# Option

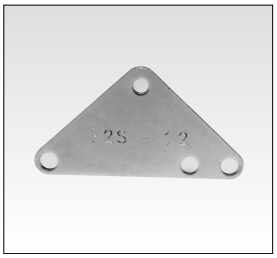
# Option

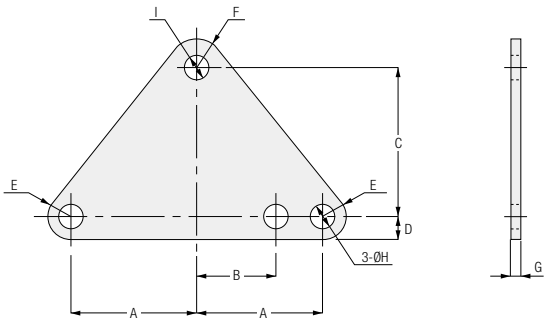


## Torque Arm

### MINI Series

#### ■ F2S Type






| Part No. | Applicable Frame Size | A | B | C | D | E | F | G | H | I | Weight (g) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| TAF2S-12 | 12 | 43 | 24 | 37.5 | 7 | R7 | R9 | 3.2 | 8.4 | Ø7 | 75 |
| TAF2S-15 | 15 | 48 | 30 | 56.5 | 9 | R9 | R11 | 3.2 | 10.5 | Ø9 | 125 |

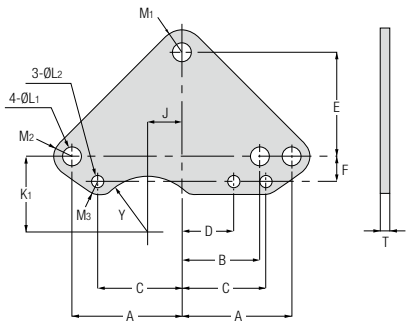
#### ● Torque Arm Specifications

| Material | Surface Treatment | Color |
|---|---|---|
| SS400 | Trivalent Chromate | White |

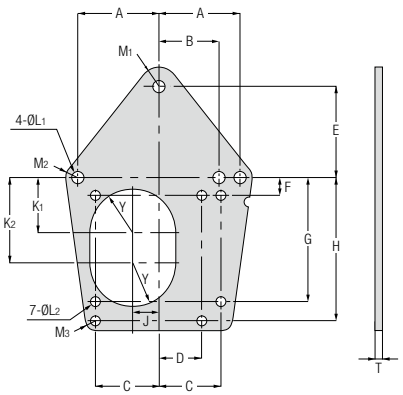
### MID Series

#### ■ FS Type

<Figure-1>




<Figure-2>

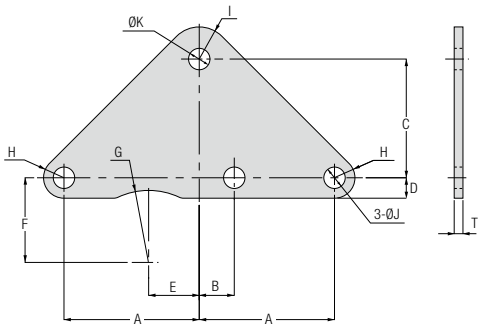



| Part No. | Applicable Frame Size | Figure | A | B | C | D | E | F | G | H | J | $K_1$ | $K_2$ | $L_1$ | $L_2$ | $M_1$ | $M_2$ | $M_3$ | Y | T | Weight (kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TA-25 | 25 | 1 | 63 | 47 | 47 | 31 | 61 | 16 | — | — | 19 | 44 | — | 11 | 6.5 | R15 | R10.5 | R7 | R34 | 4.5 | 0.3 |
| TA-30 | 30 | 1 | 70 | 52 | 53 | 35 | 70 | 17 | — | — | 20 | 50 | — | 11 | 9 | R15 | R12 | R9 | R39 | 6 | 0.5 |
| TA-35 | 35 | 2 | 82 | 62 | 64 | 44 | 94 | 18 | 126 | 146 | 26 | 56 | 88 | 13 | 9 | R18 | R12 | R10 | R43.5 | 6 | 1.2 |
| TA-45 | 45 | 2 | 102 | 72 | 80 | 50 | 110 | 22 | 152 | 182 | 32 | 70 | 104 | 15 | 11 | R20 | R15 | R11 | R51 | 9 | 3.0 |
| TA-55 | 55 | 2 | 129 | 93 | 97 | 61 | 160 | 32 | 190 | 226 | 39 | 90 | 132 | 18 | 13 | R25 | R20 | R13 | R70 | 9 | 4.8 |

#### ● Torque Arm Specifications

| Material | Surface Treatment | Color |
|---|---|---|
| SS400 | Trivalent Chromate | White |

## ■ F3S Type




| Part No. | Applicable Frame Size | Power | Applicable Reduction Ratio | A | B | C | D | E | F | G | H | I | J | K | T | Weight (kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TAF3S-20-2 | 20 | 0.2 kW | 1/5 to 1/30 | 53.5 | 23.5 | 52 | 10.5 | — | — | — | R10.5 | R11 | 11 | 9 | 3.2 | 0.1 |
| | | 0.1 kW | 1/5 to 1/60 | | | | | | | | | | | | | |
| TAF3S-25-2 | 25 | 0.4 kW | 1/5 to 1/30 | 60 | 27 | 61 | 10.5 | 16.5 | 43.5 | R37 | R10.5 | R15 | 11 | 9 | 3.2 | 0.2 |
| | | 0.2 kW | 1/5 to 1/60 | | | | | | | | | | | | | |
| TAF3S-25-3 | | 0.1 kW | 1/80 to 1/240 | 69.5 | 17.5 | 61 | 10.5 | 26 | 43.5 | R37 | R10.5 | R16.5 | 11 | 11 | 4.5 | 0.2 |
| TAF3S-30-2 | 30 | 0.75 kW | 1/5 to 1/30 | 69.5 | 26.5 | 70 | 10.5 | 21.5 | 48 | R41.5 | R10.5 | R15 | 11 | 11 | 4.5 | 0.3 |
| | | 0.4 kW | 1/5 to 1/60 | | | | | | | | | | | | | |
| TAF3S-30-3 | | 0.2 kW | 1/80 to 1/240 | 78 | 14 | 70 | 12 | 32 | 46 | R41.5 | R12 | R16.5 | 13.5 | 13.5 | 6 | 0.4 |
| TAF3S-35-2 | 35 | 1.5 kW | 1/5 to 1/30 | 80.5 | 31.5 | 94 | 12 | 24.5 | 56 | R46.5 | R12 | R18 | 13.5 | 13.5 | 6 | 0.6 |
| | | 0.75 kW | 1/5 to 1/60 | | | | | | | | | | | | | |
| TAF3S-35-3 | | 0.4 kW | 1/80 to 1/240 | 97 | 11 | 94 | 15 | 43 | 54 | R46.5 | R15 | R22.5 | 17.5 | 17.5 | 9 | 1.2 |
| TAF3S-45-2 | 45 | 1.5 kW | 1/5 to 1/60 | 103.5 | 42.5 | 110 | 15 | — | — | — | R15 | R20 | 17.5 | 17.5 | 9 | 1.4 |
| | | 2.2 kW | 1/5 to 1/30 | | | | | | | | | | | | | |
| TAF3S-45-3 | | 0.75 kW | 1/80 to 1/240 | 118 | 20 | 110 | 18.5 | 49 | 69 | R54 | R18.5 | R28.5 | 22 | 22 | 9 | 1.7 |

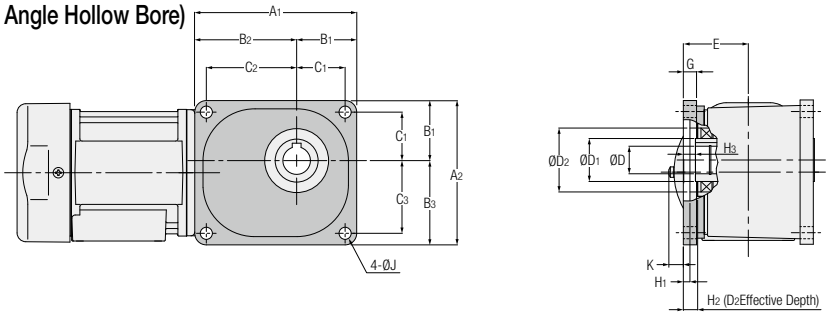
### ● Torque Arm Specifications

| Material | Surface Treatment | Color |
|---|---|---|
| SS400 | Trivalent Chromate | White |

# R Flange

## Induction Gearmotors

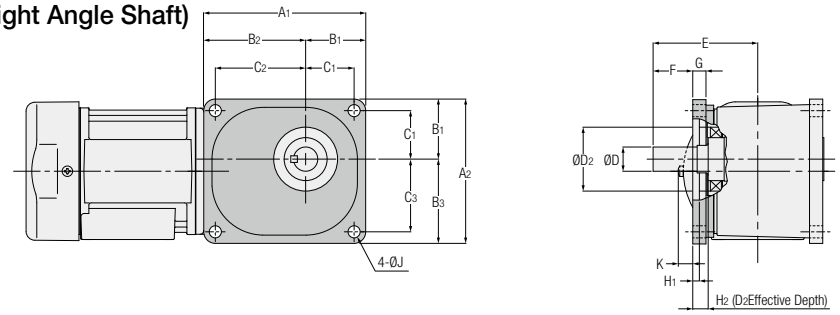
### ■ FS Type (Right Angle Hollow Bore)




| Part No. | Applicable Frame Size | $A_1$ | $A_2$ | $B_1$ | $B_2$ | $B_3$ | $C_1$ | $C_2$ | $C_3$ | E | G | $H_1$ | $H_2$ | $H_3$ | $D_2$ (H8) | Output Shaft | | J | K Note 1, Note 2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | $D_1$ | D (H8) | | |
| RF-25 | 25 | 147 | 131 | 54.5 | 92.5 | 76.5 | 44 | 82 | 66 | 59 | 12 | 6 | 12 | 11 | 58 | 39 | 25 | 11 | 13.5 (—) |
| RF-30 | 30 | 164 | 146 | 62 | 102 | 84 | 50 | 90 | 72 | 65 | 14 | 5 | 15 | 14 | 65 | 44 | 30 | 11 | 7.5 (7.5) |
| RF-35 | 35 | 188 | 168 | 68 | 120 | 100 | 56 | 108 | 88 | 70 | 16 | 3 | 18 | 17 | 72 | 49 | 35 | 13 | 2.5 (2.5) |
| RF-45 | 45 | 234 | 204 | 85 | 149 | 119 | 70 | 134 | 104 | 80 | 18 | 3 | 22 | 21 | 85 | 64 | 45 | 15 | — (—) |
| RF-55 | 55 | 298 | 262 | 110 | 188 | 152 | 90 | 168 | 132 | 98 | 22 | 6 | 17 | 16 | 100 | 79 | 55 | 18 | — (—) |

Note1: The K dimension is the value for gearmotor with brake.
Note2: The value in brackets is the IP65 gearmotor value.
Note3: For 1-Phase cases, please contact your nearest Sales Office or the CS Center.

### ■ FF Type (Right Angle Shaft)




| Part No. | Applicable Frame Size | $A_1$ | $A_2$ | $B_1$ | $B_2$ | $B_3$ | $C_1$ | $C_2$ | $C_3$ | E | G | $H_1$ | $H_2$ | $D_2$ (H8) | Output Shaft | | J | K Note 1, Note 2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | F | D (h6) | | |
| RF-25 | 22 | 147 | 131 | 54.5 | 92.5 | 76.5 | 44 | 82 | 66 | 95 | 12 | 6 | 12 | 58 | 36 | 22 | 11 | 13.5 (—) |
| RF-30 | 28 | 164 | 146 | 62 | 102 | 84 | 50 | 90 | 72 | 107 | 14 | 5 | 15 | 65 | 42 | 28 | 11 | 7.5 (7.5) |
| RF-35 | 32 | 188 | 168 | 68 | 120 | 100 | 56 | 108 | 88 | 124 | 16 | 3 | 18 | 72 | 54 | 32 | 13 | — (—) |
| RF-45 | 40 | 234 | 204 | 85 | 149 | 119 | 70 | 134 | 104 | 144 | 18 | 3 | 22 | 85 | 64 | 40 | 15 | — (—) |

Note1: The K dimension is the value for gearmotor with brake.
Note2: The value in brackets is the IP65 gearmotor value.

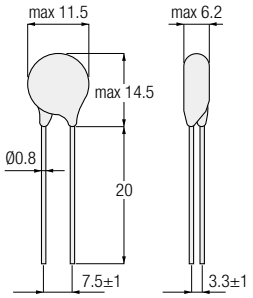
### ● R Flange Specifications

| Part No. | Applicable Frame Size | Weight (kg) | Material | Color |
|---|---|---|---|---|
| RF-25 | 25·22 | 0.5 | Aluminum Casting | Gray |
| RF-30 | 30·28 | 0.5 | Aluminum Die-cast | |
| RF-35 | 35·32 | 1.0 | Aluminum Casting | |
| RF-45 | 45·40 | 2.0 | | |
| RF-55 | 55 | 7.0 | Cast Iron | |

## Surge Suppressors for Brake Wiring

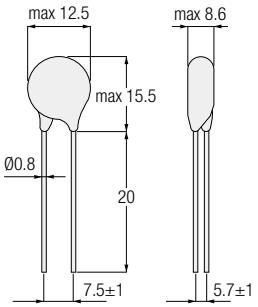
### ■ For 200 V Class Motors with a Brake (OP-ERZV10D471)


● Use a surge suppressor for the contact of a brake DC switching connection to extinguish sparks.




### ■ For 400 V Class Motors with a Brake (OP-ERZV10D911)


● Use a surge suppressor for the contact of a brake DC switching connection to extinguish sparks.



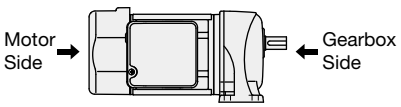
## Option Codes

We can deal with orders for specification changes and additional work as described below as options. Use options according to the usage of the product.
You can also select combinations of multiple options. For details, please refer to the table shown below.

| Gearhead Type | | | | | | Motor Type | | | | | | | Brake Specifications | Option | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Series | Mount | Frame Size | Shaft Arrangement | Reduction Ratio | – | Motor Type | Motor Specifications | Motor Power | Number of Phases | Supply Voltage | Standards | Terminal Box | Brake | Option | Option Code |
| G3 | L | 28 | N | 5 | – | M | D | 08 | T | N | N | T | B2 | X | AA |
| ① | ② | ③ | ④ | ⑤ | | ⑥ | ⑦ | ⑧ | ⑨ | ⑩ | ⑪ | ⑫ | ⑬ | ⑭ | ⑮ |

1. Add an “X” and a desired option code to the end of the model name when ordering.
2. If you order multiple options, they will be marked on the nameplate in the order shown in [Nameplate Notation Order] in the table below.
   [Example] If you have ordered AC switching A [AA], box position (top) [TZ], hole position (lower) [H6], encoder (100 P/R) [X0], the order of the option code following the option “X” of the model will be X0TZH6AA.
3. Available options differ depending on the model. For more information, please refer to the page detailing each option.
4. There are options that cannot be used in combination with others. For more information, please refer to the page detailing each option.

* For more information, please contact your nearest Sales Office or the CS Center.




### ● List of Option Codes

| page | Option Code | Description | Nameplate Notation Order |
|---|---|---|---|
| Motor rear special specifications | X6 | The motor will be shipped with the rear-side motor shaft extended. | 1 |
| | X0 | The motor will be shipped with an encoder (100 P/R) attached. | 2 |
| | X1 | The motor will be shipped with an encoder (1024 P/R) attached. | |
| | X7 | The motor will be shipped with a forced fan attached. | 3 |
| Terminal Box | CC | The motor will be shipped together with a cable gland for T Type terminal box. | 4 |
| | T3 | The position of the terminal box will be changed to the (right) when viewed from the motor side. | 5 |
| | T6 | The position of the terminal box will be changed to the (bottom) when viewed from the motor side. | |
| | T9 | The position of the terminal box will be changed to the (left) when viewed from the motor side. | |
| | TZ | The position of the terminal box will be changed to the (top) when viewed from the motor side. | |
| | H3 | The hole direction of the terminal box will be changed to the gearhead side. | 6 |
| | H6 | The hole direction of the terminal box will be changed to the (bottom). (Note 1) | |
| | HZ | The hole direction of the terminal box will be changed to the (top). (Note 1) | |
| Manual release lever | R1 | The position of the manual release lever will be changed to the (lower right) when viewed from the motor side. | 7 |
| | R3 | The position of the manual release lever will be changed to the (right) when viewed from the motor side. | |
| | R6 | The position of the manual release lever will be changed to the (bottom) when viewed from the motor side. | |
| | R7 | The position of the manual release lever will be changed to the (lower left) when viewed from the motor side. | |
| | R9 | The position of the manual release lever will be changed to the (left) when viewed from the motor side. | |
| | RZ | The position of the manual release lever will be changed to the (top) when viewed from the motor side. | |
| Brake wiring for built-in rectifier | AB | The rectifier will be built in the terminal box, and the motor will be shipped with AC switching B connected. | 8 |
| | AA | The rectifier will be built in the terminal box, and the motor will be shipped with AC switching A connected. | |
| | DC | The rectifier will be built in the terminal box, and the motor will be shipped with DC switching connected. | |
| Output Shaft | 40 | The output shaft will be changed to an output shaft with shaft end tapping. (The G3 type standard specification and the water-resistant carbon steel output shaft are provided with shaft end tapping as a standard item.) | 9 |
| | F2 | Changes the bore diameter of the right angle hollow bore from Ø25 to Ø20. | |
| | F3 | Changes the bore diameter of the right angle hollow bore from Ø30 to Ø25. | |
| | F4 | Changes the bore diameter of the right angle hollow bore from Ø35 to Ø30. | |
| | F5 | Changes the bore diameter of the right angle hollow bore from Ø45 to Ø35. | |
| | F6 | Changes the bore diameter of the right angle hollow bore from Ø45 to Ø40. | |
| | F7 | Changes the bore diameter of the right angle hollow bore from Ø55 to Ø45. | |
| | F8 | Changes the bore diameter of the right angle hollow bore from Ø55 to Ø50. | |

Note 1: The gearbox side hole and the motor side hole will always be set in the positions “3” and “9,” respectively, regardless of the position of the terminal box.
Note 2: Option parts, such as torque arms and surge suppressors, are not assigned with option codes.

## Motor Shaft Extension

The motor shaft can be extended from the rear end of the motor. If you require motor shaft extension, order it with the option code shown in the table below.
Since the rotary portion will be exposed during use, please take a measure to prevent any contact with it for safety. (Installing a cover, etc.)
For more details, please contact your nearest Sales Office or the CS Center.

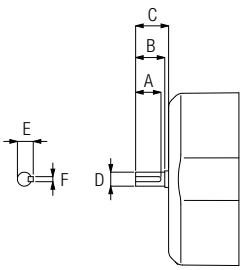
### ■ Target Models

Induction Gearmotors
0.4 kW to 2.2 kW: No Brake/Brakemotor (except water-resistant IP65)

| Option | Option Code |
|---|---|
| X | X6 |

**Model example: Standard specification G3L28N30-MM04TNNTB2 ⇒ Motor shaft extension G3L28N30-MM04TNNTB2XX6**

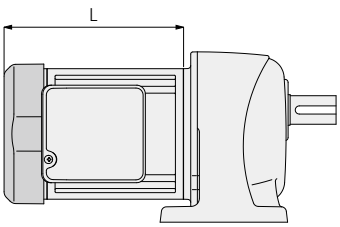
### ■ Motor Shaft Extension Specifications



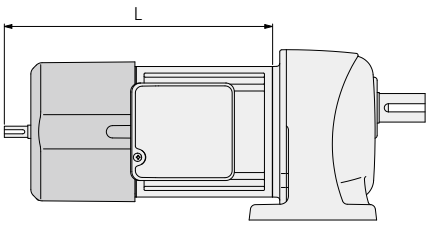

| Motor Power | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| 0.4 kW | 20 | 23 | 26 | Ø11h7 | 12.5 | 4 |
| 0.75 kW | 20 | 23 | 28 | Ø11h7 | 12.5 | 4 |
| 1.5 kW | 27 | 30 | 33 | Ø14h7 | 16 | 5 |
| 2.2 kW | 27 | 30 | 33 | Ø14h7 | 16 | 5 |

### ■ Product Outline Dimensions

When the shaft is extended, the overall length of the motor will increase For details, please refer to the table shown below.




[Figure-1]

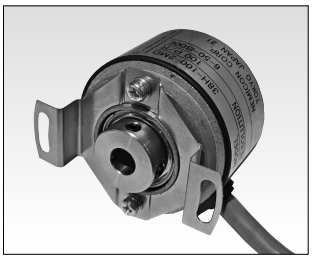



[Figure-2]

| Motor Power | Overall length (L) | | |
|---|---|---|---|
| | Standard type [Figure-1] | | Motor Shaft Extension [Figure-2] |
| | No Brake | Brakemotor | Common to No brake/brakemotor |
| 0.4 kW | 176 | 196 | 263 |
| 0.75 kW | 217 | 237 | 306 |
| 1.5 kW | 268.5 | 297.5 | 371.5 |
| 2.2 kW | 302 | 331 | 405 |

## Encoders

An encoder can be attached to the rear of the motor with the specifications shown in the table below. If you require this option, please place an order with the appropriate option code shown in the table below.



Encoder Appearance
* The encoder will not be visible on the appearance of the product because it will be contained in the fan cover.

### ■ Target Models

Induction Gearmotors

0.1 kW to 2.2 kW No brake/brakemotor (except water-resistant specification IP65)

Note 1: When it is necessary to adjust the gap of the brake or replace the brake unit, please contact us for repair.

### ■ Encoder Specifications

| Option | Option Code | Specification | |
|---|---|---|---|
| | | Number of Pulses | Output Method |
| X | X0 | 100 p/r | Line Drive |
| X | X1 | 1024 p/r | Line Drive |

Note 1: If you require an encoder with specifications not listed in the table, it may be manufactured as a custom order. Please consult us

**Model example: Standard specification G3L28N30-MM04TNNTB2 ⇒ With an encoder G3L28N30-MM04TNNTB2XX0**

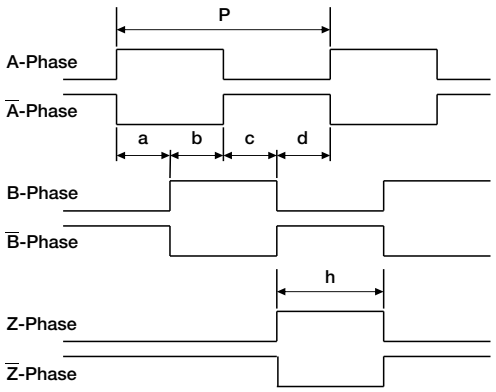
### ■ Electrical Specifications

| | |
|---|---|
| Supply Voltage | 4.5 to 13.2 VDC |
| Current Consumption | 30 mA MAX |
| Output Voltage | H level 2.5 V or more<br>L level 0.5 V or below |
| Maximum Draw-in Current | 20 mA |
| Maximum Response Frequency | 120 kHz |
| Rise and Fall Time | 100 ns MAX |

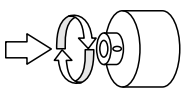
### ■ Connector Specifications (Hirose Electric DF3-9S-2C)

| Terminal No. | Color | Connection | Terminal No. | Color | Connection |
|---|---|---|---|---|---|
| 1 | Red | Vcc | 6 | Gray | Sig $\overline{B}$ |
| 2 | Black | OV | 7 | Yellow | Sig Z |
| 3 | Green | Sig A | 8 | Orange | Sig $\overline{Z}$ |
| 4 | Blue | Sig $\overline{A}$ | 9 | Black | Shield |
| 5 | White | Sig B | | | |

### ■ Waveform Specifications

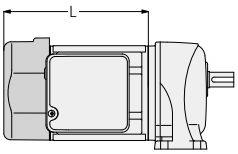



Signal A, B a, b, c, d = (P/4) ± (P/8)
Duty = (P/2) ± (P/4)
Signal Z (P/4) ≤ h ≤ (3P/4)

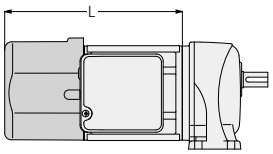


### ■ Product Appearance Dimensions

When an encoder is installed, the overall length of the motor will increase.
For details, please refer to the table shown below.




[Figure-1]




[Figure-2]

| Motor Power | Overall length (L) | | | Encoder Cable Effective Length |
|---|---|---|---|---|
| | Standard type [Figure-1] | | With Encoder [Figure-2] | |
| | No Brake | Brakemotor | Common to No brake/brakemotor | |
| 0.1 kW | 114 | 154 | 205.5 | 350 |
| 0.2 kW | 129 | 179.5 | 220.5 | 350 |
| 0.4 kW | 176 | 196 | 237 | 350 |
| 0.75 kW | 217 | 237 | 278 | 300 |
| 1.5 kW | 268.5 | 297.5 | 338.5 | 250 |
| 2.2 kW | 302 | 331 | 372 | 250 |

Note 1: The protective structure of the encoder is IP50. Please note that this protective structure is different from the protective structure marked on the nameplate.
Note 2: The product will be shipped with the encoder cable drawn out of the gap of the fan cover.
Note 3: Gearmotors with a motor power of 0.1 kW or 0.2 kW does not include the fan cover.

## Forced Fan

A forced fan can be attached to the rear of the motor with the specifications shown in the table below. If you require this option, please place an order with the appropriate option code shown in the table below.

### ■ Target Models

Induction Gearmotors

0.1 kW to 2.2 kW: No brake/brakemotor (except water-resistant specification IP65)

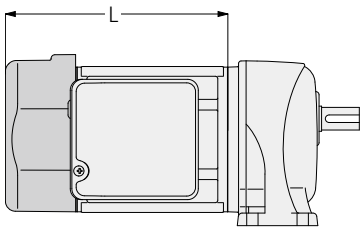
### ■ Forced Fan Specifications

| Option | Option Code | Specification | | | |
|---|---|---|---|---|---|
| | | Supply Voltage | Frequency | Speed | Rated Current |
| X | X7 | 200 VAC±10 % | 50 Hz | 2600 r/min | 0.05 A |
| | | 200 VAC±10 % | 60 Hz | 3000 r/min | 0.04 A |

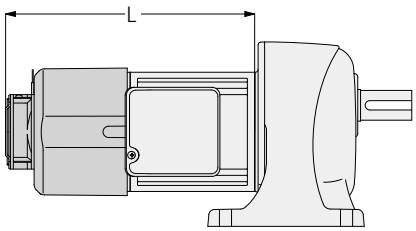
**Model example: Standard specification G3L28N30-MM04TNNTB2 ⇒ With forced fan G3L28N30-MM04TNNTB2XX7**

### ■ Product Outline Dimensions

When a forced fan is installed, the overall length of the motor will increase. For details, please refer to the table shown below.




[Figure-1]




[Figure-2]

| Power | Overall length (L) | | |
|---|---|---|---|
| | Standard type [Figure-1] | | With Forced Fan [Figure-2] |
| | No Brake | Brakemotor | Common |
| 0.1 kW | 114 | 154 | 236.5 |
| 0.2 kW | 129 | 179.5 | 251.5 |
| 0.4 kW | 176 | 196 | 268 |
| 0.75 kW | 217 | 237 | 309 |
| 1.5 kW | 268.5 | 297.5 | 369.5 |
| 2.2 kW | 302 | 331 | 403 |

Note 1: The protective structure of the forced fan is IP10. Please note that this protective structure is different from the protective structure marked on the nameplate.

Note 2: The motor will be shipped with the forced fan cable flied.

## Cable Glands

A gearmotor with a T type terminal box can be shipped together with an attachable cable gland. If you require this option, please place an order with the appropriate option code shown in the table below.

### ■ Target Models

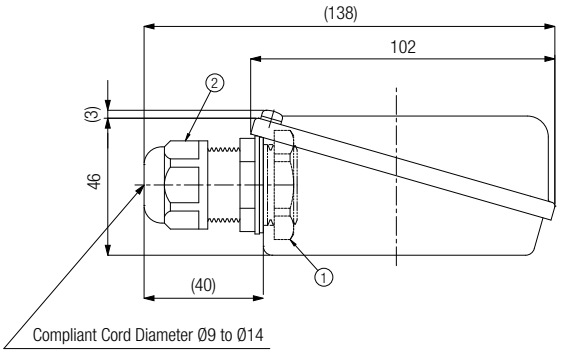
Induction Gearmotors
0.1 kW to 2.2 kW: All models with a T type terminal box

| Option | Option Code |
|---|---|
| X | CC |

**Model example: Standard specification G3L28N30-MM04TNNTB2 ⇒ With cable gland G3L28N30-MM04TNNTB2XCC**

### ■ Product Outline Dimensions and Specifications

#### ● With a terminal box attached




#### ■ Cable Gland Specifications

AVC Corporation of Japan (FGA26S-14B)
Body Material: Nylon 66 (UL94V-2)
IP Rating: IP68/5 atmospheric pressure
Conforming Standard: UL-C & US/CE
Color: Black

Wrench Size Lock/Seal: 33/27

#### ● Tightening Torques (Reference Values)

① Lock nut: 2.4 to 3.4 N·m
② Sealing nut: 1.8 to 2.5 N·m

Note 1: A cable gland will be shipped with the product. Attach the cable gland to the terminal box yourself.
Note 2: Please note that depending on the position of the terminal box and its hole direction, a cable gland may interfere with the peripheral parts when installed, and hinder mounting and wiring.
For more details, please contact your nearest Sales Office or the CS Center.

## Output Shaft Tapping (Threading)

The output shaft of the parallel shaft G3 Type is tapped to the dimensions shown in the table below (Note 1), but the output shafts of other types are not tapped. If you desire output shaft tapping, we will prepare an output shaft manufactured to the dimensions shown in the table below. Designate these dimensions wherever possible at the time of design. To order tapping, enter “X40” at the end of the model name.

Note 1: Water-resistant specification stainless steel output shafts are not tapped.

**Model example: Standard specification H2L22R30-MM02TNNTN ⇒ Output shaft with standard tapping H2L22R30-MM02TNNTNX40**

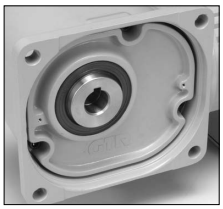
Note 2: The mark “●” in the table indicates a standard stock item. In addition, “▲” indicates that a lead time of about full 10 days is required.
Note 3: Water-resistant specification stainless steel output shafts and dimensions other than those shown in the table below are custom specifications.
Note 4: For lead time, prices, and other details, please contact your nearest Sales Office.

| Shaft Diameter (Frame Size) | Size × Pitch × Depth | G·VG Type (Parallel Shaft) | G3 Type (Parallel Shaft) | H·H2 Type (Right Angle Shaft) | | | F2F·FF·F3F Type (Right Angle Shaft) | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | L Shaft | R Shaft | T Shaft | L Shaft | R Shaft | T Shaft |
| 12/15 | M5 × 0.8 × 12 ℓ | ● | Not Available | ● | ● | ● | ▲ | ▲ | ▲ |
| 18 | M6 × 1.0 × 15 ℓ | ● | With Output Shaft Tapping | ● | ● | ● | ▲ | ▲ | ▲ |
| 22/28 | M8 × 1.25 × 20 ℓ | With Output Shaft Tapping | | ● | ● | ▲ | ● | ▲ | ▲ |
| 32/40 | M10 × 1.5 × 25 ℓ | | | ● | ● | ▲ | ● | ▲ | ▲ |
| 50 | M12 × 1.75 × 30 ℓ | Not Available | | ● | ● | ▲ | Not Available | Not Available | Not Available |

## Output Shaft Hole Diameter Custom Specifications

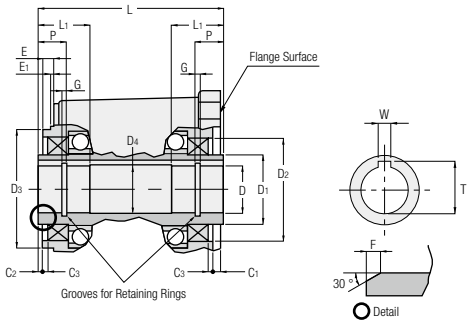
Output shafts with the internal diameters shown in the table below are also available for the FS and F3S types (right angle hollow bore).
Order a desired shaft diameter with the appropriate option code shown in the table below.

Note 1: It is necessary to examine the strength of the shaft to be inserted.
Note 2: Shafts for reduction ratio 1/5 cannot be manufactured.
Note 3: For lead time, prices, and other details, please contact your nearest Sales Office.



**Model name example: Standard specification F3S25N30-MM02TNNTN ⇒ Output shaft diameter Ø20 specification F3S25N30-MM02TNNTNXF2**

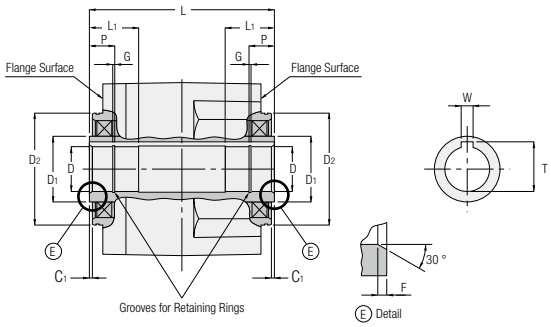
### ■ FS Type (Right Angle Hollow Bore)/Output Shaft Hole Diameter Custom Specifications




#### ● Right Angle Hollow Bore Detailed Dimensions

| Frame Size | Internal Diameter of Right Angle Hollow Bore | D (H8) | $D_1$ | $D_2$ (H8) | $D_3$ (h8) | $D_4$ | W | T | L | $L_1$ | P | $C_1$ | $C_2$ | $C_3$ | E | $E_1$ | F | G | Option Code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | Ø20 | Ø20 | Ø39 | Ø58 | Ø66 | Ø21 | 6 | 22.8 | 108 | 27 | 14 | 6 | 2 | 3 | 6 | 0 | 2 | 1.15 | F2 |
| 30 | Ø25 | Ø25 | Ø44 | Ø65 | Ø75 | Ø26 | 8 | 28.3 | 117 | 33 | 17 | 5 | 2 | 3 | 7 | 0 | 2 | 1.35 | F3 |
| 35 | Ø30 | Ø30 | Ø49 | Ø72 | Ø85 | Ø31 | 8 | 33.3 | 124 | 38 | 20 | 3 | 2 | 3 | 7 | 0 | 2 | 1.35 | F4 |
| 45 | Ø35 | Ø35 | Ø64 | Ø85 | Ø100 | Ø36 | 10 | 38.3 | 140 | 50 | 26 | 3 | 2 | 3 | 6 | 0 | 2 | 1.75 | F5 |
| | Ø40 | Ø40 | Ø64 | Ø85 | Ø100 | Ø41 | 12 | 43.3 | 140 | 50 | 26 | 3 | 2 | 3 | 6 | 0 | 2 | 1.95 | F6 |
| 55 | Ø45 | Ø45 | Ø79 | Ø100 | Ø120 | Ø46 | 14 | 48.8 | 181 | 61 | 32 | 5 | 2 | 5 | 10 | 2 | 2 | 1.95 | F7 |
| | Ø50 | Ø50 | Ø79 | Ø100 | Ø120 | Ø51 | 14 | 53.8 | 181 | 61 | 32 | 5 | 2 | 5 | 10 | 2 | 2 | 2.20 | F8 |

### ■ F3S Types (Right Angle Hollow Bore)/Output Shaft Hole Diameter Custom Specifications




#### ● Right Angle Hollow Bore Detailed Dimensions

| Frame Size | Internal Diameter of Right Angle Hollow Bore | D (H8) | $D_1$ | $D_2$ (h7) | W | T | L | $L_1$ | P | $C_1$ | F | G | Option Code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | Ø20 | Ø20 | Ø39 | Ø66 | 6 | 22.8 | 118 | 27 | 14 | 2 | 2 | 1.15 | F2 |
| 30 | Ø25 | Ø25 | Ø44 | Ø75 | 8 | 28.3 | 124 | 33 | 17 | 2 | 2 | 1.35 | F3 |
| 35 | Ø30 | Ø30 | Ø49 | Ø85 | 8 | 33.3 | 142 | 38 | 20 | 2 | 2 | 1.35 | F4 |
| 45 | Ø35 | Ø35 | Ø64 | Ø100 | 10 | 38.3 | 168 | 50 | 26 | 2 | 2 | 1.75 | F5 |
| | Ø40 | Ø40 | Ø64 | Ø100 | 12 | 43.3 | 168 | 50 | 26 | 2 | 2 | 1.95 | F6 |