

Planetary gear

# IMS.81 Pro IMS.81 Pro LN

Our planetary gear from the Pro Series with outer diameter 81 mm combines performance with robustness. Due to easy adaptations of the configuration all Pro gears are also available in Low Noise (LN) design.



## Low Noise (LN)

Due to the use of helical gearing in the first stage available as Low Noise variant.



## Performance

Powerful, long-lived and robust - the planetary gear convinces in a multitude of applications.



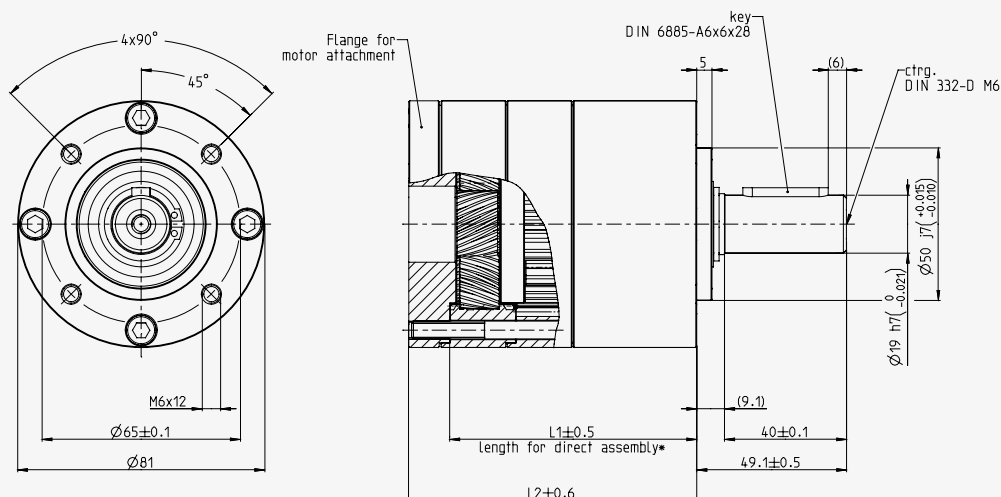
## Temperature

Also ideally suited for demanding temperature ranges from -30° to +120°C.



| Parameter                                                   | 1-stage     | 2-stage     | 3-stage     |
|-------------------------------------------------------------|-------------|-------------|-------------|
| Perm. output torque $T_{AB}$<br>(Appl. factor $C_B = 1.0$ ) | 20.0 Nm     | 60.0 Nm     | 120.0 Nm    |
| Gearbox efficiency, approx.                                 | 0.80        | 0.75        | 0.70        |
| Max. backlash                                               | 0.50 °DEG*  | 0.55 °DEG   | 0.60 °DEG   |
| Recommended initial speed                                   | 3,000 U/min | 3,000 U/min | 3,000 U/min |

\* LN: 0.85 °DEG. For plastic PL wheels only! Impact of 1st stage for 2-4 stage versions is negligible.



All dimensions in millimeters [mm]

Current reduction ratios i rounded

| Pro        | Pro LN         | Pro          | Pro LN         | Pro            | Pro LN           |
|------------|----------------|--------------|----------------|----------------|------------------|
| 1-stage    | 1-stage        | 2-stage      | 2-stage        | 3-stage        | 3-stage          |
| 4:1 (3.71) | 4:1 (3.65)     | 14:1 (13.73) | 14:1 (13.53)   | 51:1 (50.89)   | 50:1 (50.16)     |
| 4:1 (4.29) | 5:1 (4.59)     | 16:1 (15.88) | 16:1 (15.65)   | 59:1 (58.86)   | 58:1 (58.01)     |
| 5:1 (5.18) | 5:1 (5.36)     | 18:1 (18.37) | 17:1 (17.00)   | 68:1 (68.07)   | 67:1 (67.08)     |
| 7:1 (6.75) | 7:1 (6.55)     | 19:1 (19.20) | 9:1 (18.92)    | 71:1 (71.16)   | 70:1 (70.13)     |
|            | 9:1 (8.63)     | 22:1 (22.21) | 23:1 (22.96)   | 79:1 (78.72)   | 81:1 (81.11)     |
|            | * 13:1 (13.20) | 25:1 (25.01) | 25:1 (24.65)   | 93:1 (92.70)   | 91:1 (91.36)     |
|            |                | 27:1 (26.85) | 28:1 (27.76)   | 95:1 (95.18)   | 98:1 (98.07)     |
|            |                | 29:1 (28.93) | 28:1 (28.05)   | 100:1 (99.51)  | 102:1 (101.89)   |
|            |                | 35:1 (34.98) | 34:1 (33.92)   | 107:1 (107.21) | 106:1 (105.65)   |
|            |                | 46:1 (45.56) | 45:1 (44.69)   | 115:1 (115.08) | 115:1 (114.77)   |
|            |                |              | 58:1 (58.22)   | 124:1 (123.98) | 123:1 (123.20)   |
|            |                |              | * 68:1 (68.40) | 130:1 (129.62) | 128:1 (127.74)   |
|            |                |              | * 89:1 (89.10) | 139:1 (139.14) | 137:1 (136.99)   |
|            |                |              |                | 150:1 (149.90) | 145:1 (145.36)   |
|            |                |              |                | 169:1 (168.85) | 166:1 (166.40)   |
|            |                |              |                | 181:1 (181.25) | 176:1 (175.75)   |
|            |                |              |                | 195:1 (195.27) | 192:1 (191.54)   |
|            |                |              |                | 236:1 (236.10) | 232:1 (231.59)   |
|            |                |              |                | 308:1 (307.55) | 302:1 (301.68)   |
|            |                |              |                |                | 393:1 (392.98)   |
|            |                |              |                |                | * 462:1 (461.70) |
|            |                |              |                |                | * 601:1 (601.43) |

\* not all reduction ratios available ex-stock

| Output side with ball bearing (2RS)     | 1-stage | 2-stage | 3-stage |
|-----------------------------------------|---------|---------|---------|
| Max. load, radial (Middle output shaft) | 400 N   | 600 N   | 1.000 N |
| Max. load, axial                        | 80 N    | 120 N   | 200 N   |
| Max. perm.fitting pressure              | 1,500 N | 1,500 N | 1,500 N |
| Weight approx. with motor flange C80    | 1.8 kg  | 2.5 kg  | 3.2 kg  |

| Gearbox length in mm  | 1-stage    | 2-stage     | 3-stage     |
|-----------------------|------------|-------------|-------------|
| Length 1 <sup>a</sup> | 59.3 ± 0.5 | 80.95 ± 0.5 | 102.6 ± 0.5 |
| Length 2 <sup>b</sup> | 72.8 ± 0.6 | 94.45 ± 0.6 | 116.1 ± 0.6 |

<sup>a</sup> Shortest possible gear length, can only be realized if motor design directly matches our ring gear.

<sup>b</sup> The calculatory minimum length of the gear is indicated on condition of an optimum connection of flange and motor.  
Please contact us directly for your concrete project.

All figures are approximate values.

Variations are possible and may arise for example due to non-standardized inspection and measurement methods.  
For more detailed information, please contact us directly. The company always reserves the right to make technical modifications. For current status, please consult [www.imsgea.com](http://www.imsgea.com)