

## Technical data

### DC permanent magnet motors

#### Description

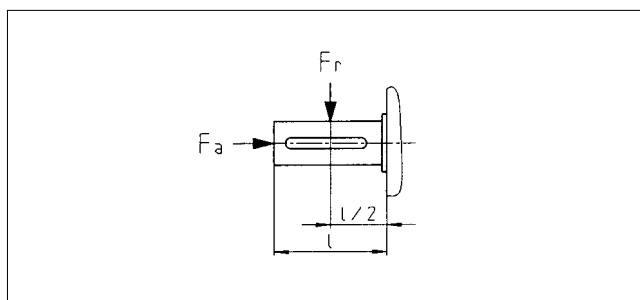
DC permanent magnet motors have a torque-speed characteristic with shunt characteristic. Thanks to a specific dimensioning of the armature winding (copper filling factor) there is only a low speed reduction under load. The magnetic flux which is necessary for the torque generation is produced by permanent magnets. A special field excitation winding and thus a consumer which would cause additional heat loss is not required. This means that the efficiency of a DC permanent magnet motor is better than the efficiency of a comparable field-wound DC motor. As permanent magnets are smaller than a comparable field winding, a DC permanent magnet motor is approx. one frame size smaller than a field-wound DC motor with the same rated power.



DC permanent magnet motor

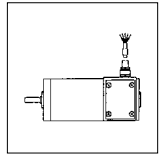
#### General data

Motor type	13.120
Enclosure	Series IP54 IP55 optional Option terminal box
Temperature class (VDE 0530)	F
Temperature monitoring	Thermal n.c. contact
Storage	Deep groove ball bearing
Temperature range	0 to +40 °C
Installation height	up to 1000 m a.m.s.l.
Motor connection	Cable series (except for motor type 13.120.35)
Operating mode (VDE 0530)	S1

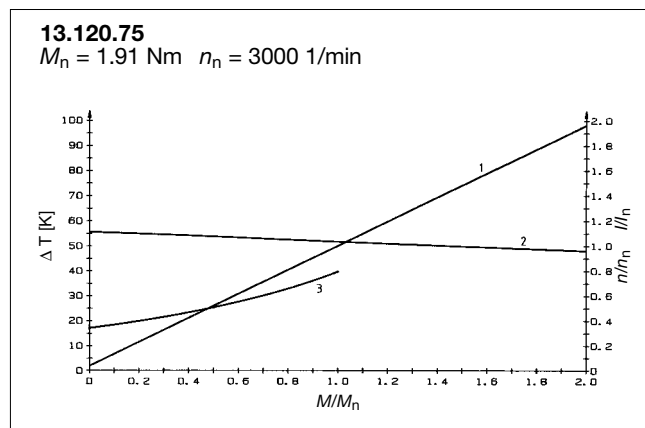
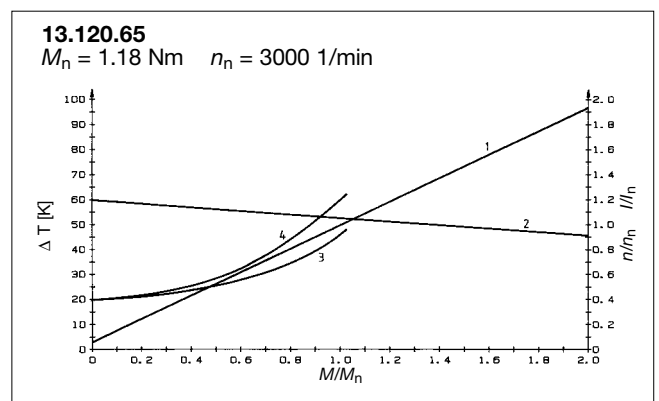
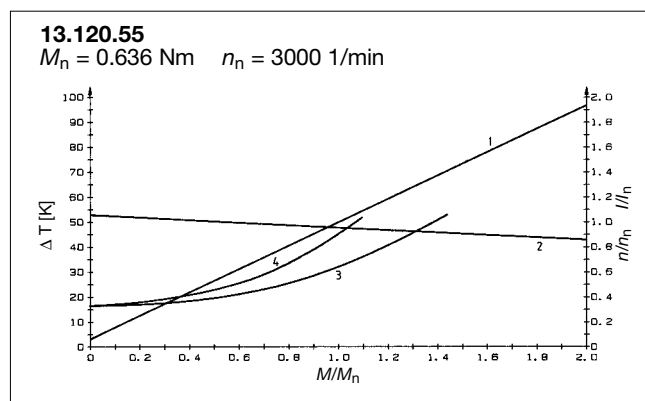
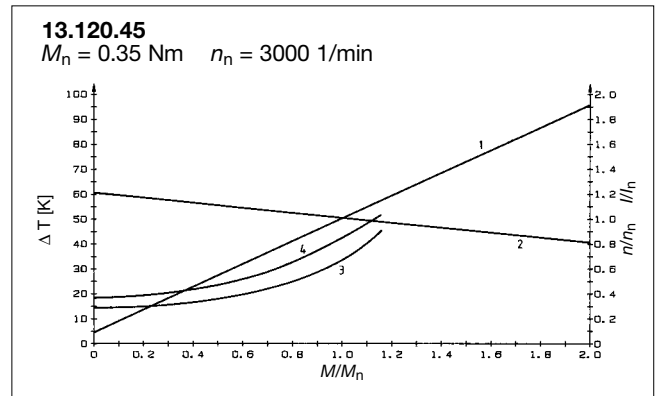
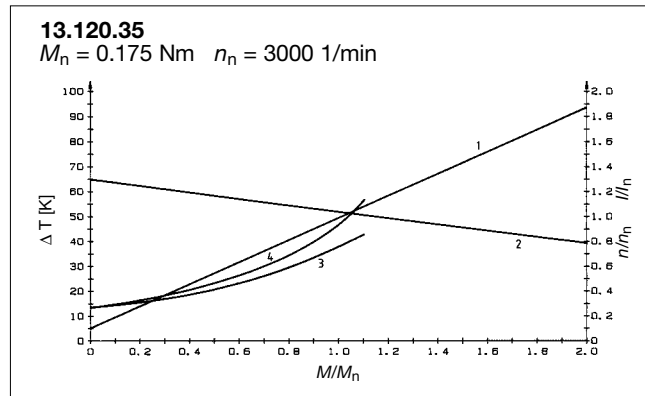


#### Ratings

Motor type	13.120.35		13.120.45		13.120.55		13.120.65		13.120.75	
Rated power (W)	55		110		200		370		540	600
Rated torque (Nm)	0.17		0.35		0.64		1.18		1.7	1.9
Rated armature voltage (V)	24	180	24	180	24	180	24	180	24	160
Rated current (A)	3.7	0.46	6.7	0.86	11.8	1.4	20.2	2.5	27	4.5
max. demagnetisation current (A)	41	5	44	6	71	9	90	11.2	130	20
Armature resistance (Ω)	1.3	71	0.47	27.5	0.19	9.8	0.09	4.6	0.06	1.9
Armature inductance (mH)	1.8	98	1.4	52	0.54	31.5	0.4	25	9	0.26
Rated speed (1/min)	3000		3000		3000		3000		3000	
Inertia (kgcm <sup>2</sup> )	0.458		1.03		3.8		10.69		16.8	
max. radial force (N) Fr	220		320		340		580		570	
max. axial force (N) Fa	200		280		280		330		460	

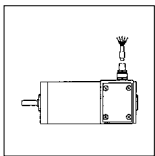


### Characteristics



### Explanations

- 1: Armature current (arith. mean value) as function of the torque
  - 2: Speed as function of the torque at rated voltage
  - 3: Housing overheat as function of the torque at  $F_F = 1$  for 160 V and 180 V motors
  - 4: as 3, for 24 V motors
- $M/M_n$ ,  $I/I_n$ ,  $n/n_n$ : standardised values referred to the rating  
 For a detailed dimensioning of the drives please consult your Lenze sales representative.



## Technical data

### DC permanent magnet motor SGS 45

#### Description

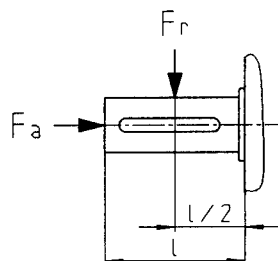
These DC permanent magnet motors have been optimised to a compact design. In combination with worm and planetary gearboxes they turn into small power packages.

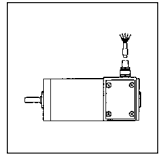
#### General data

Motor type	SGSGP XX 045-21
Enclosure	IP54
Temperature class (VDE 0530)	F
Temperature monitoring	-
Storage	Deep groove ball bearing
Temperature range	0 to +40 °C
Installation height	up to 1000 m a.m.s.l.
Motor connection	Cable
Operating mode (VDE 0530)	S1

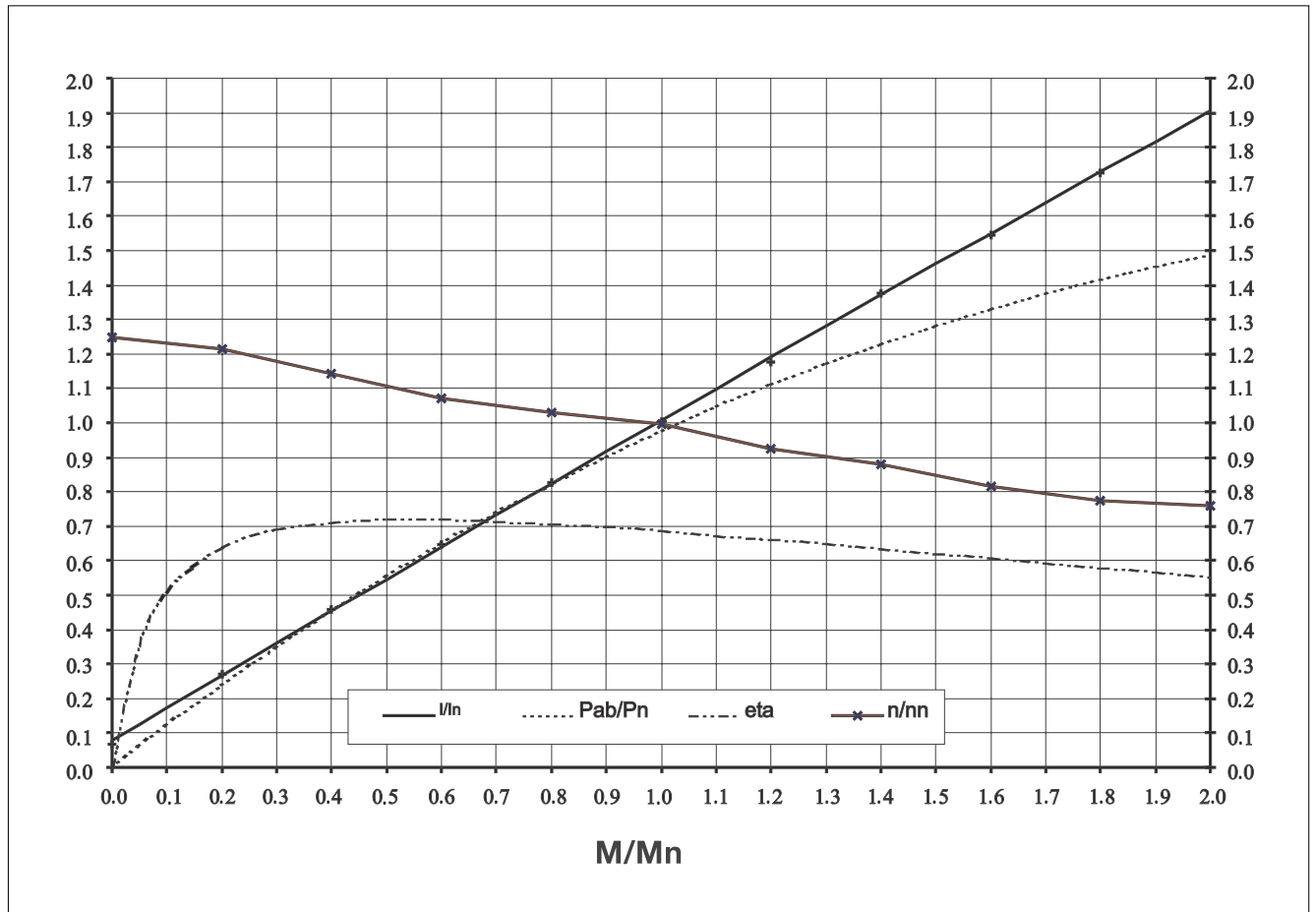
#### Ratings

Motor type	$P_N$ W	$n_N$ min <sup>-1</sup>	$M_N$ N <sub>m</sub>	J kg cm <sup>2</sup>	$U_A$ V	$I_N$ A	$I_{max}$ A	$R_A$ Ohm	$L_A$ mH	$F_r$ N	$F_a$ N
SDS GP XX 045-21	95	3300	0.27	0.91	24	5.5	48	0.56	0.52	220	200

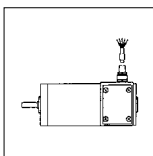




**Technical data**



For a detailed dimensioning of the drives please consult your Lenze sales representative.



## Drive selection

### DC permanent magnet motors

#### Selection tables and order information

$\frac{P_N}{W}$	$\frac{U_A}{V}$	$n_N$ $\text{min}^{-1}$	$M_N$ $\text{Nm}$	Motor type	Design A-side	Selection/Please mark with a cross
55	24 or 180	3000	0.17	13.120.35.0.3._	B3	
				13.120.35.0.2._	B14	
110	24 or 180	3000	0.35	13.120.45.0.3._	B3	
				13.120.45.0.2._	B14	
200	24 or 180	3000	0.64	13.120.55.1.3._	IEC56B3	
				13.120.55.1.2._	IEC56B14C80	
				13.120.55.1.2._	IEC63B14C90	
				13.120.55.1.2._	IEC63B14C120	
370	24 or 180	3000	1.18	13.120.65.1.3._	IEC63B3	
				13.120.65.1.2._	IEC63B14C90	
				13.120.65.1.2._	IEC63B14C120	
				13.120.65.1.2._	IEC71B14C105	
540	24	3000	1.7	13.120.75.1.3._	IEC71B3	
				13.120.75.1.2._	IEC71B14C105	
600	160	3000	1.91	13.120.75.1.3._	IEC71B3	
				13.120.75.1.2._	IEC71B14C105	

Additional order information		Note Page	Selection/Please mark with a cross
<b>B-side design:</b>	0 = without attachments	<b>84</b>	
	1 = with brake <sup>1) 2)</sup>		
	4 = with DC tacho <sup>1)</sup>		
	5 = with AC tacho <sup>1)</sup>		
	6 = for tacho attachment <sup>1)</sup>		
	7 = for brake attachment <sup>1)</sup>		
<b>Rated armature voltage:</b>	24 V		
	180 V		
<b>Enclosure:</b>	<b>IP54</b>		
	IP55		
<b>Motor connection:</b>	<b>Kabel</b>		
	Terminal box		
<b>Cable/Terminal box position:</b>	<b>90 table 1, figure 1</b>		1 2 3 4
<b>Text:</b>	<b>Quantity:</b>		
	<b>Price/unit:</b>		

Bold and underlined = series

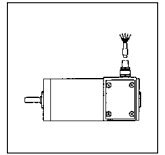
<sup>1)</sup> Not for size 35

<sup>2)</sup> Please specify the brake connection voltage in your order.

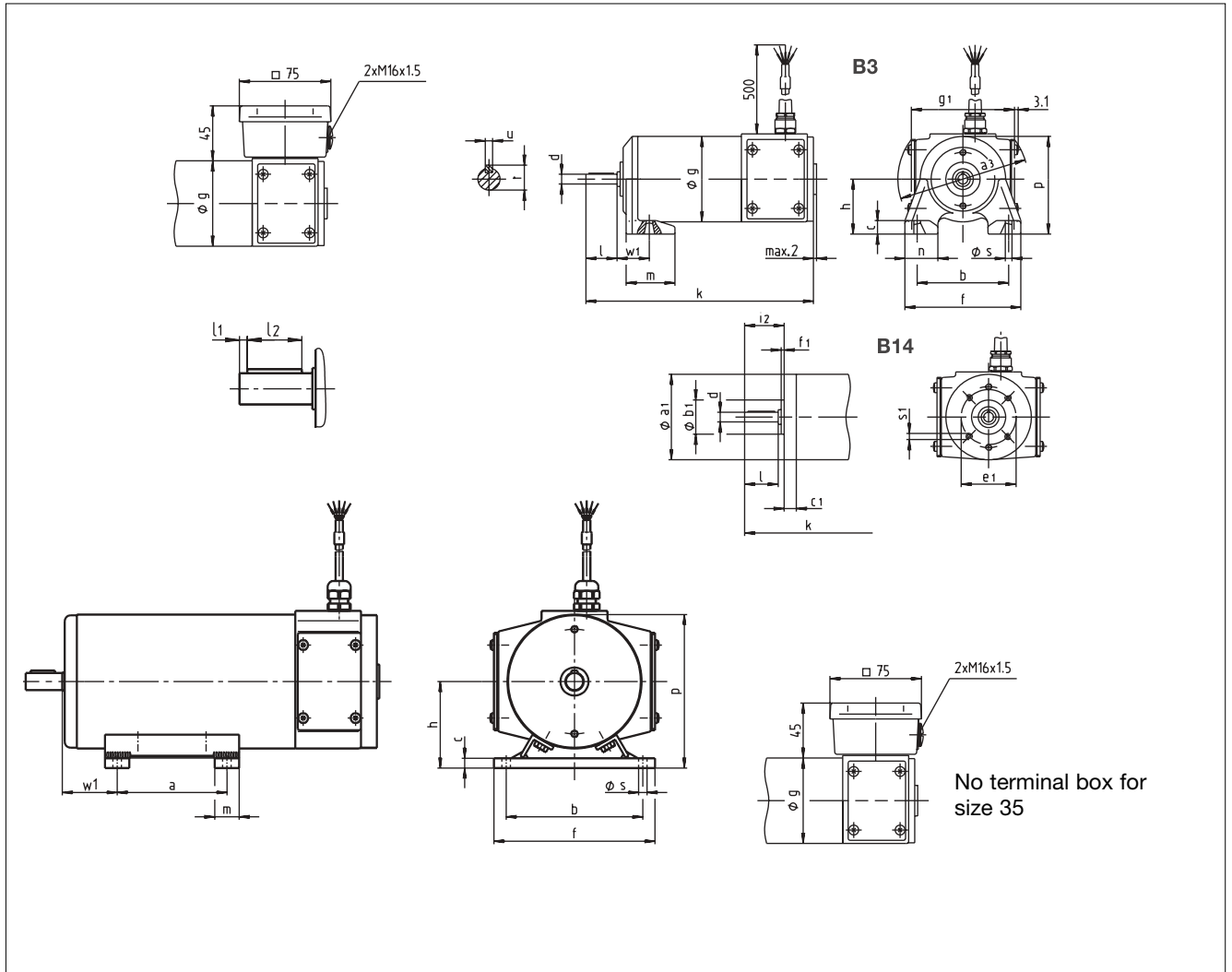
- 24 V DC cable connection
- 205 V DC cable connection

# Drive selection

## DC permanent magnet motors



### Dimensions



Size	Frame size	a <sub>1</sub>	a <sub>3</sub>	b	b <sub>1</sub> j7	c	c <sub>1</sub>	d	e <sub>1</sub>	f max.	f <sub>1</sub>	g	g <sub>1</sub>	g <sub>2</sub>	h	i <sub>2</sub>	k	l*)	l <sub>1</sub>	l <sub>2</sub>	m	n	p	s	s <sub>1</sub>	t	u	w <sub>1</sub>	Weight app. kg		
35	B3	-	-	79	55	-	8	-	7h6	-	71	-	54	62	-	32	-	172	31	-	-	24	20	59	5.5	-	-	-	18	1.4	
	B14	-	50,5	-	-	28	-	8	-	40	-	2.5	-	-	-	33.5	-	-	-	-	-	-	-	-	M4	-	-	-	-		
45	B3	-	-	107	75	-	11	-	8h6	-	96	-	70	84.5	45	45	-	186.5	29	-	-	40	28	80	5.5	-	-	-	23	2.4	
	B14	-	69	-	-	28	-	12	-	45	-	2.5	-	-	-	32.5	-	-	-	-	-	-	-	-	M4	-	-	-	-		
55	IEC 56	B3	-	-	90	-	13	-	9k6	-	112	-	-	-	-	56	-	-	-	-	-	60	34	96	6.5	-	-	-	36	-	
		B14 C80	-	80	-	50	-	17	-	65	-	2.5	-	80	95	45	-	20	213	20	3.5	14	-	-	-	-	-	10.2	3	-	-
	IEC 63	B14 C90	-	90	-	60	-	-	11k6	75	-	2.5	-	-	-	-	23	216	23	3	16	-	-	-	-	M5	12.5	4	-	-	3.7
		B14 C120	-	120	-	80	-	15	-	100	-	3	-	-	-	-	-	-	-	-	-	-	-	-	M6	-	-	-	-	-	
65	IEC 63	B3	-	-	100	-	15	-	-	-	137	-	-	-	-	63	-	-	-	-	-	67	42	112	9	-	-	-	40	-	
		B14 C90	-	98	-	60	-	18.5	11k6	75	-	2.5	-	98	115	45	-	23	259.5	23	3	16	-	-	-	-	M5	12.5	4	-	-
	B14 C120	-	120	-	80	-	16.5	-	100	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	M6	-	-	-	-	8	
	IEC 71	B14 C105	-	105	-	70	-	16.5	14k6	85	-	2.5	-	-	-	-	30	266.5	30	4	20	-	-	-	-	M6	16	5	-	-	
75	IEC 71	B3	90	-	112	-	8	-	14k6	-	132	-	110	132	46	71	-	288	30	4	20	-	-	-	-	-	16	5	-	10.2	
		B14 C105	-	110	-	70	-	14.5	-	85	-	2.5	-	-	-	-	30	-	-	-	-	-	-	-	-	M6	-	-	-	-	

\*) Motors 13.120.35 / 45 have no shaft shoulder.