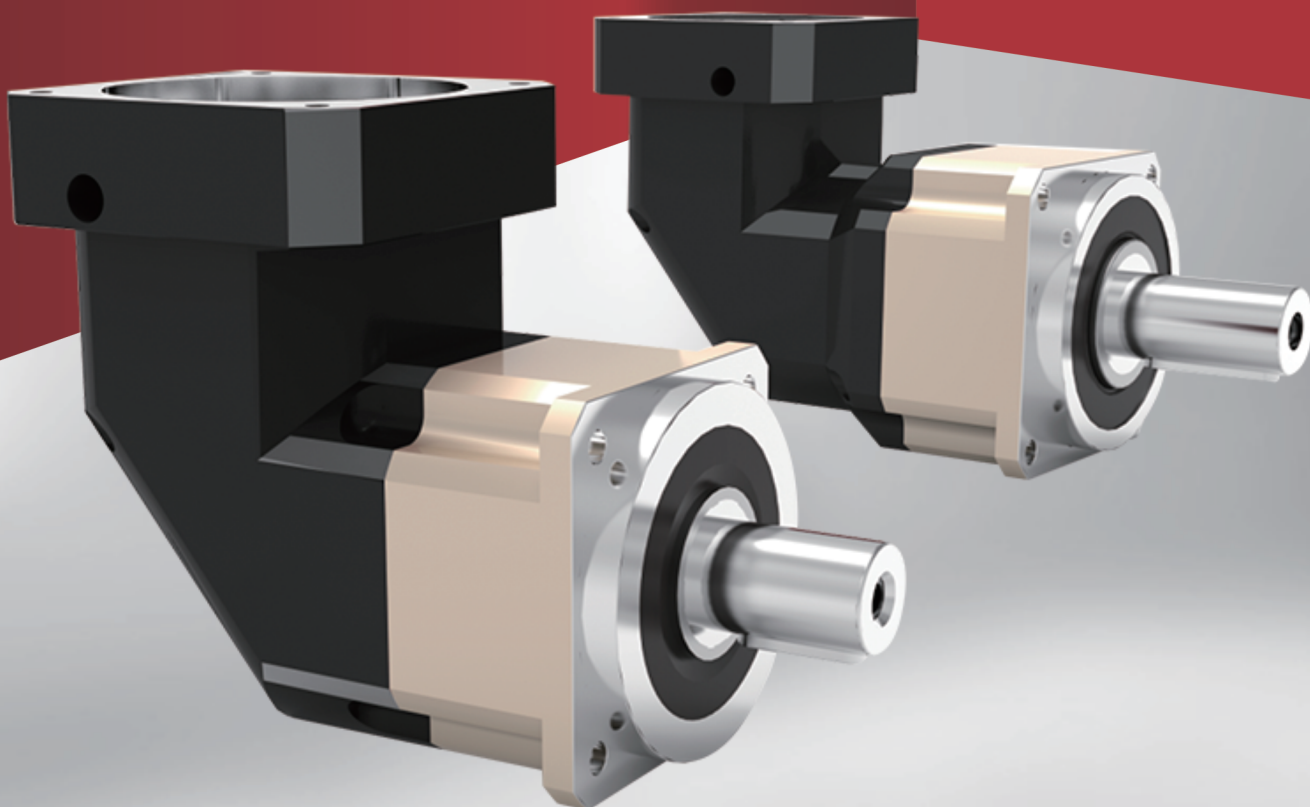


# ABR

High precision helical planetary reducer



High-precision Helical Planetary Gear Reducer

OUTLINE DIMENSION SHEET

| Specification                         |           | Stages | Reduction Ratio 1 | ABR042                       | ABR060 | ABR090 | ABR115 | ABR142 | ABR180 | ABR220 |
|---------------------------------------|-----------|--------|-------------------|------------------------------|--------|--------|--------|--------|--------|--------|
| Rated output torque T2N               | Nm        | 1      | 3                 | 20                           | 55     | 130    | 208    | 342    | 588    | 1,140  |
|                                       |           |        | 4                 | 19                           | 50     | 140    | 290    | 542    | 1,050  | 1,700  |
|                                       |           |        | 5                 | 22                           | 60     | 160    | 330    | 650    | 1,200  | 2,000  |
|                                       |           |        | 6                 | 20                           | 55     | 150    | 310    | 600    | 1,100  | 1,900  |
|                                       |           |        | 7                 | 19                           | 35     | 140    | 300    | 550    | 1,100  | 1,800  |
|                                       |           |        | 8                 | 17                           | 35     | 120    | 260    | 500    | 1,000  | 1,600  |
|                                       |           |        | 10                | 14                           | 23     | 48     | 140    | 370    | 520    | 1,220  |
|                                       |           |        | 14                | -                            | 35     | 140    | 300    | 550    | 1,100  | 1,800  |
|                                       |           | 2      | 20                | -                            | 23     | 48     | 140    | 370    | 520    | 1,220  |
|                                       |           |        | 15                | 20                           | 55     | 130    | 208    | 342    | 588    | 1,140  |
|                                       |           |        | 20                | 19                           | 50     | 140    | 290    | 542    | 1,050  | 1,700  |
|                                       |           |        | 25                | 22                           | 60     | 160    | 330    | 650    | 1,200  | 2,000  |
|                                       |           |        | 30                | 22                           | 60     | 160    | 330    | 650    | 1,200  | 2,000  |
|                                       |           |        | 40                | 22                           | 60     | 160    | 330    | 650    | 1,200  | 2,000  |
|                                       |           |        | 50                | 22                           | 60     | 160    | 330    | 650    | 1,200  | 2,000  |
|                                       |           |        | 60                | 22                           | 60     | 160    | 330    | 650    | 1,200  | 2,000  |
|                                       |           |        | 70                | 22                           | 60     | 160    | 330    | 650    | 1,200  | 2,000  |
|                                       |           |        | 80                | 22                           | 60     | 160    | 330    | 650    | 1,200  | 2,000  |
|                                       |           |        | 100               | 22                           | 60     | 160    | 330    | 650    | 1,200  | 2,000  |
|                                       |           |        | 120               | -                            | -      | 150    | 310    | 600    | 1,100  | 1,900  |
|                                       |           |        | 140               | -                            | -      | 140    | 300    | 550    | 1,100  | 1,800  |
|                                       |           |        | 160               | -                            | -      | 120    | 260    | 500    | 1,000  | 1,600  |
|                                       |           |        | 200               | -                            | -      | 48     | 140    | 370    | 520    | 1,220  |
| Maximum output torque T <sub>2n</sub> | Nm        | 1,2    | 3~200             | 3 times rated output cabinet |        |        |        |        |        |        |
| Rated input speed n <sub>1</sub>      | rpm       | 1,2    | 3~200             | 5,000                        | 5,000  | 4,000  | 4,000  | 3,000  | 3,000  | 2,000  |
| Maximum input speed n <sub>1n</sub>   | rpm       | 1,2    | 3~200             | 10,000                       | 10,000 | 8,000  | 8,000  | 6,000  | 6,000  | 4,000  |
| Ultra-precision backlash P0           | arcmin    | 1      | 3~20              | -                            | -      | ≤2     | ≤2     | ≤2     | ≤2     | ≤2     |
|                                       |           | 2      | 15~200            | -                            | -      | ≤4     | ≤4     | ≤4     | ≤4     | ≤4     |
| Precision backlash P1                 | arcmin    | 1      | 3~20              | ≤4                           | ≤4     | ≤4     | ≤4     | ≤4     | ≤4     | ≤4     |
|                                       |           | 2      | 15~200            | ≤7                           | ≤7     | ≤7     | ≤7     | ≤7     | ≤7     | ≤7     |
| Standard backlash P2                  | arcmin    | 1      | 3~20              | ≤6                           | ≤6     | ≤6     | ≤6     | ≤6     | ≤6     | ≤4     |
|                                       |           | 2      | 15~200            | ≤9                           | ≤9     | ≤9     | ≤9     | ≤9     | ≤9     | ≤7     |
| Torsional rigidity                    | Nm/arcmin | 1,2    | 3~200             | 3                            | 7      | 14     | 25     | 50     | 145    | 225    |
| Permissible radial force F2rB2        | N         | 1,2    | 3~200             | 780                          | 1,530  | 3,250  | 6,700  | 9,400  | 14,500 | 50,000 |
| Permissible radial force F2a182       | N         | 1,2    | 3~200             | 350                          | 630    | 1,300  | 3,000  | 4,000  | 6,200  | 35,000 |
| Permissible radial force F2a2B2       | N         | 1,2    | 3~200             | 390                          | 765    | 1,625  | 3,350  | 4,700  | 7,250  | 25,000 |
| Service life                          | hr        | 1,2    | 3~200             | 20,000*                      |        |        |        |        |        |        |
| efficiency η                          | %         | 1      | 3~20              | ≤95%                         |        |        |        |        |        |        |
|                                       |           | 2      | 15~200            | ≤92%                         |        |        |        |        |        |        |
| weight                                | kg        | 1      | 3~20              | 0.9                          | 2.1    | 6.4    | 13     | 24.5   | 51     | 83     |
|                                       |           | 2      | 15~200            | 1.2                          | 2.5    | 7.8    | 14.2   | 27.5   | 54     | 95     |
| Use temperature                       | ℃         | 1,2    | 3~200             | -10℃~+90℃                    |        |        |        |        |        |        |
| lubricating                           |           | 1,2    | 3~200             | Synthetic grease             |        |        |        |        |        |        |
| Protection level                      |           | 1,2    | 3~200             | IP65                         |        |        |        |        |        |        |
| Installation direction                |           | 1,2    | 3~200             | Any direction                |        |        |        |        |        |        |
| Noise level (n <sub>1</sub> =3000rpm) | dB        | 1,2    | 3~200             | ≤61                          | ≤63    | ≤65    | ≤68    | ≤70    | ≤72    | ≤74    |

Reducer moment of inertia

| Specification                    |                      | Stages | Reduction Ratio 1 | ABR042 | ABR060 | ABR090 | ABR115 | ABR142 | ABR180 | ABR220 |
|----------------------------------|----------------------|--------|-------------------|--------|--------|--------|--------|--------|--------|--------|
| Moment of inertia J <sub>i</sub> | kg · cm <sup>2</sup> | 1      | 3~10              | 0.09   | 0.35   | 2.25   | 6.84   | 23.4   | 68.9   | 135.4  |
|                                  |                      |        | 14                | -      | 0.07   | 1.87   | 6.28   | 21.8   | 65.6   | 119.8  |
|                                  |                      |        | 20                | -      | 0.07   | 1.87   | 6.28   | 21.8   | 65.6   | 119.8  |
|                                  |                      | 2      | 15~100            | 0.09   | 0.09   | 0.35   | 2.25   | 6.84   | 23.4   | 68.9   |
|                                  |                      |        | 120~200           | -      | -      | 0.31   | 1.87   | 6.25   | 21.8   | 65.6   |

1. Reduction ratio (i=N<sub>in</sub>/N<sub>out</sub>)

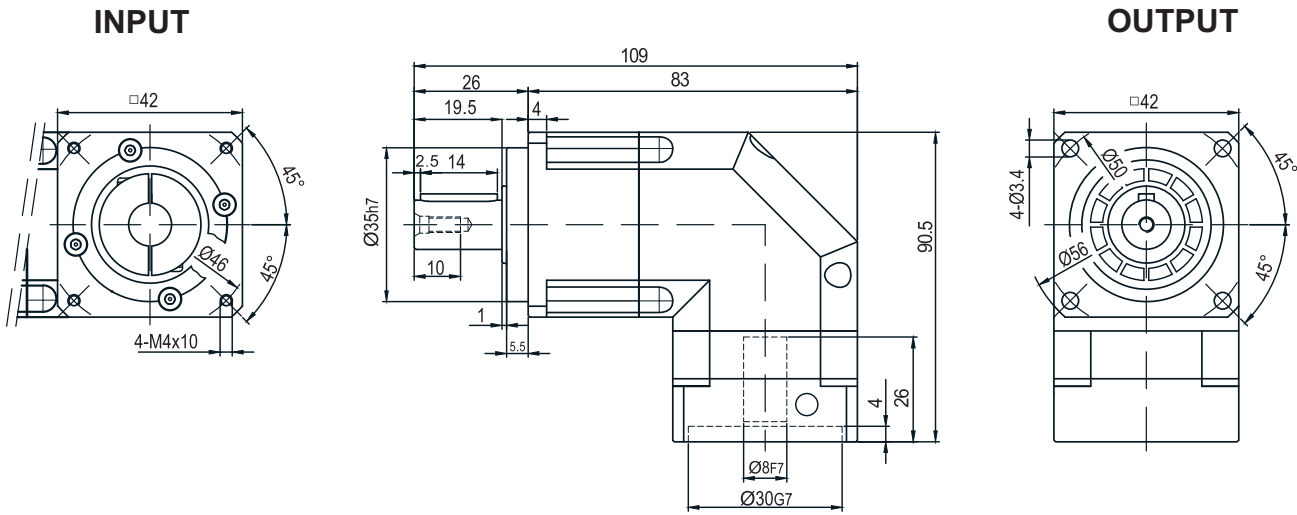
\*Continuous operation reduces service life by half.

2. When the output speed is 100 rpm,

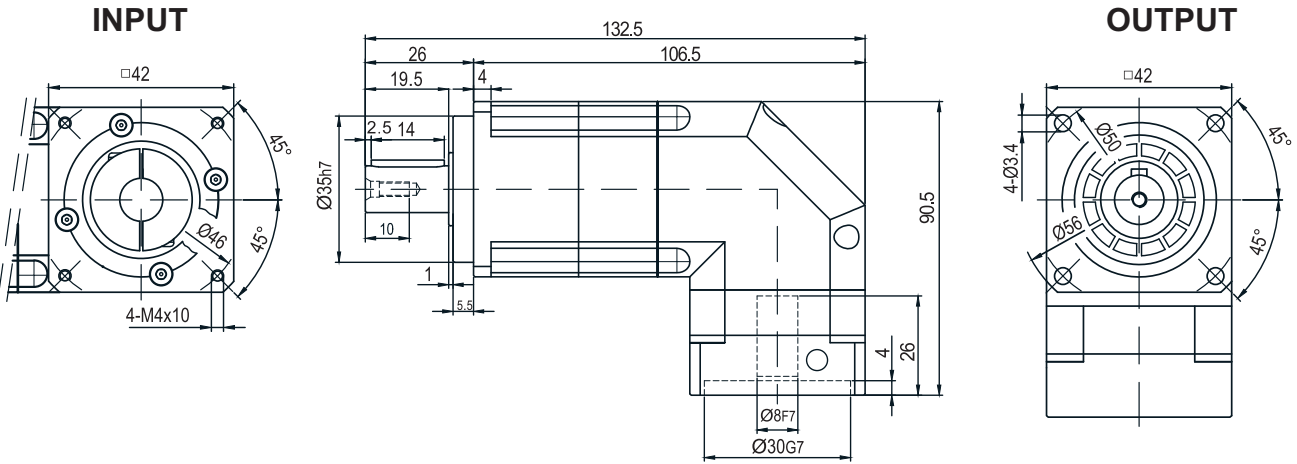
it acts on the center position of the output shaft.

\*The input motor connection plate dimensions can be customized according to customer requirements.

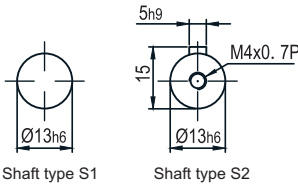
ABR-042-L1



ABR-042-L2

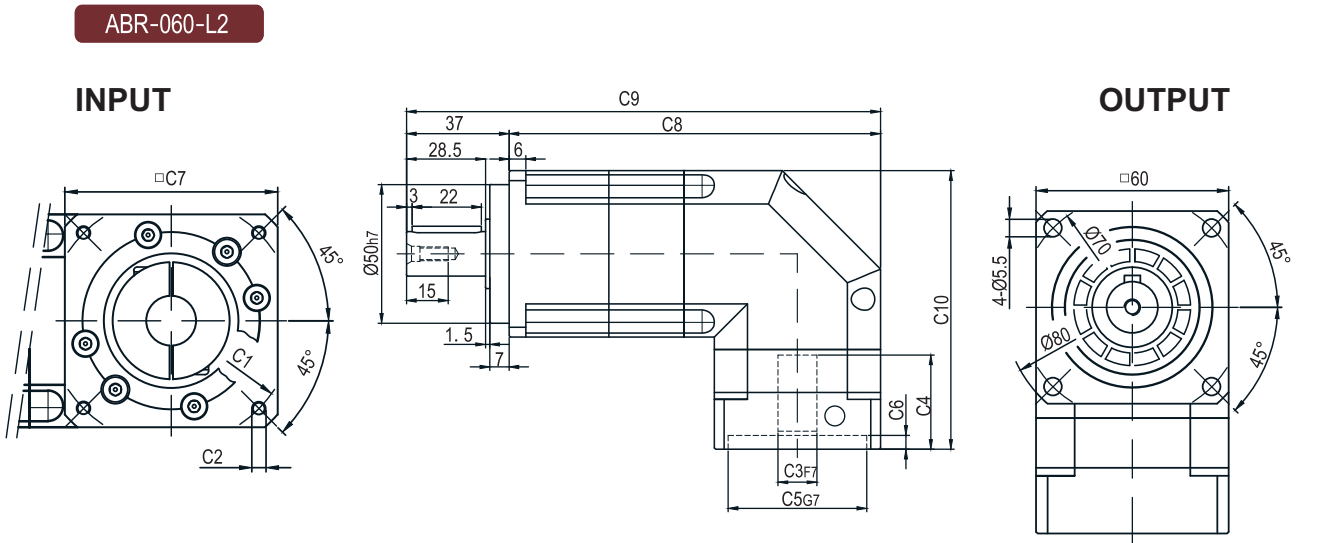
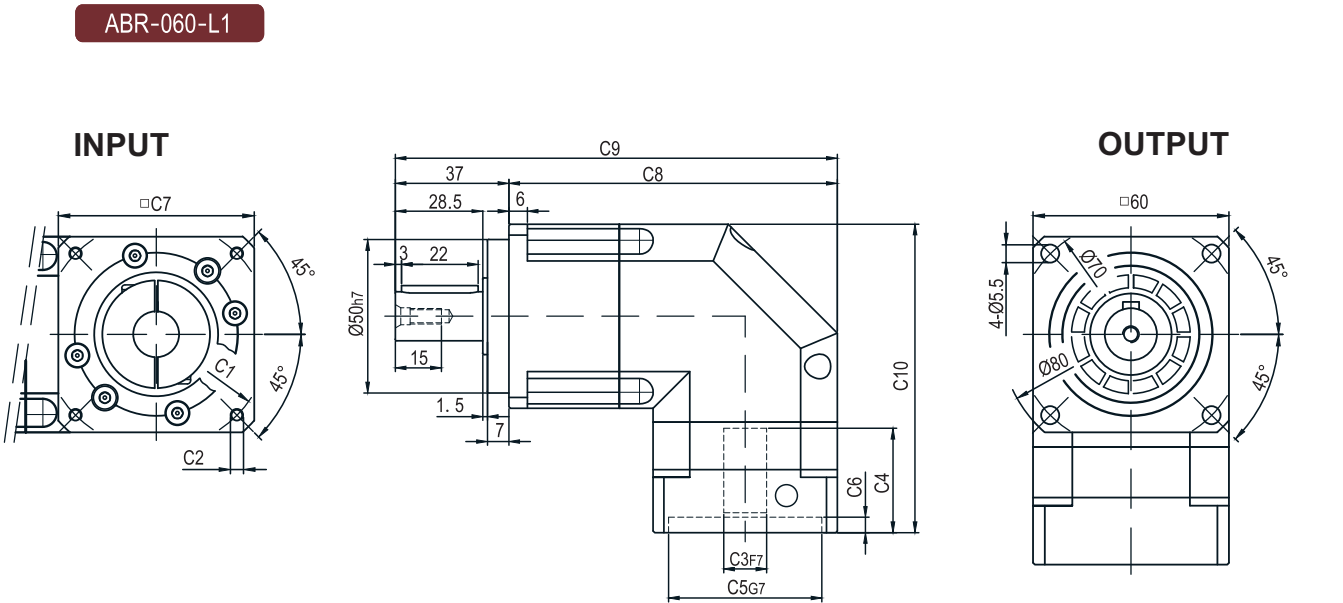


OUTPUT DIAMETER

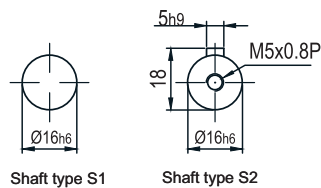


High-precision Helical Planetary Gear Reducer

OUTLINE DIMENSION SHEET

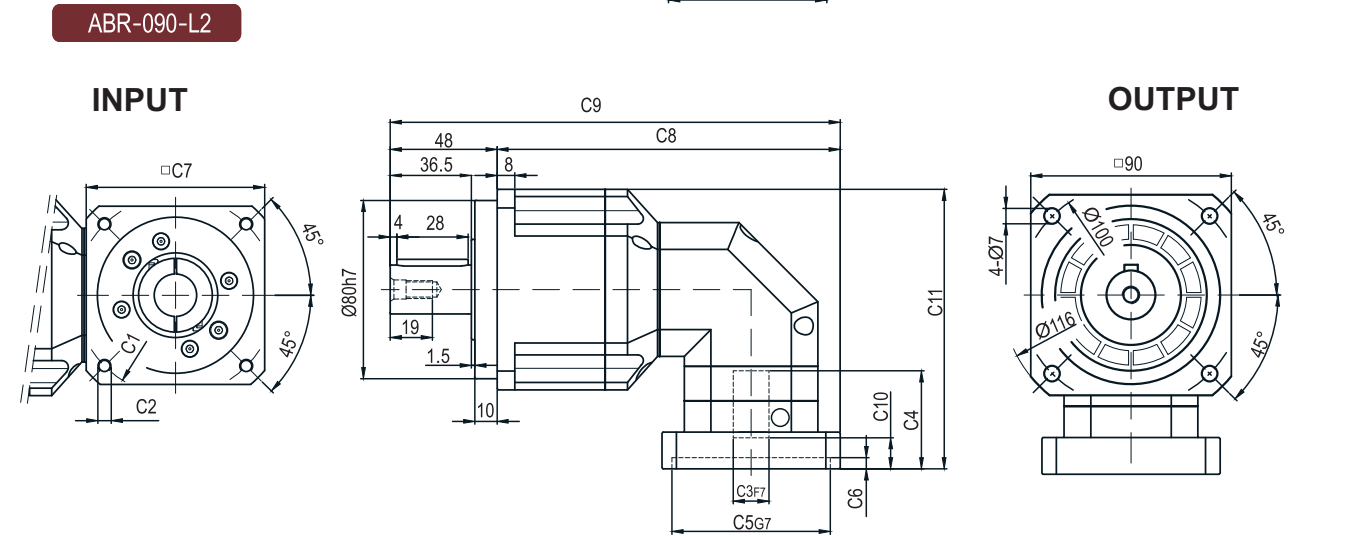
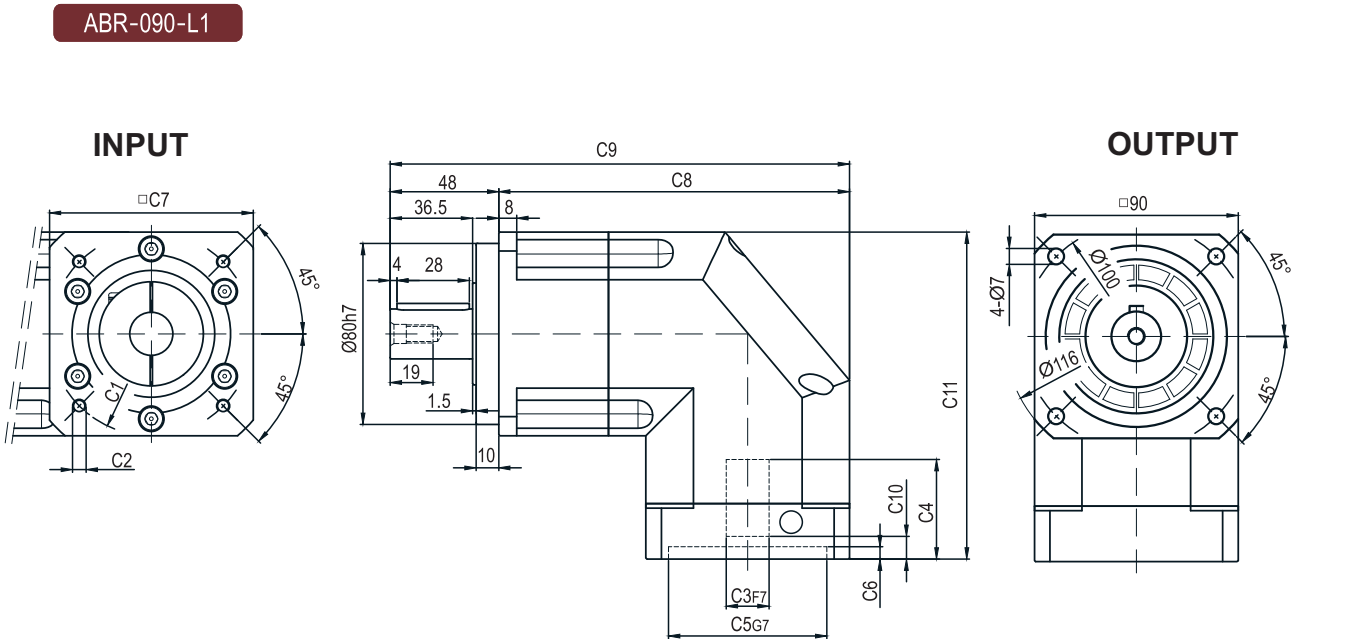


OUTPUT DIAMETER

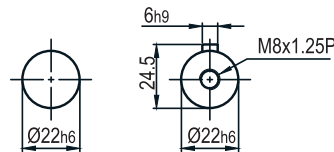


| Size       | C1  | C2                | C3      | C4 | C5  | C6 | C7 | C8  | C9  | C10   |
|------------|-----|-------------------|---------|----|-----|----|----|-----|-----|-------|
| ABR-060-L1 | Ø70 | 4-M4x10 , 4-M5x12 | Ø11,Ø14 | 34 | Ø50 | 5  | 60 | 107 | 144 | 100.5 |
|            | Ø90 | 4-M5x12 , 4-M6x12 | Ø19     | 44 | Ø70 | 5  | 80 | 117 | 154 | 110.5 |
| ABR-060-L2 | Ø70 | 4-M4x10 , 4-M5x12 | Ø11,Ø14 | 34 | Ø50 | 5  | 60 | 134 | 171 | 100.5 |

OUTLINE DIMENSION SHEET



OUTPUT DIAMETER



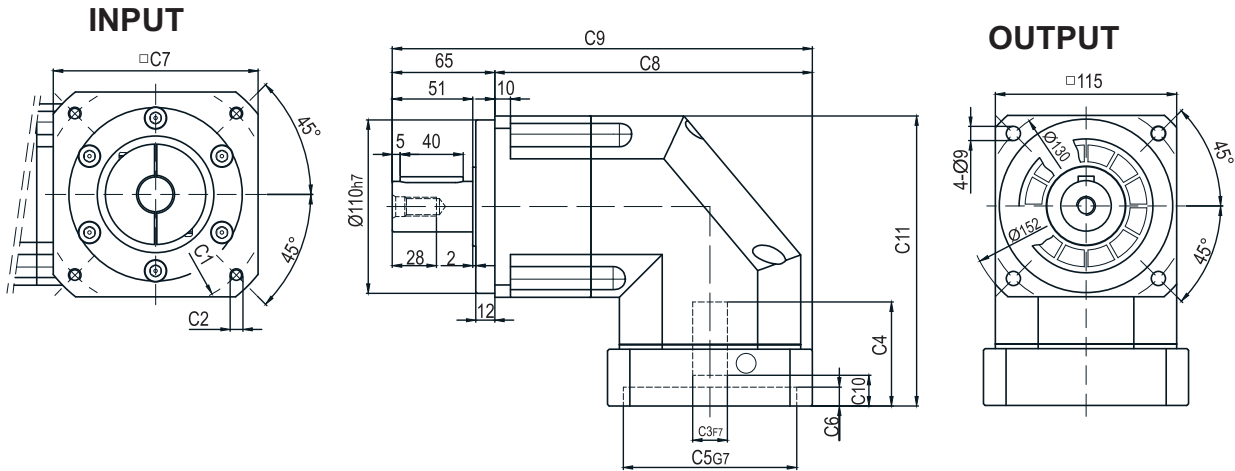
| Size       | C1   | C2                | C3          | C4   | C5   | C6 | C7  | C8  | C9  | C10  | C11   |
|------------|------|-------------------|-------------|------|------|----|-----|-----|-----|------|-------|
| ABR-090-L1 | Ø90  | 4-M5x12 , 4-M6x12 | Ø19         | 44   | Ø70  | 6  | 90  | 155 | 203 | 9    | 142   |
|            | Ø100 | 4-M6x12           | Ø16         | 44   | Ø80  | 5  | 90  | 155 | 203 | 8    | 142   |
|            | Ø115 | 4-M8x20           | Ø19,Ø22     | 50   | Ø95  | 8  | 100 | 160 | 208 | 14   | 148   |
|            | Ø115 | 4-M8x25           | Ø19,Ø22     | 57   | Ø95  | 8  | 100 | 160 | 208 | 21   | 155   |
| ABR-090-L2 | Ø145 | 4-M8x25           | Ø19,Ø22,Ø24 | 60   | Ø110 | 11 | 130 | 175 | 223 | 24   | 158   |
|            | Ø70  | 4-M4x10 , 4-M5x12 | Ø11,Ø14     | 34   | Ø50  | 5  | 60  | 144 | 192 | 5.5  | 115.5 |
|            | Ø90  | 4-M5x12 , 4-M6x12 | Ø19         | 44   | Ø70  | 5  | 80  | 154 | 202 | 16.5 | 125.5 |
|            | Ø100 | 4-M6x12           | Ø16         | 38.5 | Ø80  | 5  | 86  | 157 | 205 | 10   | 120   |

\*C1~C7 are the dimensions of the metric standard motor connection plate, which can be customized according to customer requirements.

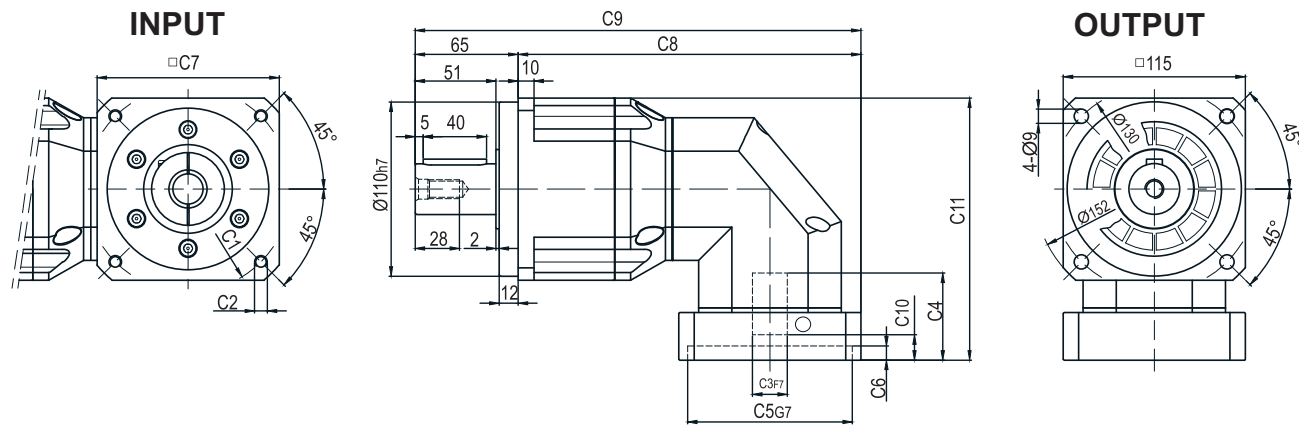
High-precision Helical Planetary Gear Reducer

OUTLINE DIMENSION SHEET

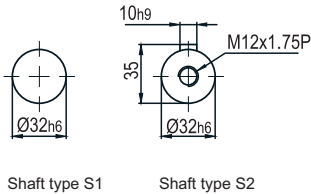
ABR-115-L1



ABR-115-L2



OUTPUT DIAMETER

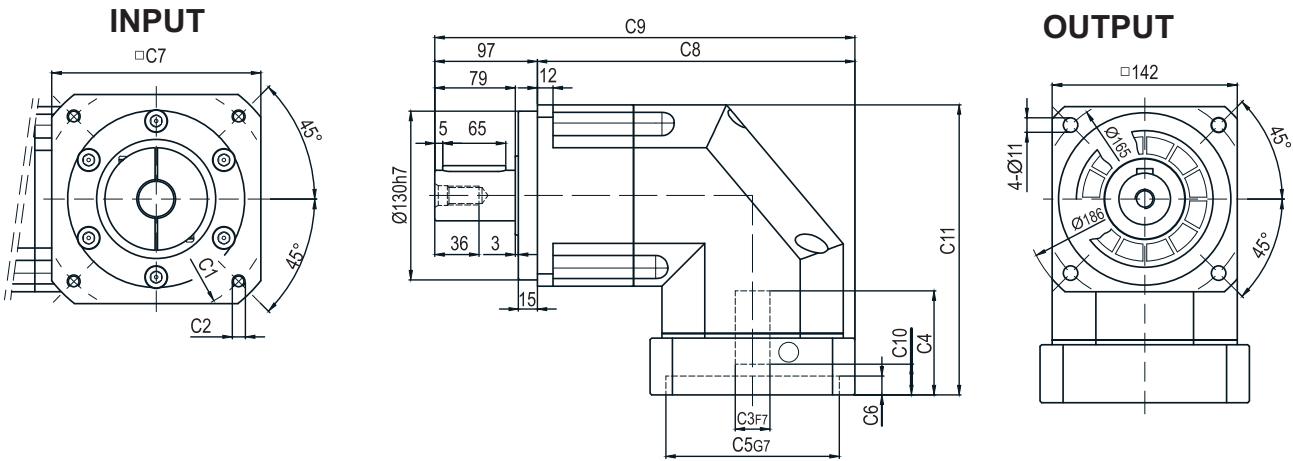


| Size       | C1                | C2               | C3                                               | C4 | C5                  | C6 | C7  | C8    | C9    | C10  | C11   |
|------------|-------------------|------------------|--------------------------------------------------|----|---------------------|----|-----|-------|-------|------|-------|
| ABR-115-L1 | $\varnothing 145$ | 4-M8x25          | $\varnothing 19, \varnothing 22, \varnothing 24$ | 66 | $\varnothing 110$   | 14 | 130 | 201.5 | 266.5 | 19.5 | 184   |
|            | $\varnothing 200$ | 4-M12x28         | $\varnothing 35$                                 | 81 | $\varnothing 114.3$ | 21 | 180 | 226.5 | 291.5 | 35.5 | 199   |
| ABR-115-L2 | $\varnothing 90$  | 4-M5x12, 4-M6x12 | $\varnothing 19$                                 | 44 | $\varnothing 70$    | 6  | 90  | 204   | 269   | 9    | 154.5 |
|            | $\varnothing 100$ | 4-M6x12          | $\varnothing 16$                                 | 44 | $\varnothing 80$    | 5  | 90  | 204   | 269   | 8    | 154.5 |
|            | $\varnothing 115$ | 4-M8x20          | $\varnothing 19, \varnothing 22$                 | 50 | $\varnothing 95$    | 8  | 100 | 209   | 274   | 14   | 160.5 |
|            | $\varnothing 115$ | 4-M8x25          | $\varnothing 19, \varnothing 22$                 | 57 | $\varnothing 95$    | 8  | 100 | 209   | 274   | 21   | 167.5 |
|            | $\varnothing 145$ | 4-M8x25          | $\varnothing 19, \varnothing 22, \varnothing 24$ | 60 | $\varnothing 110$   | 11 | 130 | 224   | 289   | 24   | 170.5 |

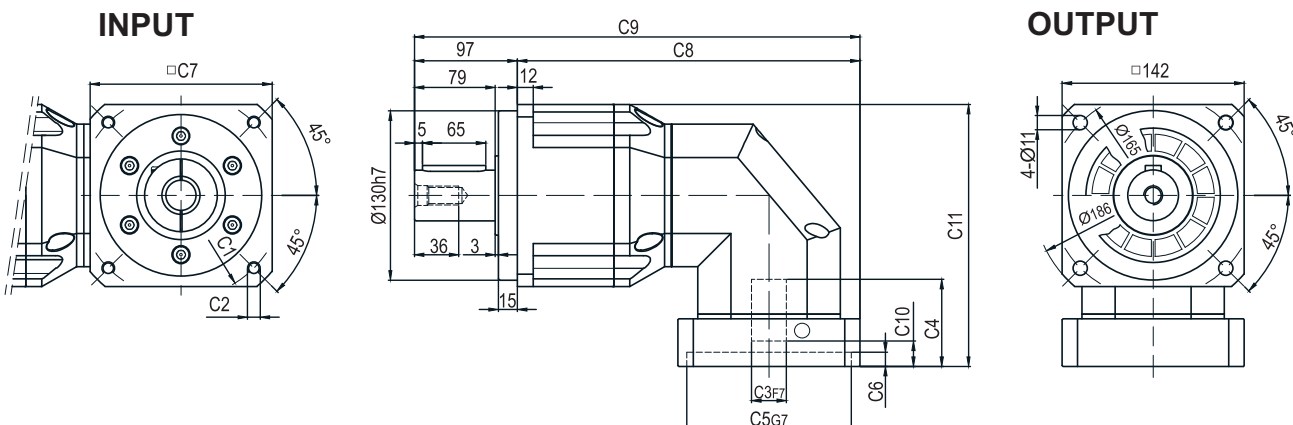
\*C1~C7 are the dimensions of the metric standard motor connection plate, which can be customized according to customer requirements.

OUTLINE DIMENSION SHEET

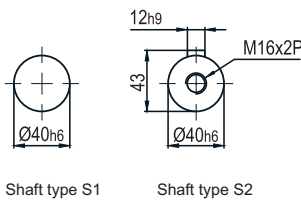
ABR-142-L1



ABR-142-L2



OUTPUT DIAMETER

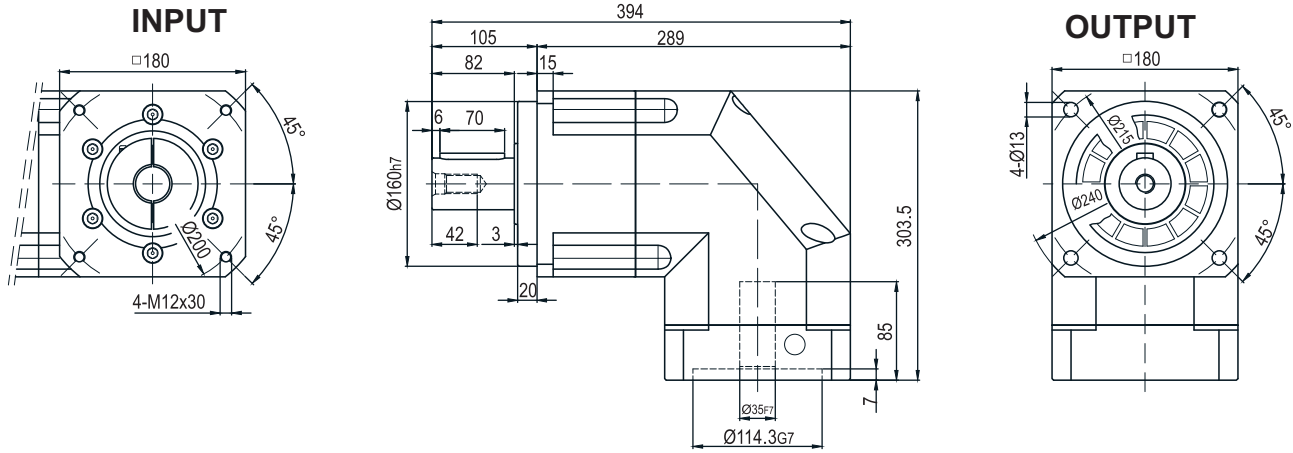


| Size       | C1                | C2       | C3                                               | C4 | C5                  | C6 | C7  | C8    | C9    | C10  | C11   |
|------------|-------------------|----------|--------------------------------------------------|----|---------------------|----|-----|-------|-------|------|-------|
| ABR-142-L1 | $\varnothing 145$ | 4-M8x25  | $\varnothing 22, \varnothing 24$                 | 83 | $\varnothing 110$   | 11 | 142 | 236   | 333   | 19.5 | 228   |
|            | $\varnothing 200$ | 4-M12x30 | $\varnothing 35$                                 | 85 | $\varnothing 114.3$ | 15 | 180 | 255   | 352   | 21.5 | 230   |
| ABR-142-L2 | $\varnothing 145$ | 4-M8x25  | $\varnothing 19, \varnothing 22, \varnothing 24$ | 66 | $\varnothing 110$   | 14 | 130 | 256.5 | 353.5 | 19.5 | 197.5 |
|            | $\varnothing 200$ | 4-M12x28 | $\varnothing 35$                                 | 81 | $\varnothing 114.3$ | 21 | 180 | 281.5 | 378.5 | 35.5 | 212.5 |

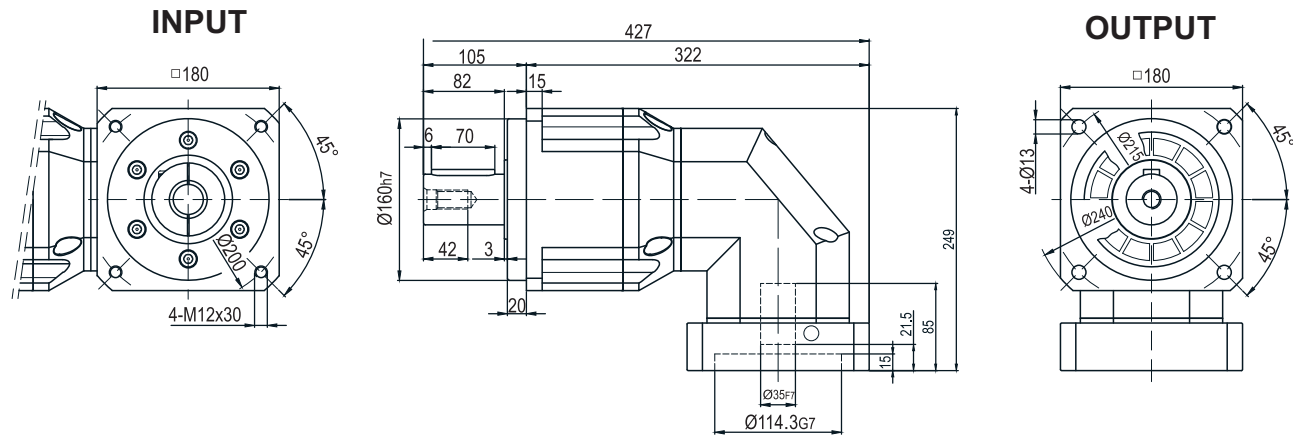
High-precision Helical Planetary Gear Reducer

OUTLINE DIMENSION SHEET

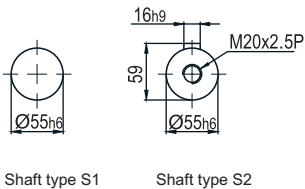
ABR-180-L1



ABR-180-L2



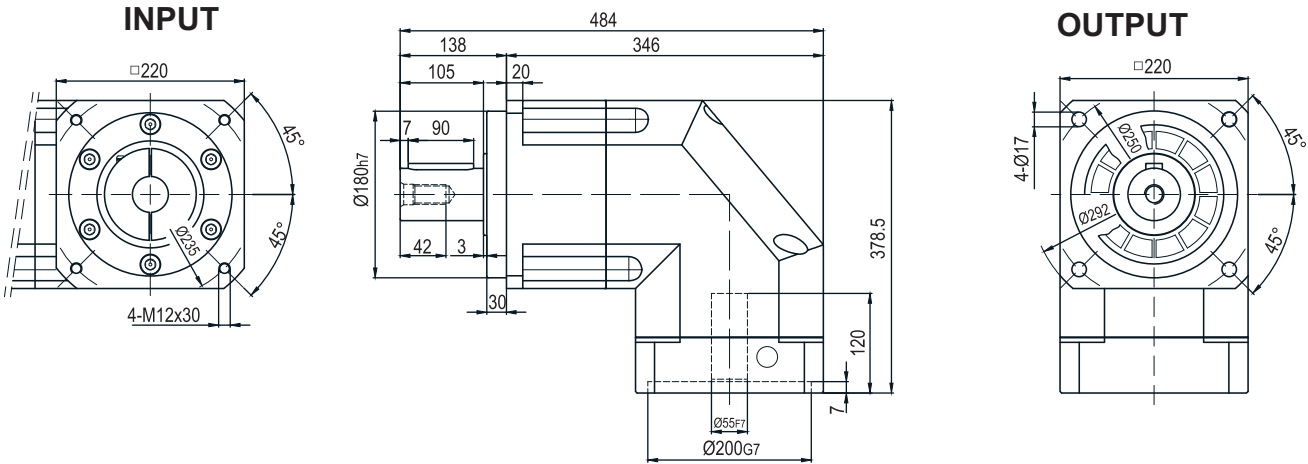
OUTPUT DIAMETER



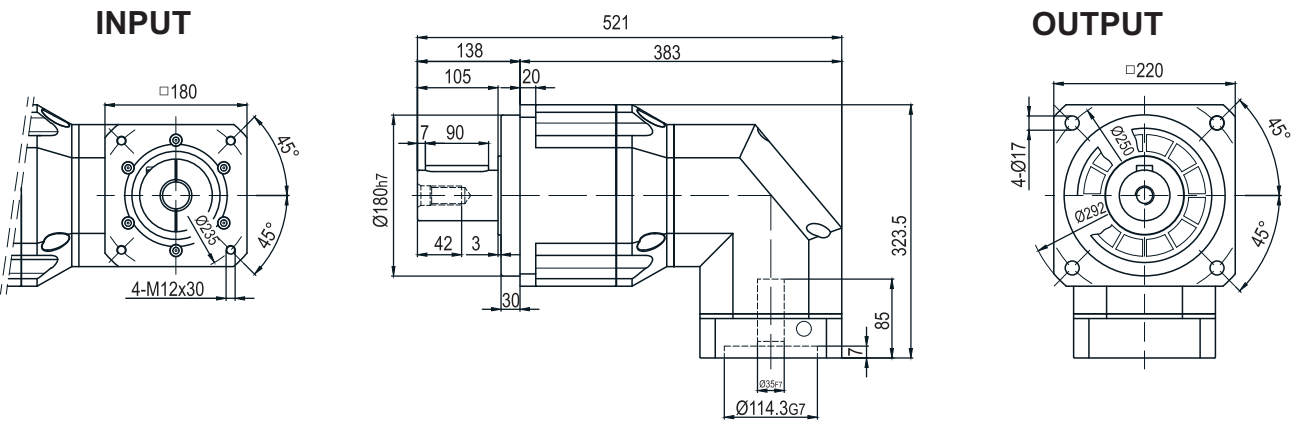
\*The input motor connection plate dimensions can be customized according to customer requirements.

OUTLINE DIMENSION SHEET

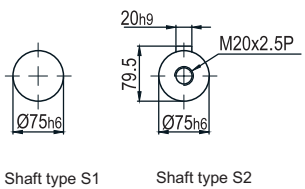
ABR-220-L1



ABR-220-L2



OUTPUT DIAMETER



\*The input motor connection plate dimensions can be customized according to customer requirements.