



# Planetary gear PLE 120

up to 416 Nm

compact gearbox

## low tolerance planetary gears

low turning tolerance

high engine torque

high efficiency factor (96%)

low noise

high quality

mounting position adjustable

lifetime lubrication

simple engine mounting

balanced engine pinion



## Certifications





## technical data

turning tolerance	①-staged	< 8 arcmin
	②-staged	< 12 arcmin
	③-staged	< 14 arcmin
turning stiffness	①-staged	12 Nm/arcmin
	②-staged	13 Nm/arcmin
	③-staged	12 Nm/arcmin
shaft load for 30000 h	radial	1500 N <sup>1)</sup>
	axial	2100 N <sup>1)</sup>
efficiency factor (full load)	①-staged	96 %
	②-staged	94 %
	③-staged	90 %
weight	①-staged	6,0 kg
	②-staged	8,0 kg
	③-staged	10,0 kg
output speed $n_1$	nom. / max.	2500-3500 / 65000 min <sup>-1</sup> <sup>2)</sup>
life expectancy		30000 h
operation temperature		-25 to 90°C
mounting position		adjustable
protection class		IP 54
sound emission		≤ 65 dB (A) <sup>3)</sup>
grease lubrication		lifetime lubrication

<sup>1)</sup> relative to the center of output shaft; output shaft torque  $n_2=100\text{min}^{-1}$  and S1-mode of operation; for electric machinery; at  $T=30^\circ\text{C}$

<sup>2)</sup> acceptable operation temperatures can not be exceeded.

<sup>3)</sup> noise level in 1m distance; measured at torque of  $3000\text{min}^{-1}$  no load;  $i=5$



## available ratios / nominal torque

### ⇒ 1-staged

ratios	i	3:1	4:1	5:1	8:1	10:1
nominal output torque	[Nm]	115	155	195	120	95
maximum output torque	[Nm]	184	284	312	192	152
maximum average output torque <sup>1)</sup>	[min <sup>-1</sup> ]	2550	2500	2500	3500	3500
mass moment of inertia <sup>2)</sup>	[kgcm <sup>2</sup> ]	2,63	1,76	1,53	1,32	1,30

### ⇒ 2-staged

ratios	i	9:1	12:1	15:1	16:1	20:1	25:1	32:1	40:1	64:1
nominal output torque	[Nm]	210	260	230	260	260	230	260	230	120
maximum output torque	[Nm]	336	416	368	416	416	368	416	368	192
maximum average output torque <sup>1)</sup>	[min <sup>-1</sup> ]	2650	2650	3200	3100	3500	3500	3500	3500	3500
mass moment of inertia <sup>2)</sup>	[kgcm <sup>2</sup> ]	2,62	2,56	2,53	1,75	1,50	1,49	1,30	1,30	1,30

### ⇒ 3-staged

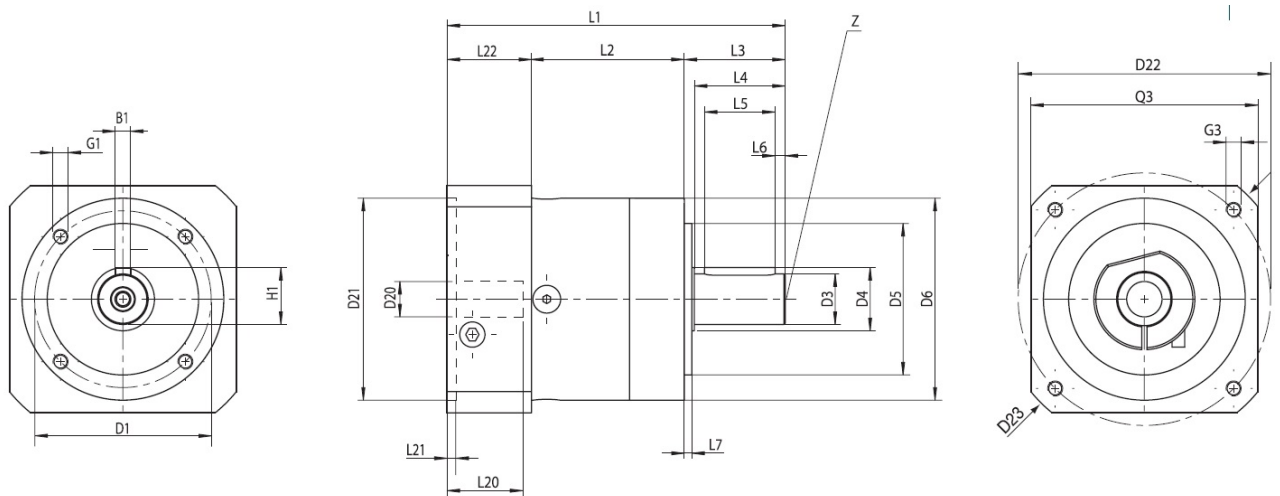
ratios	i	60:1	80:1	100:1	120:1	160:1	200:1	256:1	320:1	512:1
nominal output torque	[Nm]	260	260	260	230	260	230	260	230	120
maximum output torque	[Nm]	416	416	416	368	416	368	416	368	192
maximum average output torque <sup>1)</sup>	[min <sup>-1</sup> ]	3500	3500	3500	3500	3500	3500	3500	3500	3500
mass moment of inertia <sup>2)</sup>	[kgcm <sup>2</sup> ]	2,57	1,50	1,49	2,50	1,30	1,30	1,30	1,30	1,30

Values refer to a output shaft torque of 100min<sup>-1</sup> and S1-mode of operation for electric machinery at T=30°C

<sup>1)</sup> refers to the output shaft and the standard motor shaft diameter D20

<sup>2)</sup> maximum temperature must not be exceeded

technical drawings



B1	feather key DIN 6885 T1	8
D1	flange hole circle	100
D3	shaft diameter <sup>*)</sup>	25
D4	shaft projection <sup>*)</sup>	35
D5	alignment <sup>*)</sup>	80
D6	case diameter <sup>*)</sup>	115
D20	holes <sup>*)</sup>	19
D21	alignment for motor Ø <sup>*)</sup>	95
D22	hole circle <sup>*)</sup>	115
D23	diagonal dimension	145
G1	srcew thread x depth	M10x16
G3	screw thread x depth	M8x20
H1	feather key	28

L1	total length <sup>*)</sup>	①-staged	176,5
		②-staged	204
		③-staged	231,5

L2	case length <sup>*)</sup>	①-staged	74
		②-staged	101,5
		③-staged	129

L3	shaft length Antrieb	55
L4	shaft length to Bund	50
L5	feather key length	40
L6	distance to shaft end	5
L7	alignment bunch	4
L20	shaft length motor <sup>*)</sup>	40
L21	alignment depth	3,5
L22	motor flange length <sup>*)</sup>	47,5
Q3	flange cross-section <sup>*)</sup>	115
Z	alignment hole x depth	M10x22

all dimensions in [mm]  
<sup>\*)</sup> motor dependant