 14:  
Mechanical vibration of certain machines with shaft  
heights 56 mm and higher – Measurement, evaluation  
and limits of vibration severity
  - DIN EN 61800-5-1:2015-  
Adjustable speed electrical power drive systems –  
Part 5-1:  
Safety requirements – Electrical, thermal and energy
  - EN 60204-1:2006+A1:2009  
Safety of machinery - Electrical equipment of  
machines - Part 1:  
General requirements

Produkt / Product <small>(x): optionaler Buchstabe / optional character {x, y}: alternative Buchstaben oder Zahlen / alternative characters</small>	Jahr der erstmaligen CE-Kennzeichnung / Year of first CE marking
DSD2-045XXXXX-XX-XX-XXX-XXX-X-XX-X-XXX	2011
DSD2-056XXXXX-XX-XX-XXX-XXX-X-XX-X-XXX	2011
DSD2-071XXXXX-XX-XX-XXX-XXX-X-XX-X-XXX	2011
DSD2-100XXXXX-XX-XX-XXX-XXX-X-XX-X-XXX	2011
DSD2-132XXXXX-XX-XX-XXX-XXX-X-XX-X-XXX	2015

Nürnberg, 10.05.2016

  
 \_\_\_\_\_  
 Leiter Entwicklung Motoren  
 Head of Motor Development

  
 \_\_\_\_\_  
 Bereichsleiter Motoren  
 Business Unit Manager Motors









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# be in motion

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