

## Accessories

### Couplings

#### Coupling Materials and Characteristics

OMRON provides two types of couplings for different application conditions: Resin and metal. Select the best type for the application.

As a general rule, use metal couplings for high resolution and resin couplings for low resolution. Even for applications requiring relatively low resolution, a metal coupling will provide more reliability in applications involving rapid acceleration/deceleration or for Encoders with high starting torque.

#### Comparison of Specifications for 6-mm Shafts

Material Machine specification	Resin (standard type)	Metal (aluminum, helical)
<b>Eccentricity (mm)</b>	0.5	0.15
<b>Eccentricity (degrees)</b>	6	3
<b>Deviation in shaft direction (mm)</b>	±0.4	±0.15
<b>Allowable torque (N·m)</b>	0.8	1.6
<b>Torsion rigidity (Nm/rad)</b>	7	28
<b>Moment of inertia (kg·m<sup>2</sup>)</b>	$1.2 \times 10^{-7}$	$6 \times 10^{-7}$
<b>Weight (g)</b>	4	12

#### Characteristics

Material	Advantages	Disadvantages
<b>Resin (standard type)</b>	<ul style="list-style-type: none"> <li>Low cost.</li> <li>Easy shaft alignment when mounting.</li> <li>Lightweight and low moment of inertia, placing a smaller load on the drive system.</li> </ul>	<ul style="list-style-type: none"> <li>Low torsion rigidity and thus not suitable for high resolution.</li> <li>Mounting is possible even if the shafts are greatly misaligned, which can cause damage from fatigue over long periods of application.</li> </ul>
<b>Metal (aluminum, helical)</b>	<ul style="list-style-type: none"> <li>High torsion rigidity and thus suitable for high resolution.</li> <li>Transmitted allowable torque is large.</li> </ul>	<ul style="list-style-type: none"> <li>High cost.</li> <li>Heavy and thus place a large load on the drive system.</li> <li>The allowable shaft misalignment is small, so accurate positioning is required when mounting.</li> </ul>

#### Coupling Suitability Table

○ : Suitable and provided with product, Δ: Suitable and sold separately, ---: Not suitable.

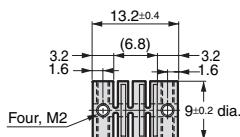
Couplings Rotary Encoder Model/shaft dia.	Specification Shaft interior (tolerance *) exterior dia. Model	Resin, standard type					Resin, different end diameter		Metal		
		2 dia. (Height: 8), 9 dia.	4 dia. (Height: 8), 13 dia.	6 dia. (Height: 8), 15 dia.	8 dia. (Height: 8), 19 dia.	10 dia. (Height: 8), 22 dia.	6 dia., 8 dia., (Height: 8), 19 dia.	6 dia., 10 dia., (Height: 8), 22 dia.	6 dia. (Height: 8), 19.1 dia.	10 dia. (Height: 8), 25.4 dia.	
E6A2-C 4 dia.		---	○	---	---	---	---	---	---	---	
E6B2-C 6 dia.		---	---	○	---	---	Δ	Δ	Δ	---	
E6C2-C 6 dia.		---	---	Δ	---	---	Δ	Δ	Δ	---	
E6C3-C 8 dia.		---	---	---	Δ	---	Δ	---	---	---	
E6D-C 6 dia.		---	---	○	---	---	Δ	Δ	Δ	---	
E6F-C 10 dia.		---	---	---	---	Δ	---	Δ	---	Δ	
E6H-C Hollow shaft interior dia.: 8 mm		Hollow-shaft Model; Coupling not required.									
E6J-C 2 dia.		○	---	---	---	---	---	---	---	---	
E6C-N 6 dia.		---	---	Δ	---	---	Δ	Δ	Δ	---	
E6CP-A 6 dia.		---	---	○ Sold separately only for E6CP- AG5C-C.	---	---	Δ	Δ	Δ	---	
E6C3-A 8 dia.		---	---	---	Δ	---	Δ	---	---	---	
E6F-A 10 dia.		---	---	---	---	---	○ Only Pre-wired Models	---	Δ	---	
E6J-A 4 dia.		---	○	---	---	---	---	---	---	---	

\*Tolerance conforms to JIS standard: JIS B 0401. → Refer to page 2.

(Unit: mm)

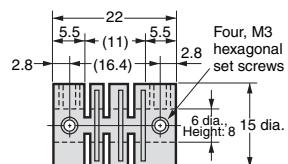
**Coupling Dimensions**

Tolerance class IT16 applies to dimensions in this datasheet unless otherwise specified.

**E69-C02B**

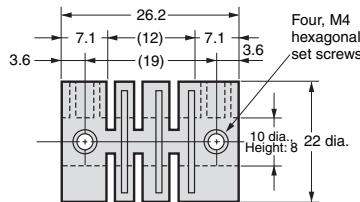
Material: Glass-reinforced PBT

Applicable model: E6J-C

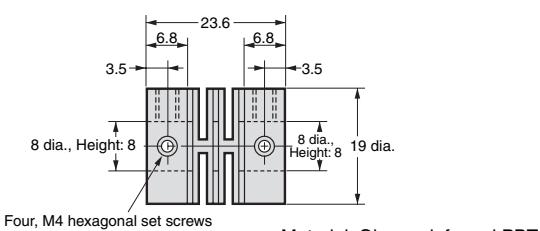
**E69-C06B**

Material: Glass-reinforced PBT

Applicable model: E6B2-C, E6C2-C, E6D-C, E6C-N, E6CP-A

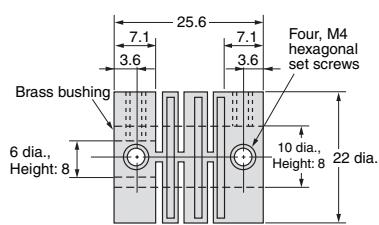
**E69-C10B**

Material: Glass-reinforced PBT

**E69-C08B**

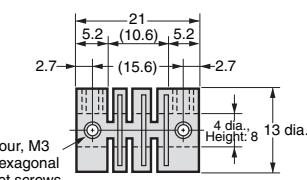
Material: Glass-reinforced PBT

Applicable model: E6C3-A, E6C3-C

**E69-C610B****Model with Different End Diameter**

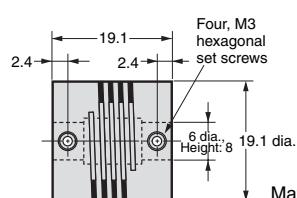
Material: Glass-reinforced PBT

Applicable model: E6B2-C, E6C2-C, E6D-C, E6F-C, E6C-N, E6CP-A, E6F-A

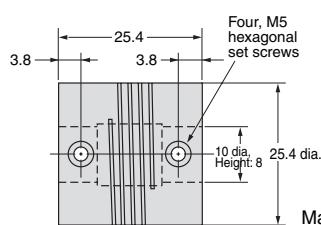
**E69-C04B**

Material: Glass-reinforced PBT

Applicable model: E6A2-C, E6J-A

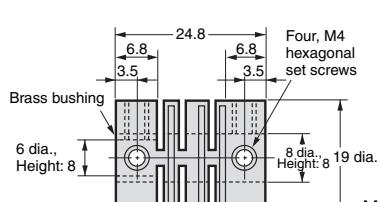
**E69-C06M**

Material: Extra-super duralumin

**E69-C10M**

Material: Extra-super duralumin

Applicable model: E6F-C, E6F-A

**E69-C68B****Model with Different End Diameter**

Material: Glass-reinforced PBT

Applicable model: E6B2-C, E6C2-C, E6C3-C, E6D-C, E6C-N, E6CP-A, E6C3-A

Standard hole dimensions (mm)		Tolerance (μm)
Min.	Max.	Height: 8
---	3	+14 0
3	6	+18 0
6	10	+22 0

## Flanges and Servo Mounting Brackets

## Flange and Servo Mounting Bracket Suitability Table

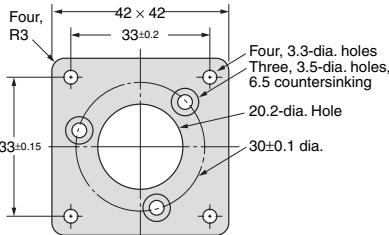
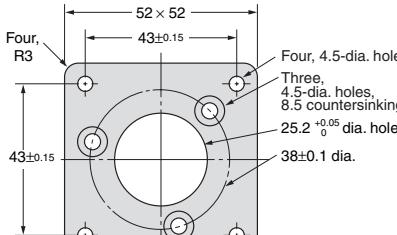
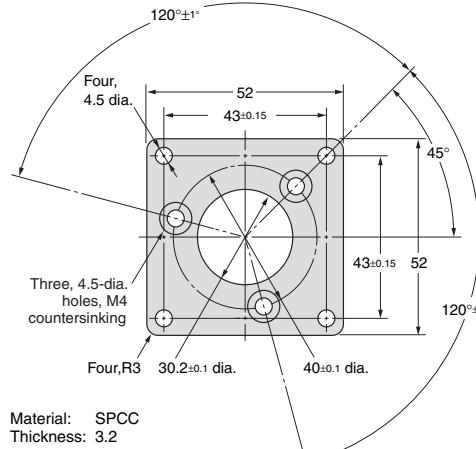
○: Suitable and provided with product, Δ: Suitable and sold separately, ---: Not suitable.

Rotary Encoder Model	Type Model Remarks	Flange						Servo Mounting Bracket	
		E69-FBA	E69-FCA	E69-FCA03	E69-FBA02	E69-FCA02	E69-FCA04	E69-1	E69-2
					E69-2 Servo Mounting Bracket provided.				
E6A2-C		---	---	---	---	---	---	○ Provided with the E6A2-CWZ.	---
E6B2-C	Δ	---	---	---	Δ	---	---	---	Δ
E6C2-C	---	Δ	---	---	---	Δ	---	---	Δ
E6C3-C	---	---	Δ	---	---	---	Δ	---	Δ
E6D-C	---	---	---	---	---	---	---	---	○
E6F-C	---	---	---	---	---	---	---	---	Δ
E6H-C		Hollow-shaft Model; Flange not required.							
E6C-N	---	Δ	---	---	---	Δ	---	---	Δ
E6CP-A	---	---	---	---	---	---	---	---	○
E6C3-A	---	---	Δ	---	---	---	Δ	---	Δ
E6F-A	---	---	---	---	---	---	---	---	○

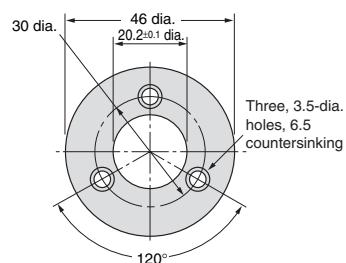
## Flange Dimensions

(Unit: mm)

Tolerance class IT16 applies to dimensions in this datasheet unless otherwise specified.

E69-FBA	E69-FCA	E69-FCA03
 <p>Material: SPCC Thickness: 3.2 Applicable model: E6B2-C</p>	 <p>Material: SPCC Thickness: 3.2 Applicable model: E6C2-C, E6C-N</p>	 <p>Material: SPCC Thickness: 3.2 Applicable model: E6C3-A, E6C3-C</p>

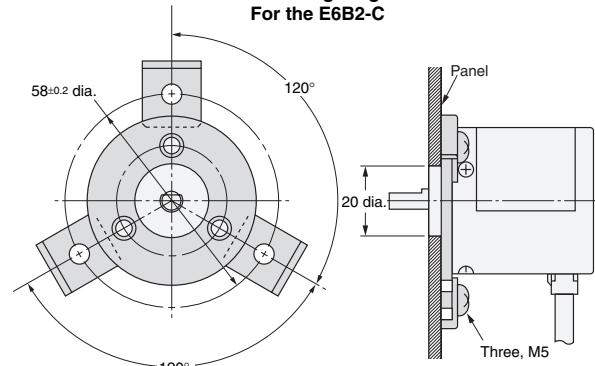
## E69-FBA02



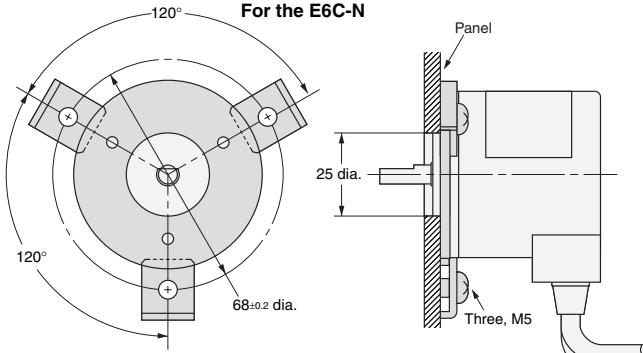
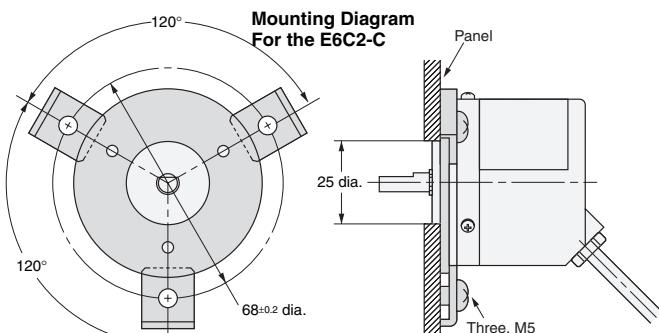
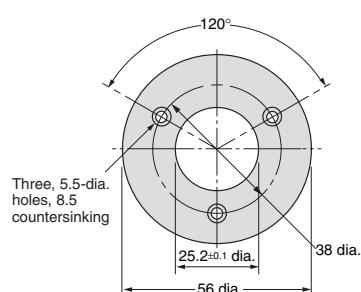
Material: SPCC  
Thickness: 3.2

Applicable model: E6B2-C

## Mounting Diagram For the E6B2-C



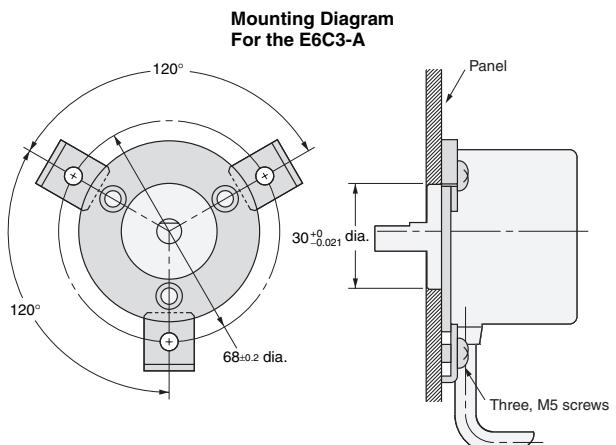
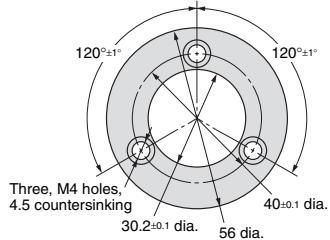
## E69-FCA02



Material: SPCC  
Thickness: 3.2

Applicable model: E6C2-C, E6C-N

## E69-FCA04



Material: SPCC  
Thickness: 3.2

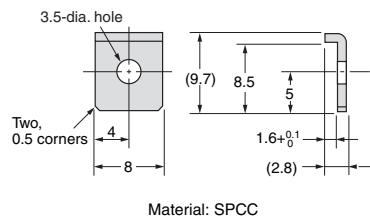
Applicable model: E6C3-C, E6C3-A

## Servo Mounting Bracket Dimensions

(Unit: mm)

Tolerance class IT16 applies to dimensions in this datasheet unless otherwise specified.

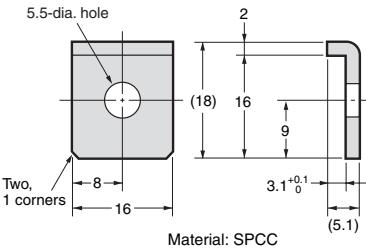
### E69-1 (Three brackets in a set.)



Applicable model: E6A2-CWZ

Material: SPCC

### E69-2 (Three brackets in a set.)



Applicable model:  
E6B2-C, E6C2-C,  
E6C3-CWZ□H, E6D-C,  
E6F-C, E6C-N, E6CP-A,  
E6C3-A, E6F-A

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