

2-1 System Design

⚠ WARNING Take safety measures outside the Cam Positioner to ensure safety for the entire system in the event of Cam Positioner failure or error caused by factors external to the Cam Positioner.
Faulty operation may result in a serious accident.

- Emergency stop circuits, interlock circuits, limit circuits, and similar safety measures must be included in control circuits outside the Cam Positioner.
- The Cam Positioner turns OFF all outputs when its self-diagnostic function detects an error (ERROR is OFF), when TRIG input turns ON, or when RESET input turns ON. Take safety measures outside the Cam Positioner to ensure safety for the entire system in such an event.
- The Cam Positioner output may remain ON or OFF due to damage to an output transistor or for some other reason. Take safety measures outside the Cam Positioner to ensure safety for the entire system in such an event.

2-1-1 Selecting the Resolver

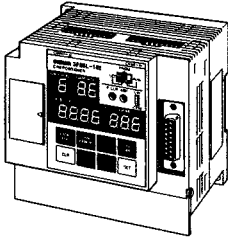
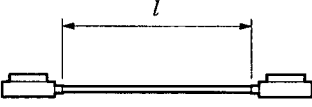
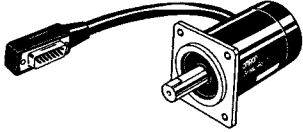
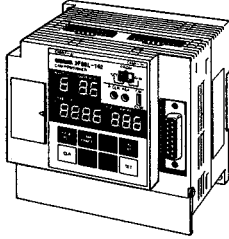
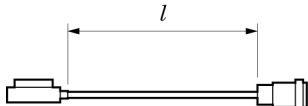
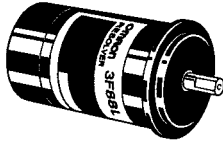
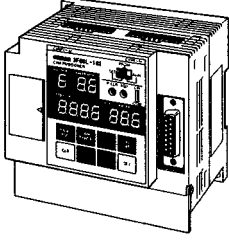
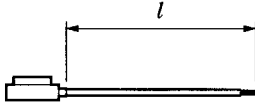

There are four Resolver models available. Select the Resolver suitable for the application.

■ Resolvers

Type	Large-diameter	High-torque	Connector	Lead-wire
Model	3F88L-RS17	3F88L-RS17T	3F88L-RS15	3F88L-RS15W
Axle diameter	10 mm		6 mm	
Rated axle load	Thrust load: 196 N max. Radial load: 196 N max.		Thrust load: 98N max. Radial load: 98 N max.	
Total length	101 mm	110 mm	154 mm	97 mm
Attachment method	Flange		Connected to the servo.	
Friction torque	12 mN • m max.	49 to 147 mN • m	2.9 mN • m max.	
Connection to Cam Positioner	Shown in diagram A.		Shown in diagram B.	Shown in diagram C.

Note High-torque Resolvers have oil seals.

■ Cam Positioner and Resolver Configuration

<p>A</p>	 <p>3F88L-160 or 3F88L-162 Cam Positioner</p>	 <p>3F88L-CR□□□C Resolver Extension Cable</p>	<p>3-m Plug-in cable</p>  <p>3F88L-RS17/-RS17T Resolver</p>
<p>B</p>	 <p>3F88L-160 or 3F88L-162 Cam Positioner</p>	 <p>3F88L-CR□□□NA Resolver Cable</p>	<p>Connector type</p>  <p>3F88L-RS15 Resolver</p>
<p>C</p>	 <p>3F88L-160 or 3F88L-162 Cam Positioner</p>	 <p>3F88L-CR□□□SA Resolver Cable</p>	<p>35-cm Separate wire plug-in cable</p>  <p>3F88L-RS15S Resolver</p>

Note 1. 3F88-RS17 and 3F88-RS17T Resolvers have 3-m cables. Use the 3F88L-CR□□□C Resolver Extension Cable if more cable is required.

Note 2. The □□□ in the Extension Cable model number indicates the length of the Extension Cable. For example, the 3F88L-CR010C Extension Cable is 10 m in length.

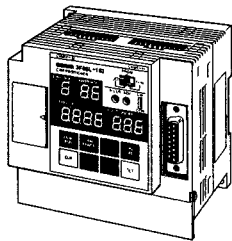
Note 3. The distance between the Cam Positioner and the Resolver can be up to 100 m.

2-1-2 Selecting the Output Device

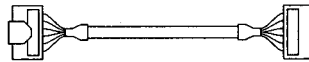
Select the device and connection method for ON/OFF outputs from the Cam Positioner. (Refer to 2-3 *Wiring* for information on connecting output devices.)

■ For Relay Output

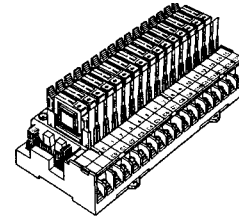
Use an I/O Block for relay output.



3F88L-160 or 3F88L-162
Cam Positioner



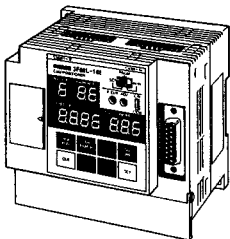
3F88L-CG□□□N
Cam Output Cable



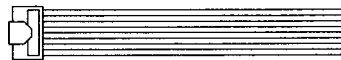
G7TC-OC16
I/O Block

■ For Transistor (Open Collector) Output

Use the outputs straight from the Cam Output Cable.



3F88L-160 or 3F88L-162
Cam Positioner

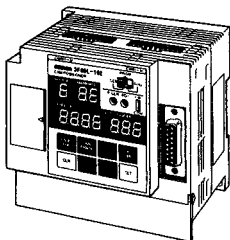


3F88L-CG□□□S
Cam Output Cable

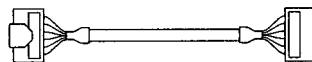
Open collector output

■ For Mostly Relay Output with Some Open Collector Output

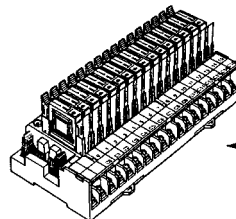
Use an I/O Block and use an Output Short-circuit Module to give some open collector output.



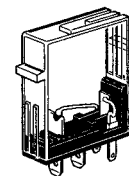
3F88L-160 or 3F88L-162
Cam Positioner



3F88L-CG□□□N
Cam Output Cable



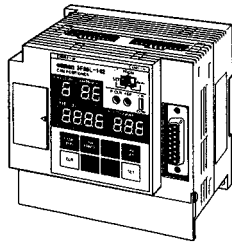
G7TC-OC16
I/O Block



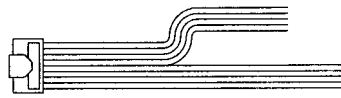
Output
Short-circuit
Module

■ To Display Present Angles and Other Data on a Display Unit

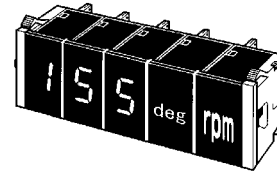
Connect a M7E or M7F Display Unit to the Cam Output Cable.



3F88L-160 or 3F88L-162
Cam Positioner



3F88L-CG□□□S
Cam Output Cable



M7E or M7F Display Unit

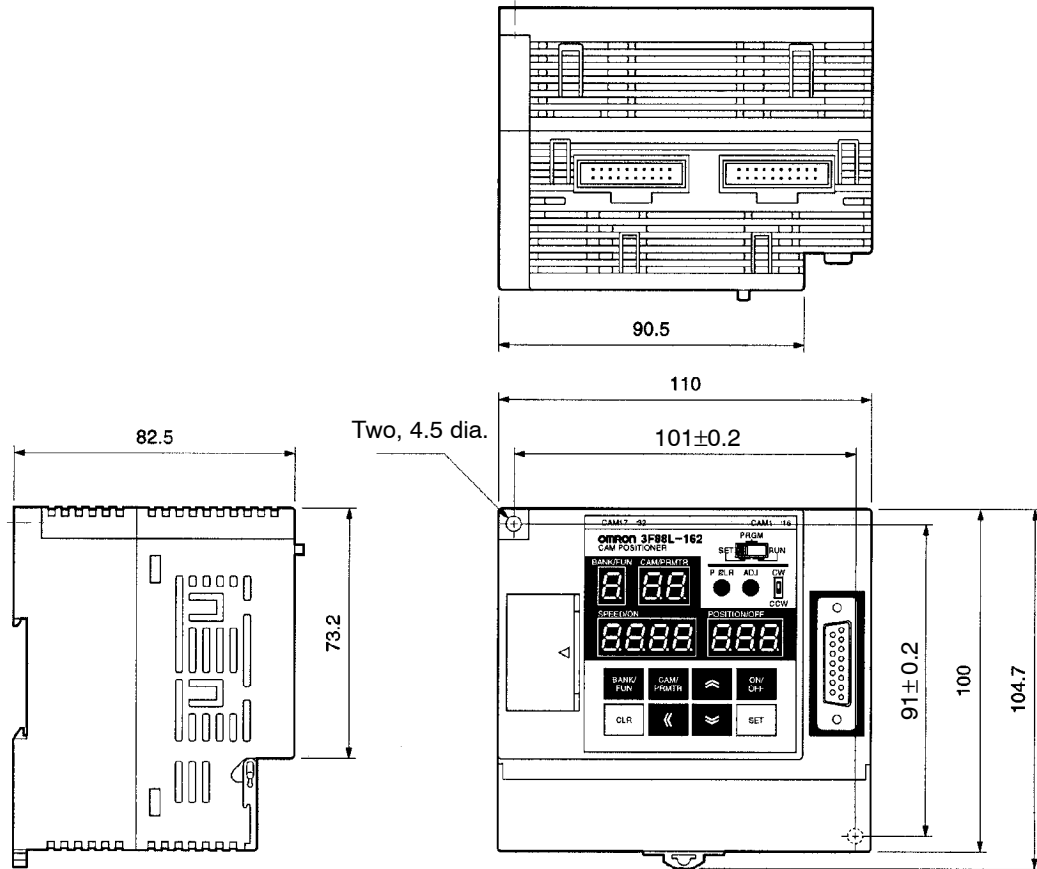
Note Parameters must be set to output present values. The present value output and cam output terminals will be shared which means that some cam output signals can no longer be used.

2-2 Installation

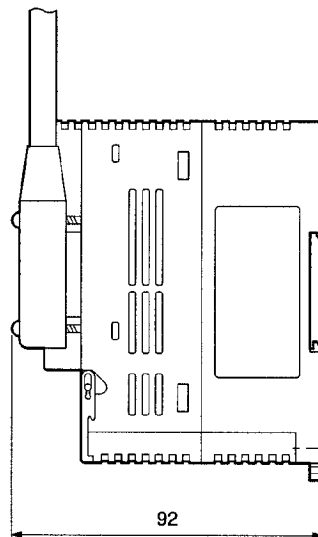
2-2-1 External Dimensions

Note All units are in millimeters unless otherwise indicated.

■ 3F88L-160 and 3F88L-162 Cam Positioners

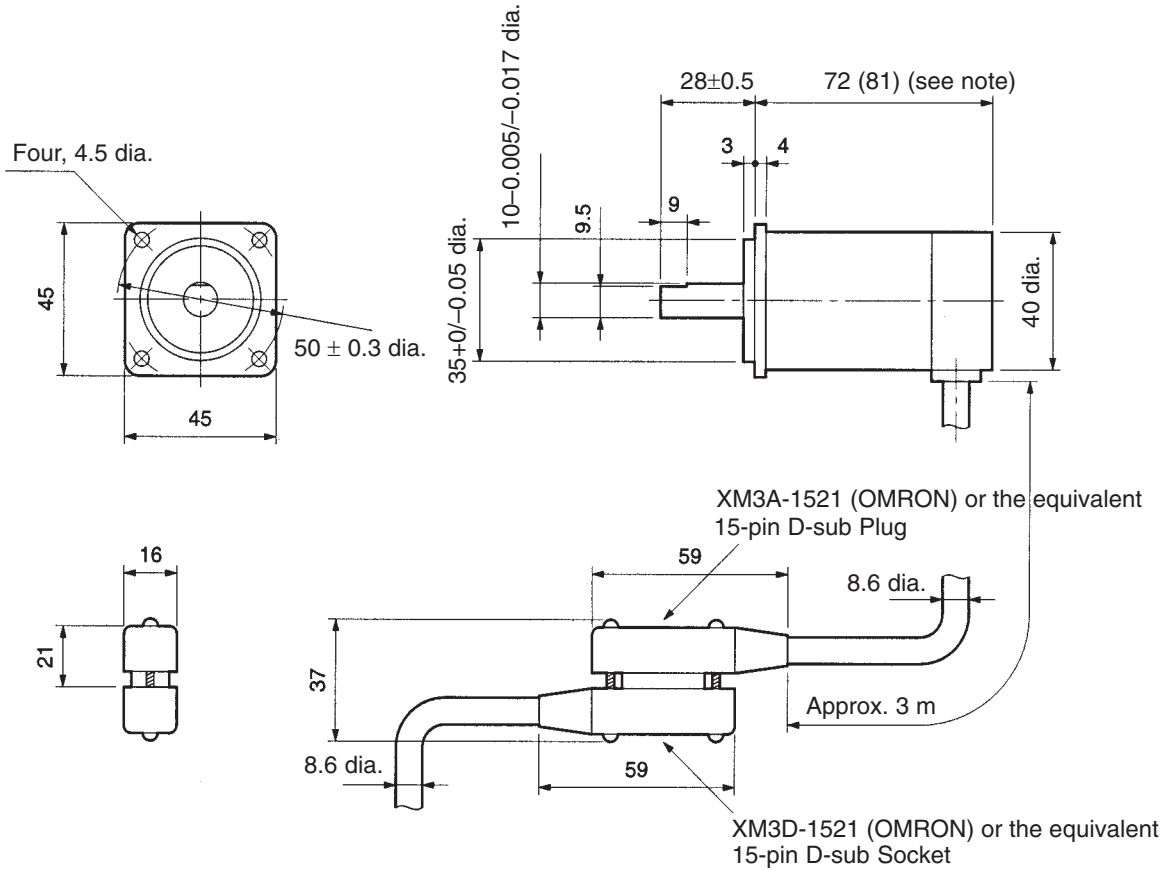


- When the Resolver Cable is connected



■ Resolvers

● 3F88L-RS17 and 3F88L-RS17T



Note The dimensions in parentheses are for the 3F88L-RS17T Resolver.

● 3F88L-RS15

