OMRON

Cam Positioner

H8PR

Economical Cam Positioner Does the Work of Up to 24 Cam Switches

- Easy replacement of mechanical cam switches with absolute encoder input
- Control outputs can be programmed to turn ON/OFF in 1° increments
- A single control output can be programmed to turn ON/OFF up to 10 times
- Quick response time of 0.2 ms (5 kHz) max.
- Equipped with useful functions for switching encoder rotation direction and designating the point of origin
- Easy-to-read LED display
- Built-in battery backs up program memory

Ordering Information

Standard stock products are shown in bold in the Part Number Index.

■ CAM POSITIONERS

Number of control outputs	8 points		16 points		24 points	
Output configuration	NPN	PNP	NPN	PNP	NPN	PNP
Part number	**H8PR-8**	**H8PR-8P**	**H8PR-16**	**H8PR-16P**	**H8PR-24**	**H8PR-24P**

■ ABSOLUTE ENCODER

Description	Part number
Metal body, 2 m (6.56 ft.) cable	**E6F-AB3C-C**

■ ACCESSORIES

Description	Part number
Shaft coupler for E6F encoder, 10 mm shaft diameter	**E69-C10B**
Encoder extension cable, 5 m (16.4 ft.) length	**E69-DF5**

Functions

Function	Description
Encoder rotational direction	Clockwise and counterclockwise, selectable
Encoder origin compensation	-179° to +180°
Shaft rotation angle	Can be set in units of 1°. One control output can be programmed to turn ON/OFF up to 10 times.
TEACH function	Angle at which control outputs are turned ON/OFF and point of origin can be registered in memory directly from the encoder.
Monitor contents	Present value display with 14 mm (0.55 in.) character height, output status indicators, settings display, set cam number display, mode display, revolution display, operation step display

Specifications

Part number		H8PR-❑	H8PR-❑P
Supply voltage		100 to 240 VAC, 50/60 Hz; 90 to 110% of rated voltage in operation	
Power consumption		Approx. 10 W at 240 VAC, 50 Hz	
Encoder input	Type	Omron's E6F-AB3C-C absolute rotary encoder	
	Response speed	5 kHz (0.2 ms) at 833 rpm of encoder shaft Adjustable to 0.5, 1, 2, 3, 4, or 5 kHz Built-in error detection function	
INHIBIT input	Function	Input via contacts or transistor (selectable) and turns OFF all control outputs	
	Response speed	Contact input: 20 ms Solid-state input: 5 ms	
Forced RUN	Function	Input when FORCED RUN and 0V (or COM) terminals are short-circuited and protects program from being modified.	
Output type		NPN open collector transistor	PNP open collector transistor
Cam outputs	Number	8, 16 or 24	
	Rating	100 mA max., 30 VDC; residual voltage 2 V max.	
RUN output	Number	1; Turns ON in RUN and OFF in case of error	
	Rating	100 mA max., 30 VDC; residual voltage 2 V max.	
Output response time		4 or 5 kHz encoder response frequency: 0.3 ms max. 3 kHz encoder response frequency: 0.35 ms max. 2 kHz encoder response frequency: 0.5 ms max. 1 kHz encoder response frequency: 1.1 ms max. 0.5 kHz encoder response frequency: 1.5 ms max.	
Display type		LED	
Materials		Plastic case	
Mounting		Surface mounting	
Memory backup		Battery, 10 years at 25°C	
Connections		Screw terminals for outputs; connector socket for encoder	
Weight		Approx. 1.5 kg (3.3 lbs.)	
Approvals	UL	Recognized, File Number E41515	
	CSA	Certified, File Number LR22310	
Ambient temperature	Operating	-10° to 55°C (14° to 131°F)	
	Storage	-25° to 65°C (-13° to 149°F)	
Ambient humidity		35 to 85% RH	
Vibration resistance	Malfunction	10 to 55 Hz, 0.5-mm amplitude for 10 minutes	
	Mechanical	10 to 55 Hz, 7.5 mm amplitude for 2 hours	
Shock resistance	Malfunction	Approx. 10 G	
	Mechanical	Approx. 30 G	
Insulation resistance		100 MΩ minimum at 500 VDC between current-carrying terminal and non-current-carrying metal part	
Dielectric strength		1,500 VAC, 50/60 Hz for 1 minute between current-carrying part and non-current-carrying metal part	

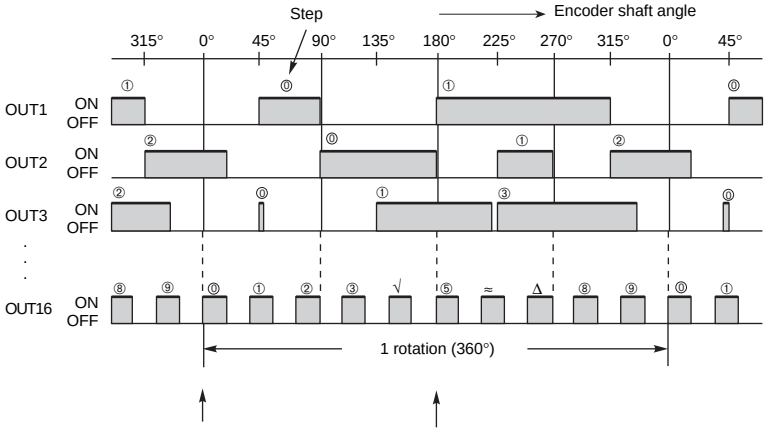
■ TIMING CHART

The H8PR Rotary Positioner accepts rotation angle signal input from the Omron E6F-AB3C-C Absolute Rotary Encoder which indicates the rotation angle of the encoder shaft. Each control output of the Rotary Positioner can be programmed to turn ON or OFF at a fixed angle of the encoder shaft.

Program example

Step	0		1		2		...	9	
ON/ OFF Output	ON	OFF	ON	OFF	ON	OFF	...	ON	OFF
OUT1	45°	90°	180°	315°	—	—	...	—	—
OUT2	90°	180°	225°	270°	315°	18°	...	—	—
OUT3	44°	45°	135°	220°	225°	340°	...	—	—
...	...	...	...	...	...	...	...	...	...
OUT16	0°	18°	36°	54°	72°	90°	...	324°	342°

Operation example

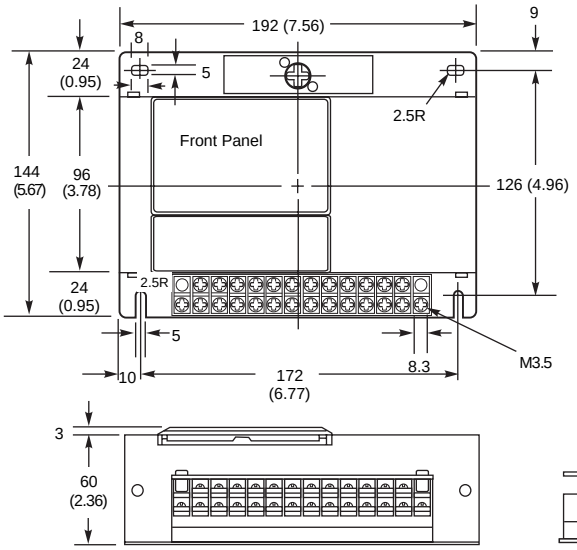


Can be programmed from 0°. One control output can be programmed to turn ON/OFF up to 10 times.

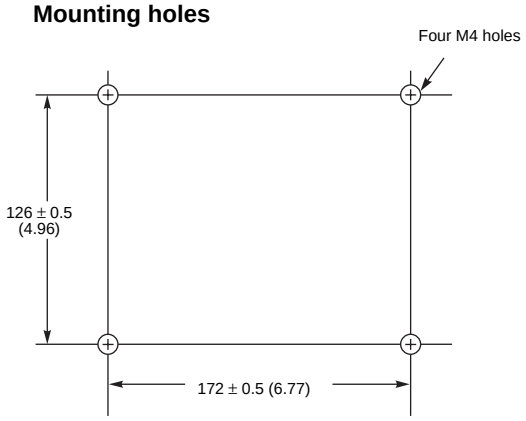
Dimensions

Unit: mm (inch)

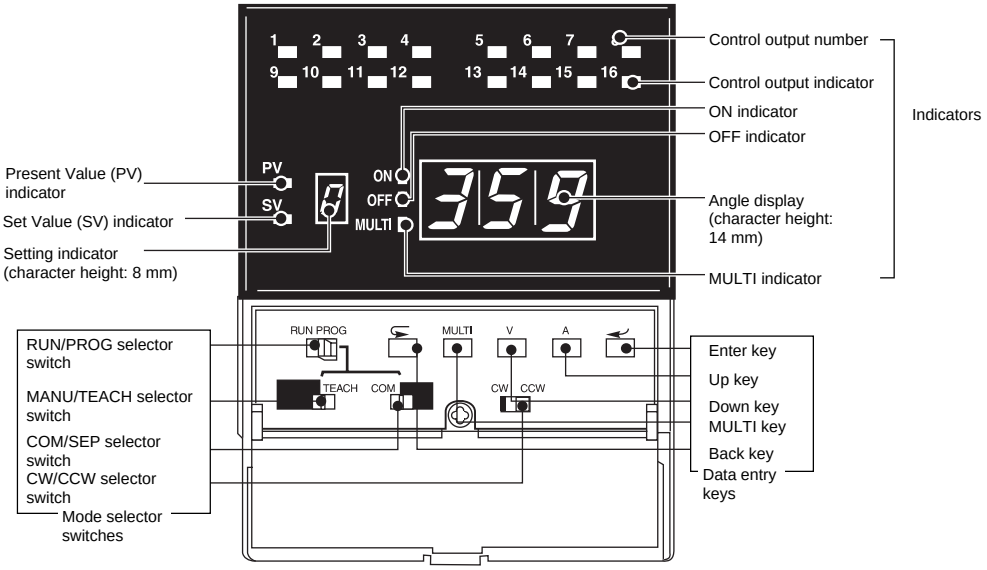
■ CAM POSITIONERS



Mounting holes

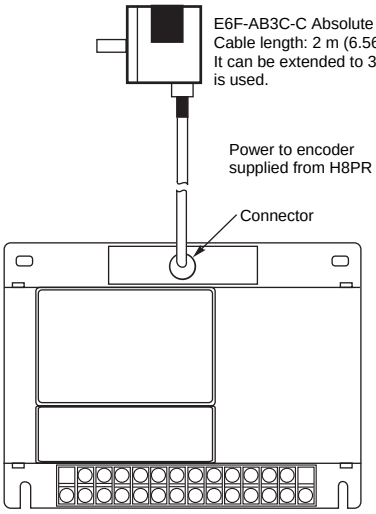


Nomenclature



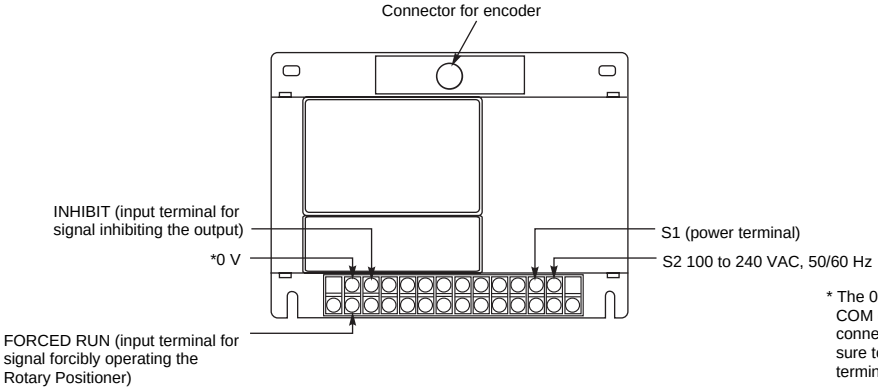
Connections

■ ENCODER INPUT CONNECTION



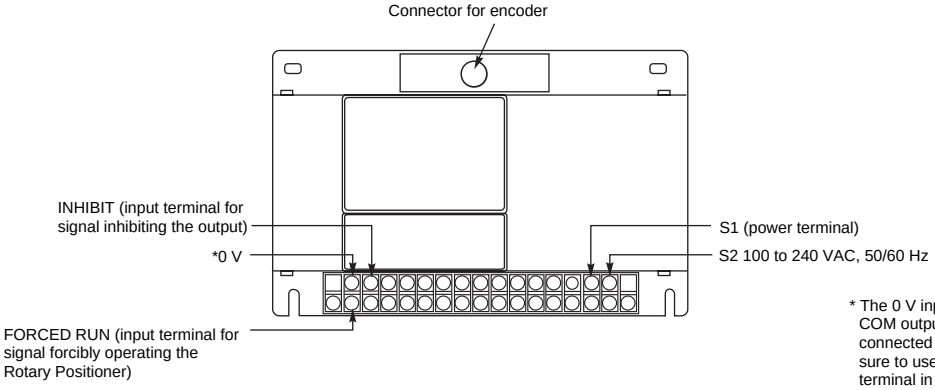
■ INPUT TERMINAL ARRANGEMENT

H8PR-8, 16



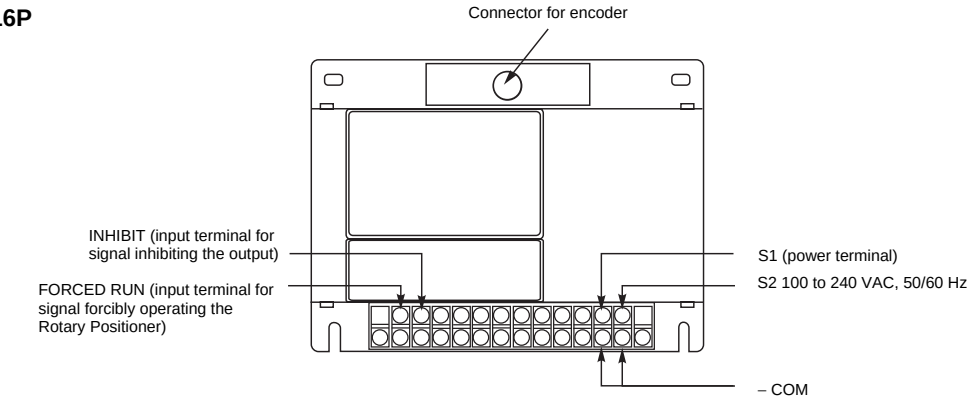
* The 0 V input terminal and the COM output terminal are connected internally; however, be sure to use 0 V as the common terminal in the input circuit.

H8PR-24

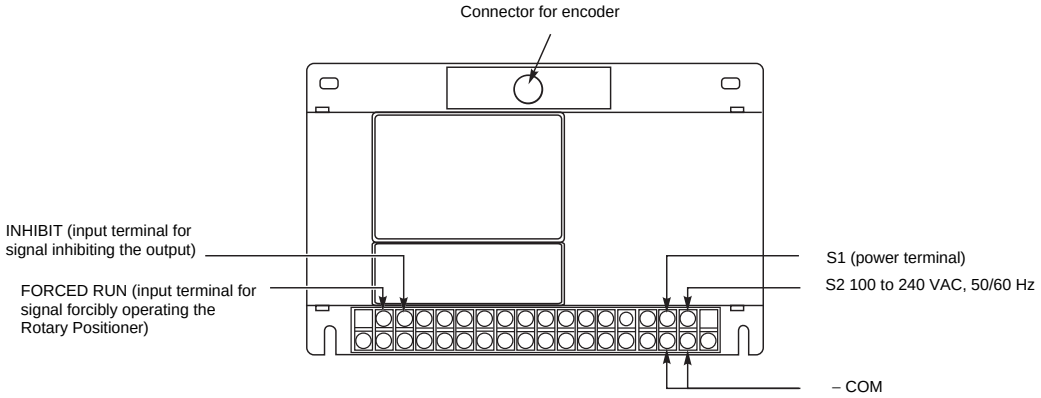


* The 0 V input terminal and the COM output terminal are connected internally; however, be sure to use 0 V as the common terminal in the input circuit.

H8PR-8P, -16P

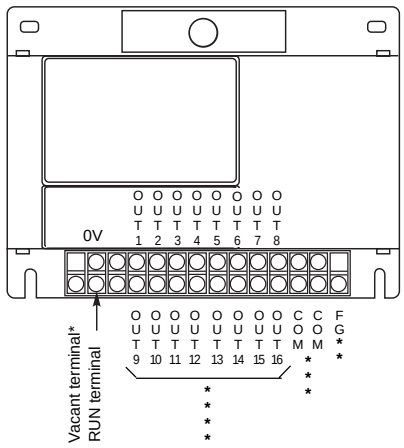


H8PR-24P

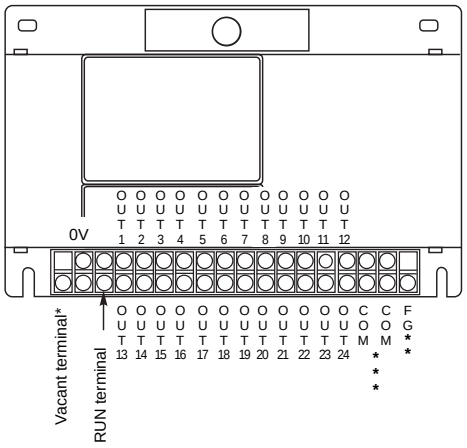


■ OUTPUT TERMINAL ARRANGEMENT

H8PR-8, -16

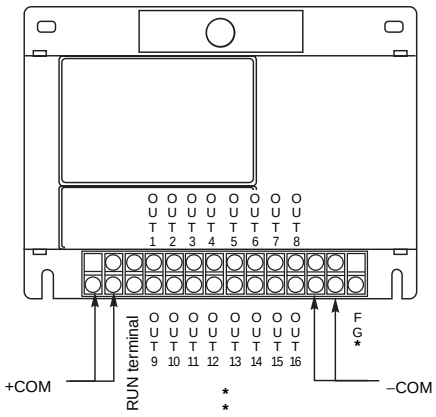


H8PR-24

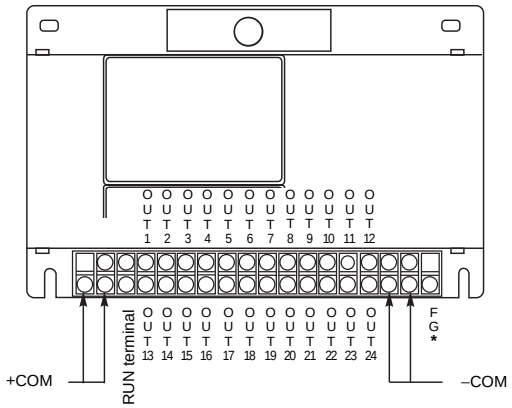


Note:
* Do not use the vacant terminal as a repeating terminal.
** Be sure to ground this terminal to prevent electric shock.
*** The COM output terminal and the 0 V input terminal are internally connected; however, be sure to use COM terminal as the common terminal for output circuits.
**** Terminals OUT9 to OUT16 are not provided on the H8PR-8.

H8PR-8P, -16P



H8PR-24P

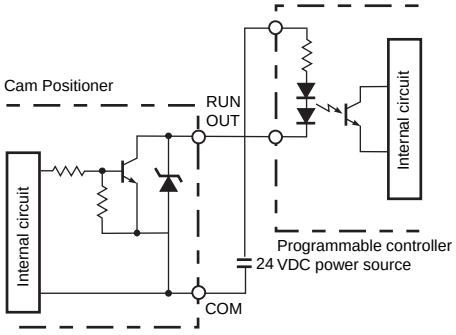


Note:

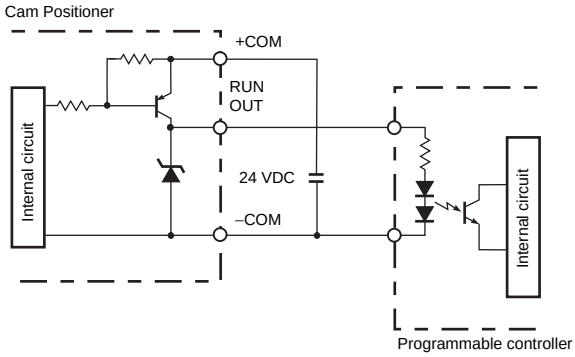
* Be sure to ground this terminal to prevent electric shock.
** Terminals OUT9 to OUT16 are not provided on the H8PR-8.

■ CONNECTING TO PROGRAMMABLE CONTROLLER

H8PR-8, -16, -24

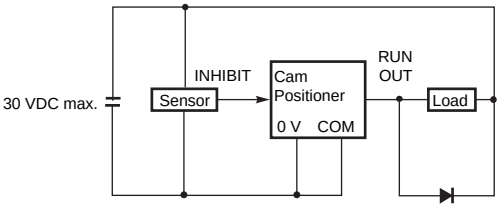


H8PR-8P, -16P, -24P

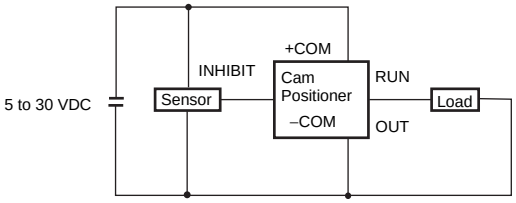


Note: Supply the power to the sensor for INHIBIT signal input and output circuit from the same power source.

H8PR-8, -16, -24



H8PR-8P, -16P, -24P



NOTE: DIMENSIONS ARE IN MILLIMETERS. To convert millimeters to inches, divide by 25.4.

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