e-Actuator



CAT.ES100-154C

Easy to Operate Integrated Controller Rolls

Slider Type/Rod Type/Guide Rod Type

Battery-less Absolute (Step Motor 24 VDC)



Simple setting allows for immediate use.

Two position stop with no programming required

For single solenoid mode (2-position)/ double solenoid mode (2-position)

All configurable on one screen.

Just 2 steps to complete!

* When used in single solenoid mode, the control mode must be changed.



Step 1

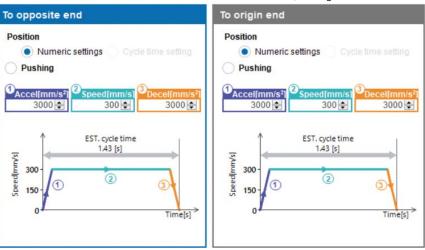
Select the control mode.



Step 2 Set the speed, acceleration, and deceleration.

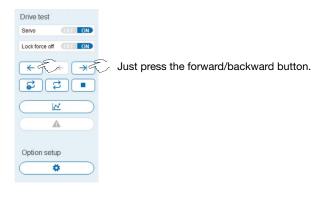


* In these charts, settling time is not included.



Setting complete

Test operation is possible immediately after setting up.





The stop position can be changed. For use in positions other than the default setting, refer to the operation manual.



Easy to set intermediate positions

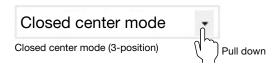
Three position stop with no programming required For closed center mode (3-position)

All configurable on one screen.

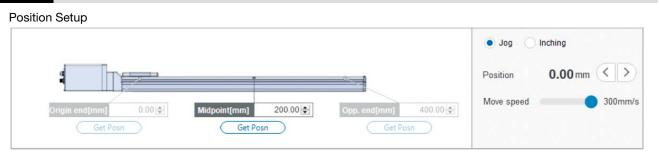
Just 3 steps to complete!



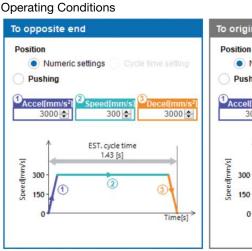
Step 1 Select the control mode.

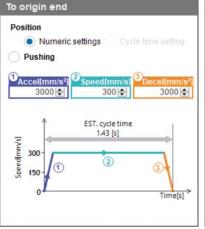


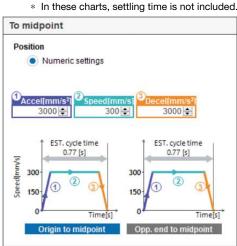
Step 2 Set the intermediate point position.



Step 3 Set the speed, acceleration, and deceleration.

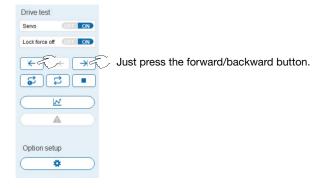






Setting complete

Test operation is possible immediately after setting up.



Cycle times are also easily set.

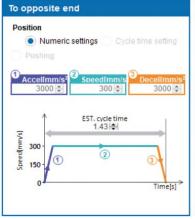
Cycle time can be set in all control modes.

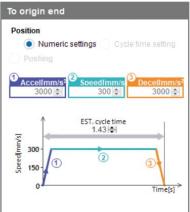
For single solenoid mode (2-position)/ double solenoid mode (2-position)



Step 1 Temporary setting of forward and backward speeds, acceleration/deceleration

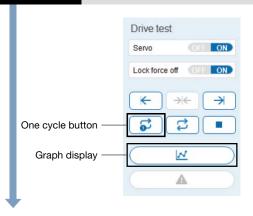
Operating Conditions

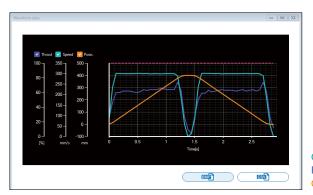




- $\ast\,\,$ In these charts, settling time is not included.
- * The operating conditions to an intermediate point do not correspond to the cycle time setting.
- Cycle time cannot be set for pushing operation.

Step 2 Operate one cycle and check the graph.



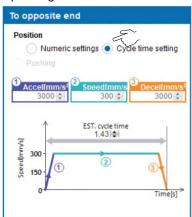


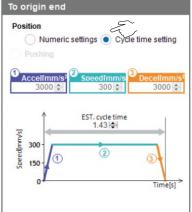
Green: Current speed Blue: Current force Orange: Current position

Setting complete

Adjustable according to cycle time

Operating Conditions





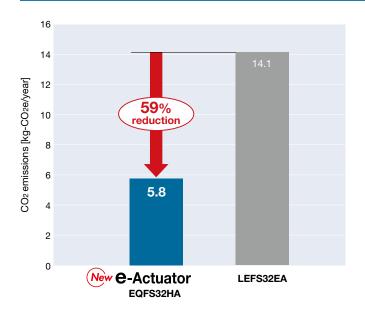
* In these charts, settling time is not included.

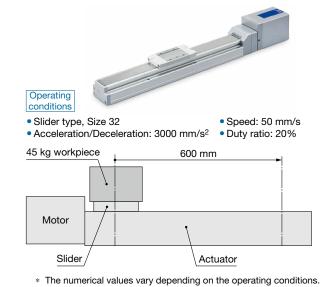


The stop position can be changed. For use in positions other than the default setting, refer to the operation manual.



Annual CO₂ emissions reduced by up to 59% through motor control optimization (SMC comparison)



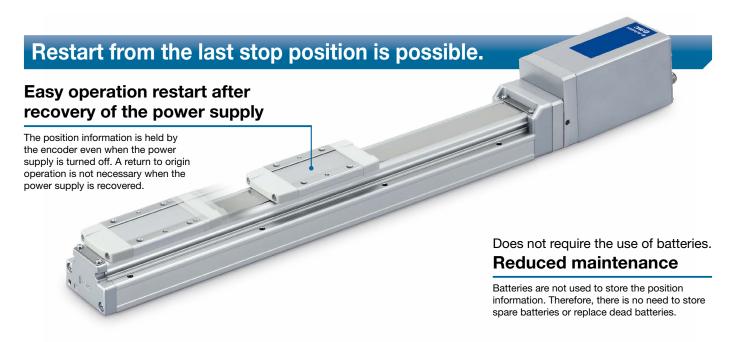


LEDs indicate the load condition.

Increased metal connector strength



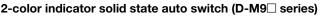
* A female dustproof cap comes with the setup communication connector (M12).



Can be selected from 4 directions (In-line motor type)

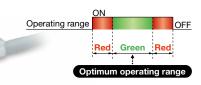


Detection of table stop position by means of an auto switch is possible. **Detection** 29



Accurate setting of the mounting position can be performed without mistakes.

A green light lights up when within the optimum operating range.

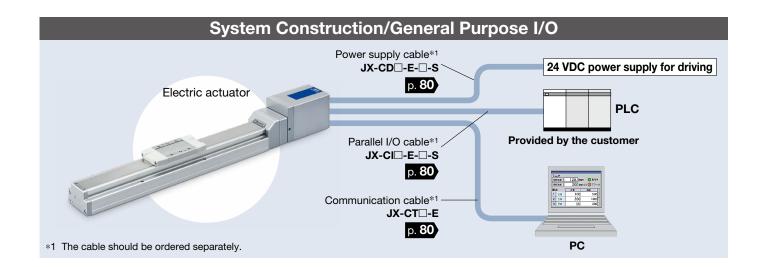


For the slider type

Allows for position detection of the table throughout the stroke



For checking the limit and the intermediate signal Auto switch



Variations

Туре			Slider type	Rod type	Guide rod type	
Series			EQFS DH	EQY□H p. 34	EQYG□H p. 56	
Actuatio			In-line: Ball screw Parallel: Ball screw + Belt	In-line: Ball screw Parallel: Ball screw + Belt	In-line: Ball screw Parallel: Ball screw + Belt	
Max. speed			1200	900	900	
Positioning repe	eatability	[mm]	±0.02	±0.02	±0.02	
Drive motor Battery-less absolute (Step motor 24 VDC)			•		•	
Power s	supply		24 VDC ±10%			
I/O signal			Parallel input: 3 inputs Parallel output: 4 outputs			
Operation mode			Positioning operation	Positioning operation Pushing operation (Excludes intermediate points)	Positioning operation Pushing operation (Excludes intermediate points)	
		16	•	•	•	
Size		25	•	•	•	
Size		32	•	•	•	
		40	•	_		
		16	18 (12)	40 (10)	40 (10)	
Max. work load [kg] The values in parentheses are		25	40 (15)	70 (30)	70 (29)	
for when mounted vertically	Size	32	68 (20)	100 (46)	100 (44)	
		40	80 (40)	_	_	
		16	_	154	154	
Max. pushing force	Size	25	_	511	511	
[N]	Size	32	_	796	796	
		40	<u> </u>	_	<u> </u>	
Max. stroke [mm]			1200	500	300	
Auto switch mounting		ng	•	•	•	

^{*1} The numerical values vary depending on the actuator type, work load, speed, and specifications. Please contact SMC for further details.



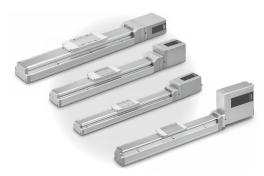
CONTENTS

e-Actuator

Easy to Operate Integrated Controller

Slider Type *EQFS* H Series **5.8**

Battery-less Absolute (Step Motor 24 VDC)



Model Selection	p. 9
How to Order	. p. 17
Specifications	. p. 18
Construction	. p. 20
Dimensions	. p. 21

Rod Type *EQY*□*H* Series **5.34**

Battery-less Absolute (Step Motor 24 VDC)



Model Selection	p. 35
How to Order	p. 41
Specifications	p. 42
Construction	p. 44
Dimensions	p. 45

Guide Rod Type *EQYG*□*H* Series **55**

Battery-less Absolute (Step Motor 24 VDC)



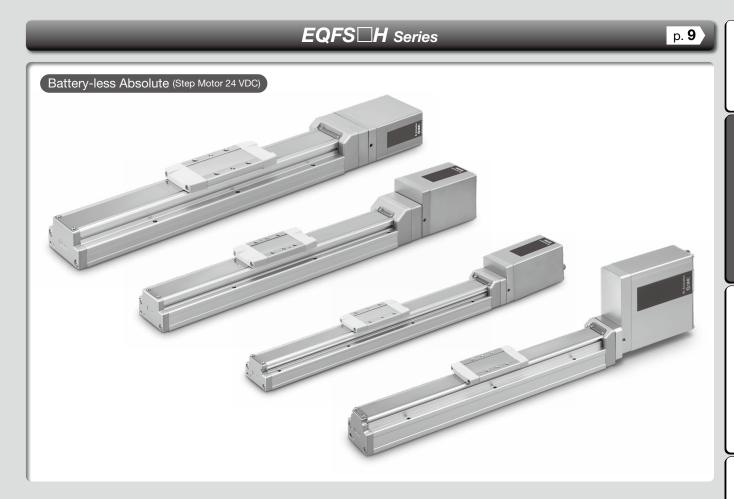
Auto Switch Mounting

Model Selection	p. 57
How to Order	 p. 68
Specifications	 p. 69
Construction	 p. 71
Dimensions	 p. 73
Support Block	 p. 77

Solid State Auto Switch, Normally Closed Solid State Auto Switch, 2-Color Indicator Solid State Auto Switch
e-Actuator Electric Specificationsp. 78
Wiring Examplesp. 79
Options

e-Actuator

Easy to Operate Integrated Controller / Slider Type





Model Selection

Selection Procedure



Check the work loadspeed.

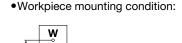


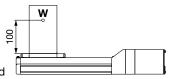


Selection Example

Operating conditions

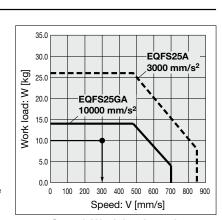
- Workpiece mass: 10 [kg]
- •Speed: 300 [mm/s]
- Acceleration/Deceleration: 10000 [mm/s²]
- •Stroke: 200 [mm]
- Mounting orientation: Horizontal upward





Step 1 Check the work load-speed. <Speed-Work load graph> (pages 10 to 13) Select a model based on the workpiece mass and speed while referencing the speed-work load graph.

Selection example) The **EQFS25HA-200** can be temporarily selected as a possible candidate based on the graph shown on the right side.



<Speed-Work load graph> (EQFS25HA/Battery-less absolute)

Step 2 Check the cycle time.

Calculate the cycle time using the following calculation method.

Cycle time:

T can be found from the following equation.

$$T = T1 + T2 + T3 + T4 [s]$$

•T1: Acceleration time and T3: Deceleration time can be found by the following equation.

•T2: Constant speed time can be found from the following equation.

$$T2 = \frac{L - 0.5 \cdot V \cdot (T1 + T3)}{V}[s]$$

 T4: Settling time varies depending on the conditions such as actuator types, load, and in position of the step data. Reference value for settling time:

0.15 s or less

The following value is used for this calculation.

Calculation example)

T1 to T4 can be calculated as follows.

$$T1 = V/a1 = 300/10000 = 0.03 [s],$$

$$T3 = V/a2 = 300/10000 = 0.03$$
 [s]

$$T2 = \frac{L - 0.5 \cdot V \cdot (T1 + T3)}{V}$$

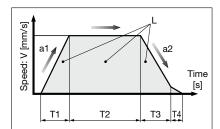
$$= 0.64 [s]$$

$$T4 = 0.15 [s]$$

The cycle time can be found as follows.

$$T = T1 + T2 + T3 + T4$$

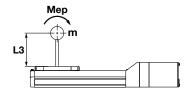
$$= 0.03 + 0.64 + 0.03 + 0.15$$



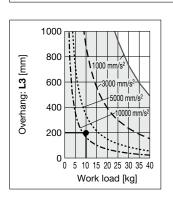
- L : Stroke [mm] \cdots (Operating condition)
- V : Speed [mm/s] ··· (Operating condition)
- a1: Acceleration [mm/s2] ··· (Operating condition)
- a2: Deceleration [mm/s2] ··· (Operating condition)
- T1: Acceleration time [s] Time until reaching the set speed
- T2: Constant speed time [s] Time while the actuator is operating at a constant speed
- T3: Deceleration time [s] Time from the beginning of the constant speed operation to stop
- T4: Settling time [s] Time until positioning is completed

Step 3 Check the allowable moment. <Static allowable moment> (page 13) <Dynamic allowable moment> (pages 14 and 15)

Confirm the moment that applies to the actuator is within the allowable range for both static and dynamic conditions.



Based on the above calculation result, the EQFS25A-200 should be selected.

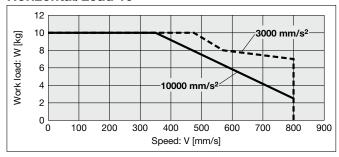


Model Selection E-Actuator Easy to Operate EQFS H Series Battery-less Absolute (Step Motor 24 VDC)

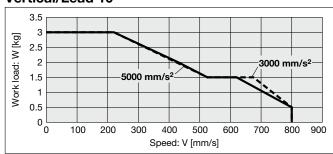
Speed-Work Load Graph (Guide)

EQFS16□**HA/Ball Screw Drive**

Horizontal/Lead 10

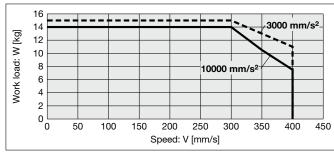


Vertical/Lead 10

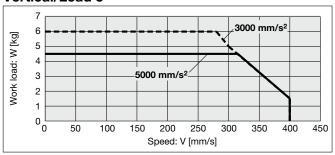


EQFS16□HB/Ball Screw Drive

Horizontal/Lead 5

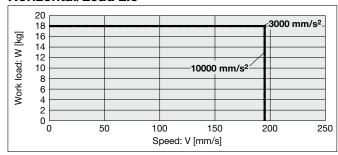


Vertical/Lead 5



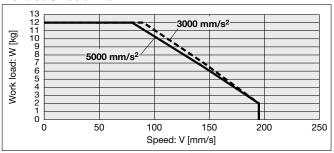
EQFS16□HC/Ball Screw Drive

Horizontal/Lead 2.5



Vertical/Lead 2.5

SMC

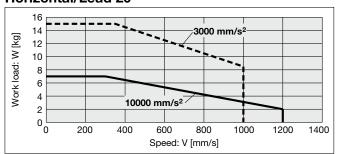




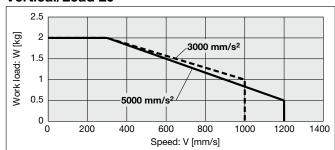
Speed-Work Load Graph (Guide)

EQFS25□HH/Ball Screw Drive

Horizontal/Lead 20

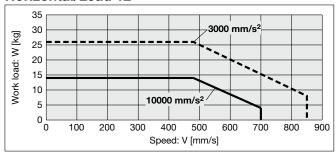


Vertical/Lead 20

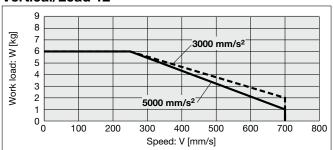


EQFS25 HA/Ball Screw Drive

Horizontal/Lead 12

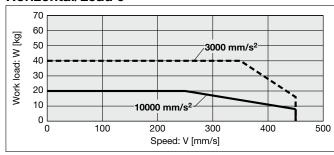


Vertical/Lead 12

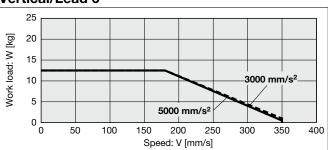


EQFS25□HB/Ball Screw Drive

Horizontal/Lead 6

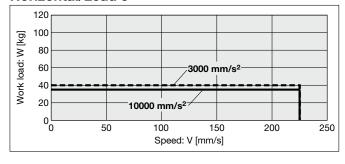


Vertical/Lead 6

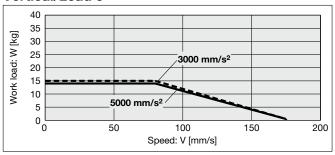


EQFS25□HC/Ball Screw Drive

Horizontal/Lead 3



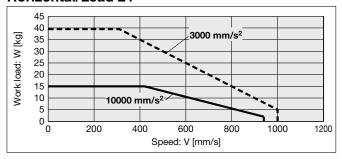
Vertical/Lead 3



Speed–Work Load Graph (Guide)

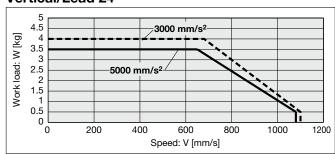
EQFS32□HH/Ball Screw Drive

Horizontal/Lead 24



Vertical/Lead 24

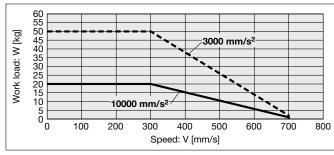
Model Selection **EQFS**



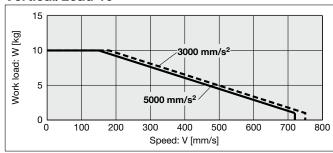
e-Actuator Easy to Operate

EQFS32□HA/Ball Screw Drive

Horizontal/Lead 16

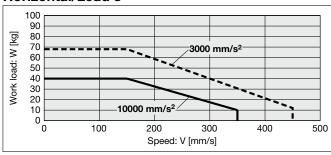


Vertical/Lead 16

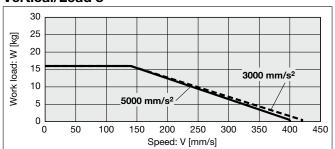


EQFS32□HB/Ball Screw Drive

Horizontal/Lead 8

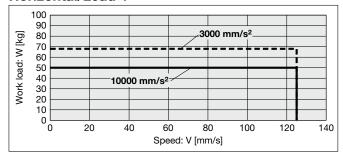


Vertical/Lead 8

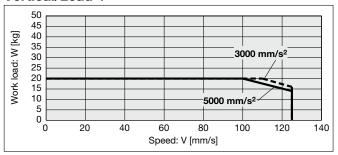


EQFS32 HC/Ball Screw Drive

Horizontal/Lead 4



Vertical/Lead 4

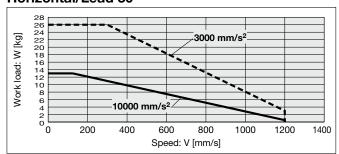




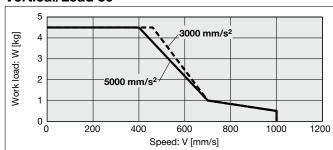
Speed-Work Load Graph (Guide)

EQFS40 HH/Ball Screw Drive

Horizontal/Lead 30

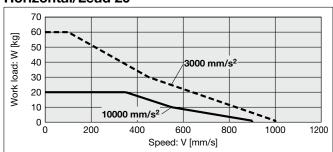


Vertical/Lead 30

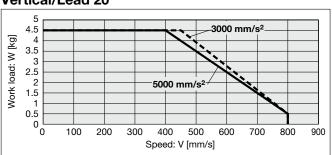


EQFS40□HA/Ball Screw Drive

Horizontal/Lead 20

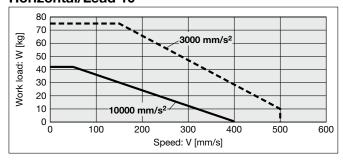


Vertical/Lead 20

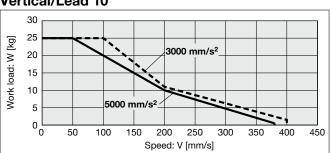


EQFS40□HB/Ball Screw Drive

Horizontal/Lead 10

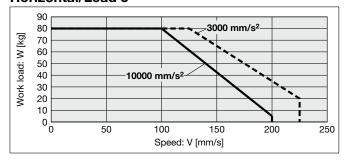


Vertical/Lead 10

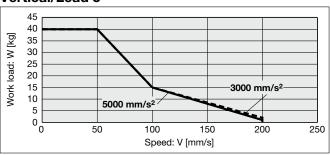


EQFS40□HC/Ball Screw Drive

Horizontal/Lead 5



Vertical/Lead 5



Static Allowable Moment*1

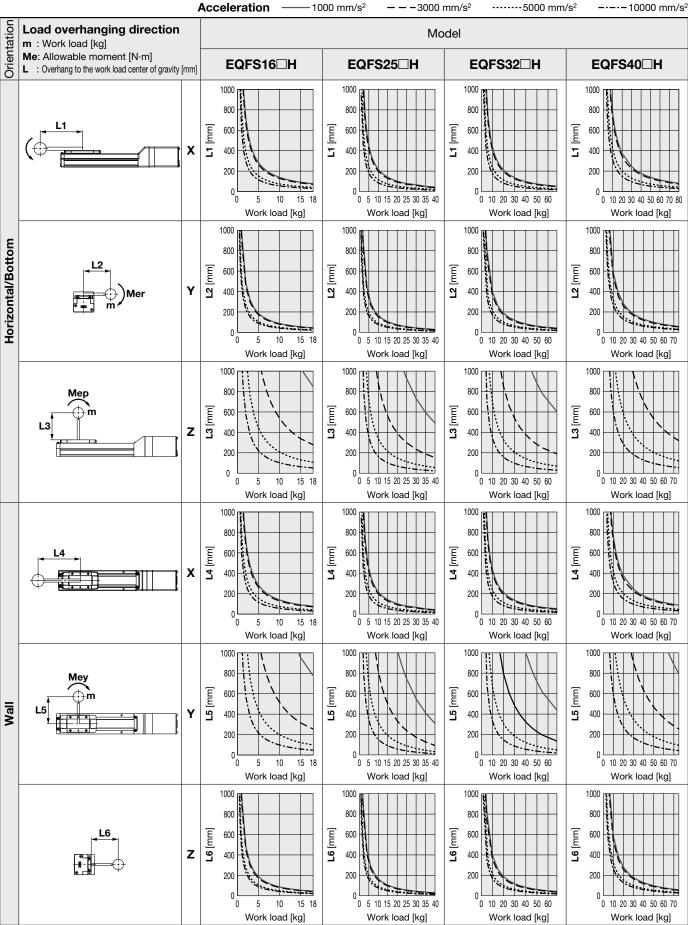
				[N·m]
Model	Size	Pitching	Yawing	Rolling
EQFS□H	16	10.0	10.0	20.0
	25	27.0	27.0	52.0
	32	46.0	46.0	101.0
	40	110.0	110.0	207.0

*1 The static allowable moment is the amount of static moment which can be applied to the actuator when it is stopped.

If the product is exposed to impact or repeated load, be sure to take adequate safety measures when using the product.

Dynamic Allowable Moment

* These graphs show the amount of allowable overhang (guide unit) when the center of gravity of the workpiece overhangs in one direction.





Dynamic Allowable Moment

* These graphs show the amount of allowable overhang (guide unit) when the center of gravity of the workpiece overhangs in one direction.

1000 mm/s² **Acceleration** $- - -3000 \text{ mm/s}^2$ -----5000 mm/s² Orientatior Load overhanging direction Model m: Work load [kg] Me: Allowable moment [N·m] EQFS16□H EQFS25□H EQFS32□H EQFS40□H L : Overhang to the work load center of gravity [mm] 1000 1000 1000 1000 800 800 800 800 **L7** [mm] mm [mm] [mm] 600 600 600 600 Υ 400 7 400 7 400 7 400 200 200 200 200 5 10 15 20 25 30 35 40 12 10 5 10 15 Work load [kg] Work load [kg] Work load [kg] Work load [kg] 1000 1000 1000 1000 800 800 800 800 **L8** [mm] 600 600 **L8** [mm] 600 **L8** [mm] 600 **L8** [mm] Z 400 400 400 400 200 200 200 200 10 12 5 5 10 15 20 25 Work load [kg] Work load [kg] Work load [kg] Work load [kg]

Calculation of Guide Load Factor

1. Decide operating conditions.

Model: EQFS□H Size: 16/25/32/40 Acceleration [mm/s²]: **a** Work load [kg]: **m**

Mounting orientation: Horizontal/Bottom/Wall/Vertical Work load center position [mm]: Xc/Yc/Zc

- 2. Select the target graph while referencing the model, size, and mounting orientation.
- 3. Based on the acceleration and work load, find the overhang [mm]: Lx/Ly/Lz from the graph.
- 4. Calculate the load factor for each direction.

 $\alpha x = Xc/Lx$, $\alpha y = Yc/Ly$, $\alpha z = Zc/Lz$

5. Confirm the total of $\alpha \boldsymbol{x}$, $\alpha \boldsymbol{y}$, and $\alpha \boldsymbol{z}$ is 1 or less.

 $\alpha x + \alpha y + \alpha z \le 1$

When 1 is exceeded, please consider a reduction of acceleration and work load, or a change of the work load center position and series.

Example

 Operating conditions Model: EQFS40□H

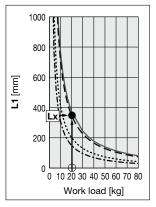
Size: 40

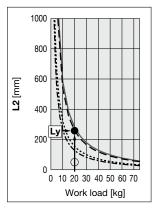
Mounting orientation: Horizontal Acceleration [mm/s²]: 3000

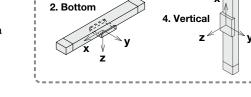
Work load [kg]: 20

Work load center position [mm]: Xc = 0, Yc = 50, Zc = 200

2. Select the graphs for horizontal of the EQFS40 \square H on page 14.







--- Mounting orientation

3. Lx = 350 mm, Ly = 250 mm, Lz = 1000 mm

1. Horizontal

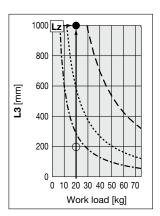
 $4. \ \mbox{The load factor for each direction can be found as follows.}$

 $\alpha x = 0/350 = 0$

 α **y** = 50/250 = 0.2

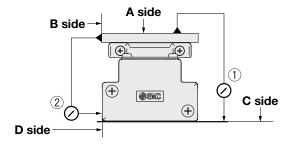
 $\alpha z = 200/1000 = 0.2$

5. $\alpha \mathbf{x} + \alpha \mathbf{y} + \alpha \mathbf{z} = \mathbf{0.4} \le \mathbf{1}$



Model Selection E-Actuator Easy to Operate EQFS H Series Battery-less Absolute (Step Motor 24 VDC)

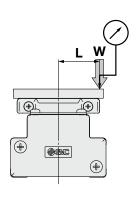
Table Accuracy (Reference Value)

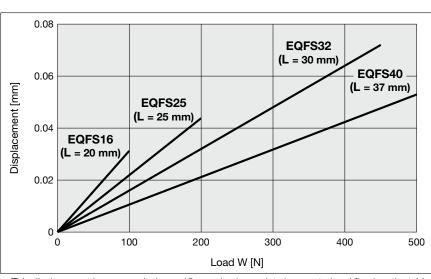


	Traveling parallelism [mm] (Every 300 mm)			
Model	① C side traveling parallelism to A side	② D side traveling parallelism to B side		
EQFS16	0.05	0.03		
EQFS25	0.05	0.03		
EQFS32	0.05 0.03			
EQFS40	0.05	0.03		

Traveling parallelism does not include the mounting surface accuracy. (Excludes when the stroke exceeds 2000 mm)

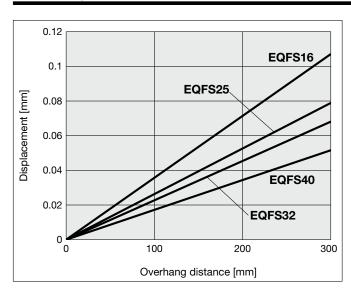
Table Displacement (Reference Value)





- * This displacement is measured when a 15 mm aluminum plate is mounted and fixed on the table.
- * Check the clearance and play of the guide separately.

Overhang Displacement Due to Table Clearance (Initial Reference Value)



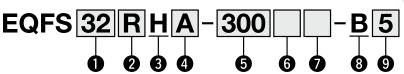
e-Actuator Easy to Operate **Integrated Controller / Slider Type**

EQFS H Series EQFS16, 25, 32, 40

(E UK CA ROHS

How to Order





Size

2 Motor mounting position/ Motor cover direction Motor mounting position: In-line

Symbol	Motor cover direction*1	Size			
Nil	_	25/32/40			
D1	Left side				
D2	Right side	16			
D3	Top side	10			
D4	Bottom side				

*1 This is the direction seen from the connector side.

Motor mounting position: Parallel

Symbol	Direction	Size	
R	Right side	16/25/32/40	
L	Left side	16/25/32/40	

3 Motor type

н	Battery-less absolute
п	(Step motor 24 VDC)

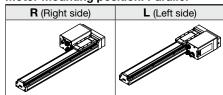
4 Lead [mm]

Symbol	EQFS16	EQFS25	EQFS32	EQFS40
Н	_	20	24	30
Α	10	12	16	20
В	5	6	8	10
С	2.5	3	4	5

EQFS16 Motor cover direction

D1 (Left side)	D2 (Right side)	D3 (Top side)	D4 (Bottom side)

Motor mounting position: Parallel



Stroke

•	****
50	50
to	to
1200	1200

For details, refer to the applicable stroke table below.

6 Motor option

Nil	Without option
В	With lock

T Grease application (Seal band part)

Nil	With
N	Without (Roller specification)

8 Controller position

В	Integrated controller

9 Parallel input

5	NPN
6	PNP

The power cable and the parallel I/O cable need to be ordered separately. Refer to page 80 for details.

The auto switches should be ordered separately. For details, refer to pages 29 to 32.

Applicable Stroke Table

17

Size											Str	oke										
Size	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1100	1200
16	•	•	•	•	•	•	•	•	•	•	-	-	_	_	_	_	_	_	_	_	_	_
25	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	_	_	_	_	_	_
32	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	_	_
40	_	_	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

e-Actuator Easy to Operate

Battery-less Absolute (Step Motor 24 VDC)

Integrated Controller / Slider Type **EQFS**

Specifications

		Model	,	EG	FS16	∃H		EQFS	25□H			EQFS	32□H			EQFS	40□H	
	Stroke [m	m]*1		5	0 to 50	0		50 to	800			50 to	1000			150 to	1200	
	Work load	[ka]*2	Horizontal	10	15	18	15	26	40	40	39.5	50	68	68	26	60	75	80
	WOLK IDAU	[kg] -	Vertical	3	6	12	2	6	12.5	15	4	10	16	20	4.5	4.5	25	40
			Up to 400	10 to 800	5 to 400	3 to 195	20 to 1200	12 to 850	6 to 450	3 to 225	24 to 1100	16 to 750	8 to 450	4 to 125	30 to 1200	20 to 1000	10 to 500	5 to 225
			401 to 450	10 to 700	5 to 360	3 to 170	20 to 1100	12 to 750	6 to 400	3 to 225	24 to 1100	16 to 750	8 to 450	4 to 125	30 to 1200	20 to 1000	10 to 500	5 to 225
			451 to 500	10 to 600	5 to 300	3 to 140	20 to 1100	12 to 750	6 to 400	3 to 225	24 to 1100	16 to 750	8 to 450	4 to 125	30 to 1200	20 to 1000	10 to 500	5 to 225
			501 to 600	_	_	_	20 to 900	12 to 540	6 to 270	3 to 135	24 to 1100	16 to 750	8 to 400	4 to 125	30 to 1200	20 to 1000	10 to 500	5 to 225
	Speed	Stroke	601 to 700	_	_	_	20 to 630	12 to 420	6 to 230	3 to 115	24 to 930	16 to 620	8 to 310	4 to 125	30 to 1200	20 to 900	10 to 440	5 to 220
્ર	[mm/s]	range	701 to 800	_	_	_	20 to 550	12 to 330	6 to 180	3 to 90	24 to 750	16 to 500	8 to 250	4 to 125	30 to 1140	20 to 760	10 to 350	5 to 175
텵			801 to 900	_	_	_	_	-	_	_	24 to 610	16 to 410	8 to 200	4 to 100	30 to 930	20 to 620	10 to 280	5 to 140
lica			901 to 1000	_	_	_	_	-	_	_	24 to 500	16 to 340	8 to 170	4 to 85	30 to 780	20 to 520	10 to 250	5 to 125
eci			1001 to 1100	_	_	_	_	_	_	_	_	_	_	_	30 to 660	20 to 440	10 to 220	5 to 110
Actuator specifications			1101 to 1200	_	_	_	_	_	_	_	_	_	_	_	30 to 570	20 to 380	10 to 190	5 to 95
ᅙ	Мах. ассе		Horizontal								10000							
ğ	decelerati	on [mm/s ²]	Vertical								5000							
ĕ	Positionin	g repeatabili	ity [mm]								±0.02							
	Lost motion	on [mm]*3								0	.1 or les	S						
	Lead [mm]		10	5	2.5	20	12	6	3	24	16	8	4	30	20	10	5
	Impact/Vib	ration resista	nce [m/s ²]*4								50/20							
	Actuation							Ball scr	ew (EQ		Ball scr		elt (EQF	S□ ^R H)				
	Guide type									Lir	near gui	de						
		temperature									5 to 40							
		humidity rai	nge [%RH]						90	or less	(No con	densati	on)					
	Enclosure										IP30							
Sus	Motor size				□28				· -						6.4			
Electric specifications	Motor typ	e						Ba	ttery-le		lute (St		or 24 VD	DC)				
iic ect	Encoder										/-less al							
ы Эё		oply voltage	[V]								VDC ±1							
	Power [W]	*5 *7		Max	k. powe	r 61		Max. po				Max. po		3	l	Max. po	wer 116	3
Lock unit specifications	Type*6										agnetizi							
icat u	Holding fo			29	59	118	20	59	123	147	39	98	157	196	44	44	245	392
Pecif	Power [W]				2.9	,			Ō			5	<u> </u>				5	
	Rated volt		on standard								VDC ±1	0%						

- *1 Please contact SMC for non-standard strokes as they are produced as special orders.
- *2 The max. work load at 3000 mm/s² acceleration and deceleration speed
 - Work load varies depending on the speed and acceleration. Check the "Speed-Work Load Graph."
 - Furthermore, if the cable length exceeds 5 m, the speed and work load specified in the "Speed-Work Load Graph" may decrease by up to 10% for each 5 m increase.
- *3 A reference value for correcting errors in reciprocal operation
- *4 Impact resistance: No malfunction occurred when the actuator was tested with a drop tester in both an axial direction and a perpendicular direction to the lead screw. (The test was performed with the actuator in the initial state.)
 - Vibration resistance: No malfunction occurred in a test ranging between 45 to 2000 Hz. The test was performed in both an axial direction and a perpendicular direction to the lead screw. (The test was performed with the actuator in the initial state.)
- *5 Indicates the max. power during operation (including the controller). This value can be used for the selection of the power supply.
- *6 With lock only
- *7 For an actuator with lock, add the power for the lock.





Weight

In-line Motor

Series					EQF	S16				
Stroke [mm]	50	100	150	200	250	300	350	400	450	500
Product weight [kg]	1.06	1.15	1.24	1.33	1.41	1.50	1.59	1.68	1.77	1.86
Additional weight with lock [kg]					0.	19				

Series								EQF	S25							
Stroke [mm]	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
Product weight [kg]	1.77	1.91	2.05	2.19	2.33	2.47	2.61	2.75	2.89	3.03	3.17	3.31	3.45	3.59	3.73	3.87
Additional weight with lock [kg]		0.31														

Series										EQF	S32									
Stroke [mm]	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
Product weight [kg]	3.12	3.32	3.52	3.72	3.92	4.12	4.32	4.52	4.72	4.92	5.12	5.32	5.52	5.72	5.92	6.12	6.32	6.52	6.72	6.92
Additional weight with lock [kg]						•		•		0.	58									

Series										EQF	S40									
Stroke [mm]	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1100	1200
Product weight [kg]	4.99	5.27	5.55	5.83	6.11	6.39	6.77	6.95	7.23	7.51	7.79	8.07	8.35	8.63	8.91	9.19	9.47	9.75	10.31	10.87
Additional weight with lock [kg]										0.	60					•				

Right/Left Side Parallel Motor*1

Series					EQF	S16 ^R				
Stroke [mm]	50	100	150	200	250	300	350	400	450	500
Product weight [kg]	1.02	1.11	1.20	1.29	1.37	1.46	1.55	1.64	1.73	1.82
Additional weight with lock [kg]					0.	19				

Series		EQFS25 ^R														
Stroke [mm]	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
Product weight [kg]	1.75	1.89	2.03	2.17	2.31	2.45	2.59	2.73	2.87	3.01	3.15	3.29	3.43	3.57	3.71	3.85
Additional weight with lock [kg]		0.31														

Series		EQFS32 ^R																		
Stroke [mm]	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
Product weight [kg]	3.09	3.29	3.49	3.69	3.89	4.09	4.29	4.49	4.69	4.89	5.09	5.29	5.49	5.69	5.89	6.09	6.29	6.49	6.69	6.89
Additional weight with lock [kg]		0.58																		

Series		EQFS40 ^R																		
Stroke [mm]	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1100	1200
Product weight [kg]	5.15	5.43	5.71	5.99	6.27	6.55	6.93	7.11	7.39	7.67	7.95	8.23	8.51	8.79	9.07	9.35	9.63	9.91	10.47	11.03
Additional weight with lock [kg]		0.60																		

*1 The product weight in the table includes the weight of the table spacer.

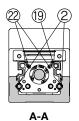
Table Spacer Weight	[9]
EQFS16 ^R	5
EQFS25 ^R	95
EQFS32 ^R	125
FQFS40 ^R	30

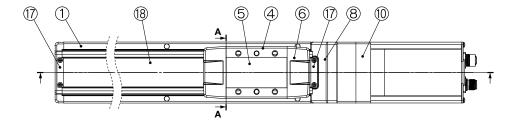


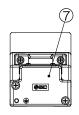
Integrated Controller / Slider Type $m{EQ}$

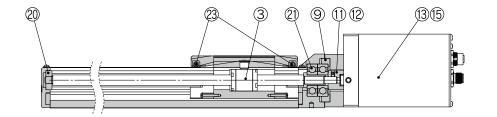
Construction

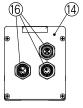
In-line motor





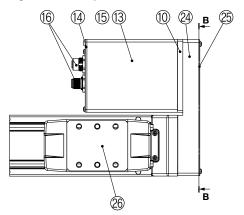


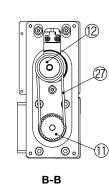




e-Actuator Easy to Operate

Right/Left side parallel motor





Component Parts

COII	iponent raits		
No.	Description	Material	Note
1	Body	Aluminum alloy	Anodized
2	Rail guide	_	
3	Ball screw assembly	_	
4	Table	Aluminum alloy	Anodized
5	Blanking plate	Aluminum alloy	Anodized
6	Seal band holder	Synthetic resin	
7	Housing A	Aluminum die-casted	Coating
8	Housing B	Aluminum die-casted	Coating
9	Bearing stopper	Aluminum alloy	
10	Motor adapter	Aluminum alloy	Coating
11	Screw hub/pulley	Aluminum alloy	
12	Motor hub/pulley	Aluminum alloy	
13	Motor cover	Aluminum alloy	Anodized
14	End cover	Aluminum alloy	Anodized
15	Motor	_	
16	Connector	_	
_17	Band stopper	Stainless steel	
18	Dust seal band	Stainless steel	
_19	Seal magnet	_	
20	Bearing	_	201 mm stroke or more
21	Bearing	_	
22	Magnet	_	
23	Roller shaft	Stainless steel	Without grease application

Component Parts (Right/Left side parallel only)

No.	Description	Material	Note
24	Return plate	Aluminum alloy	Coating
25	Cover plate	Aluminum alloy	Anodized
26	Table spacer	Aluminum alloy	Anodized
27	Belt	_	

Replacement Parts (Right/Left side parallel only)/Belt

		p
No.	Size	Order no.
	16	LE-D-6-5
27	25	LE-D-15-1
21	32	LE-D-19-1
	40	LE-D-19-2

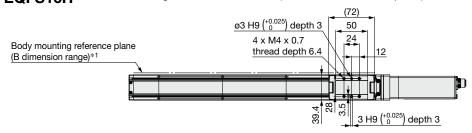
Replacement Parts/Grease Pack

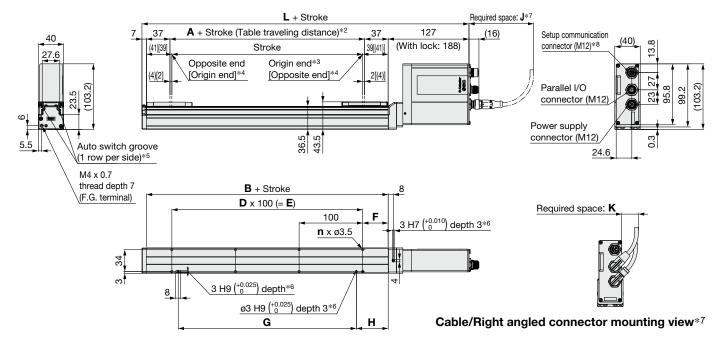
Applied portion	Order no.
Ball screw	
Rail guide	GR-S-010 (10 G)
Dust seal band	GR-S-020 (20 G)
(When "Without" is selected for the grease	Gh-3-020 (20 G)
application, grease is applied only on the back side.)	



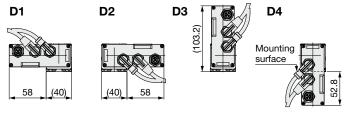
Dimensions: In-line Motor

EQFS16H * This drawing shows the EQFS16D3H (Motor cover direction: Top side).





Motor mounting position: Motor cover direction (Right angled cable)



Required Space*7		[mm]
Cable connector type	J	K
Straight	115	115
Right angled	50* ⁹	25

- *9 Secure a space of 100 mm or more to connect the communication cable for controller setting.
- *1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more. (Recommended height: 5 mm)
 - In addition, be aware that surfaces other than the body mounting reference plane (B dimension range) may slightly protrude from the body mounting reference plane. Be sure to provide a clearance of 1 mm or more to avoid interference with workpieces, facilities, etc.
- *2 The distance the table moves according to movement instructions
- Make sure that workpieces mounted on the table do not interfere with other workpieces or the facilities around the table.
- *3 Indicates the factory default origin position (0 mm)
- *4 [] refers to when the rotation direction reference is changed.
- *5 The applicable auto switch (D-M9□) should be ordered separately.
- *6 When using the positioning pin holes on the bottom, use either the one on the body side or the one on the housing side.
- *7 The amount of space required to connect the various cables and mount the product Provide this amount of space for cable handling. Order the cable separately.
- *8 A female dustproof cap comes with the setup communication connector (M12).

Dimensions										[mm]
Stroke [mm]	Without lock	With lock	Α	В	n	D	E	F	G	Н
50					4			15	80	25
100, 150					4	_	_		80	
200, 250	214	275	6	80	6	2	200		180	
300, 350	214	2/3	0	00	8	3	300	40	280	50
400, 450					10	4	400		380	
500					12	5	500		480	

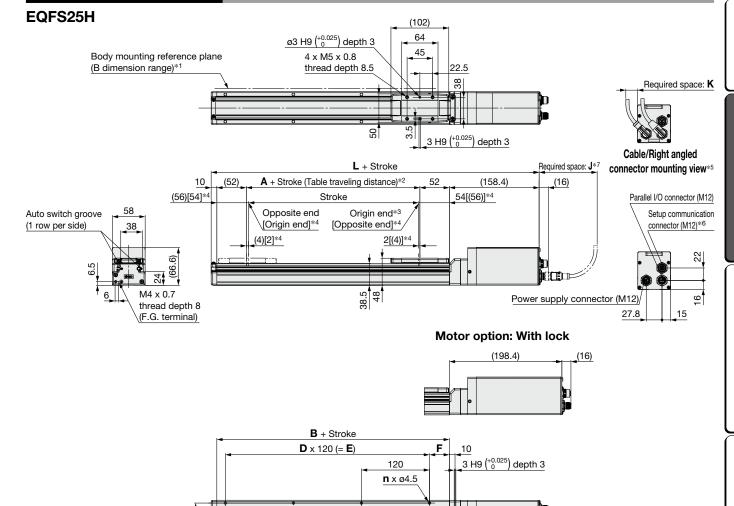
[mm]

Κ

25

e-Actuator Easy to Operate Integrated Controller / Slider Type EQFS H Serie

Dimensions: In-line Motor



*7 Secure a space of 100 mm or more to connect the communication cable for controller setting.

115 50*⁷

Required space*5

Cable connector type

Straight

Right angled

Battery-less Absolute (Step Motor 24 VDC)

*1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more. (Recommended height: 5 mm) In addition, be aware that surfaces other than the body mounting reference plane (B dimension range) may slightly protrude from the body mounting reference plane. Be sure to provide a clearance of 1 mm or more to avoid interference with workpieces, facilities, etc.

ø3 H9 (+0.025) depth 3

н

G

*2 The distance the table moves according to movement instructions

Make sure that workpieces mounted on the table do not interfere with other workpieces or the facilities around the table.

3 H9 (+0.025) depth 3

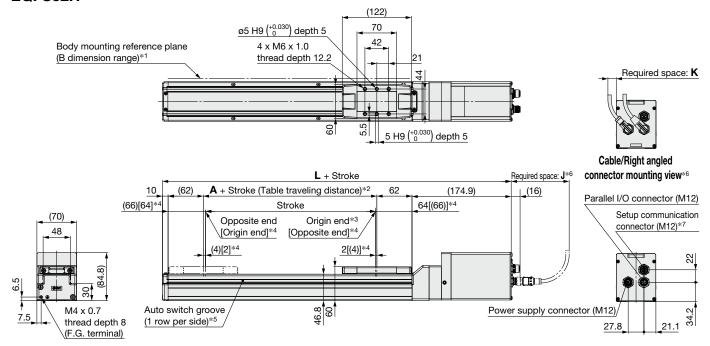
- *3 Indicates the factory default origin position (0 mm)
- *4 [] refers to when the rotation direction reference is changed.
- *5 The amount of space required to connect the various cables and mount the product Provide this amount of space for cable handling. Order the cable separately.
- *6 A female dustproof cap comes with the setup communication connector (M12).
- * The applicable auto switch (D-M9□) should be ordered separately.
- * When using the positioning pin holes on the bottom, use either the one on the body side or the one on the housing side.

Dimensions												
Stroke [mm]	Without lock	With lock	Α	В	n	D	E	F	G	Н		
50					4			20	100	30		
100, 150					4	_	_		100			
200, 250					6	2	240		220			
300, 350, 400	278.4	318.4	6	110	8	3	360		340			
450, 500	270.4	310.4	0	110	10	4	480	35	460	45		
550, 600, 650					12	5	600		580			
700, 750					14	6	720		700			
800					16	7	840		820			

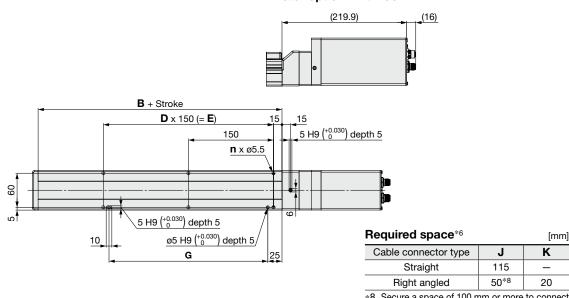


Dimensions: In-line Motor

EQFS32H



Motor option: With lock



- *8 Secure a space of 100 mm or more to connect the communication cable for controller setting.
- *1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more. (Recommended height: 5 mm)
 - In addition, be aware that surfaces other than the body mounting reference plane (B dimension range) may slightly protrude from the body mounting reference plane. Be sure to provide a clearance of 1 mm or more to avoid interference with workpieces, facilities, etc.
- *2 The distance the table moves according to movement instructions
 - Make sure that workpieces mounted on the table do not interfere with other workpieces or the facilities around the table.
- *3 Indicates the factory default origin position (0 mm)
- *4 [] refers to when the rotation direction reference is changed.
- *5 The applicable auto switch (D-M9□) should be ordered separately.
- *6 The amount of space required to connect the various cables and mount the product
 - Provide this amount of space for cable handling. Order
- the cable separately.
- *7 A female dustproof cap comes with the setup communication connector (M12).
- * A switch spacer (BMY3-016) is required to secure auto switches. Please order it separately.
- * When using the positioning pin holes on the bottom, use either the one on the body side or the one on the housing side.

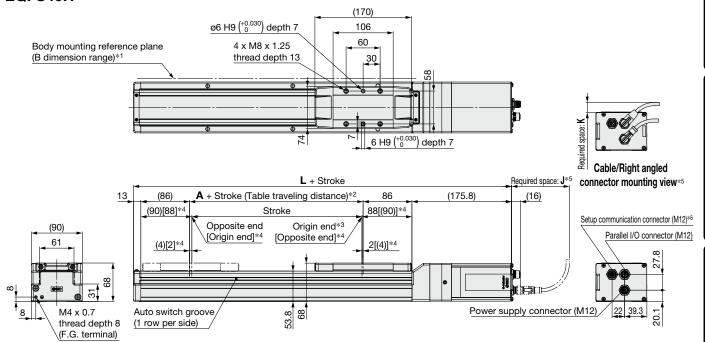
Dimensions								[mm]
Stroke [mm]	Without lock	With lock	Α	В	n	D	E	G
50, 100, 150					4	-	_	130
200, 250, 300		359.9			6	2	300	280
350, 400, 450					8	3	450	430
500, 550, 600	314.9		6	130	10	4	600	580
650, 700, 750					12	5	750	730
800, 850, 900					14	6	900	880
950, 1000					16	7	1050	1030



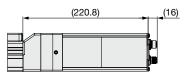
Integrated Controller / Slider Type **EQFS**

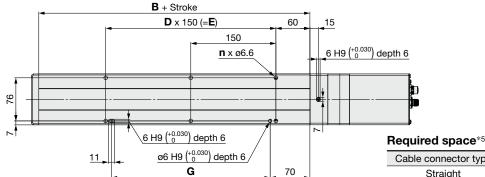
Dimensions: In-line Motor

EQFS40H



Motor option: With lock





nequired space		[mm]
Cable connector type	J	K
Straight	115	_
Right angled	50* ⁷	20

e-Actuator Easy to Operate

Battery-less Absolute (Step Motor 24 VDC)

- *7 Secure a space of 100 mm or more to connect the communication cable for controller setting.
- *1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more. (Recommended height: 5 mm)
- In addition, be aware that surfaces other than the body mounting reference plane (B dimension range) may slightly protrude from the body mounting reference plane. Be sure to provide a clearance of 1 mm or more to avoid interference with workpieces, facilities, etc.
- *2 The distance the table moves according to movement instructions
- Make sure that workpieces mounted on the table do not interfere with other workpieces or the facilities around the table.
- *3 Indicates the factory default origin position (0 mm)
- *4 [] refers to when the rotation direction reference is changed.
- *5 The amount of space required to connect the various cables and mount the product
 - Provide this amount of space for cable handling. Order the cable separately.
- *6 A female dustproof cap comes with the setup communication connector (M12). The applicable auto switch (D-M9□) should be
- ordered separately. A switch spacer (BMY3-016) is required to secure
- auto switches. Please order it separately.
- When using the positioning pin holes on the bottom, use either the one on the body side or the one on the housing side.

U	II	n	e	n	SI	0	n	S	

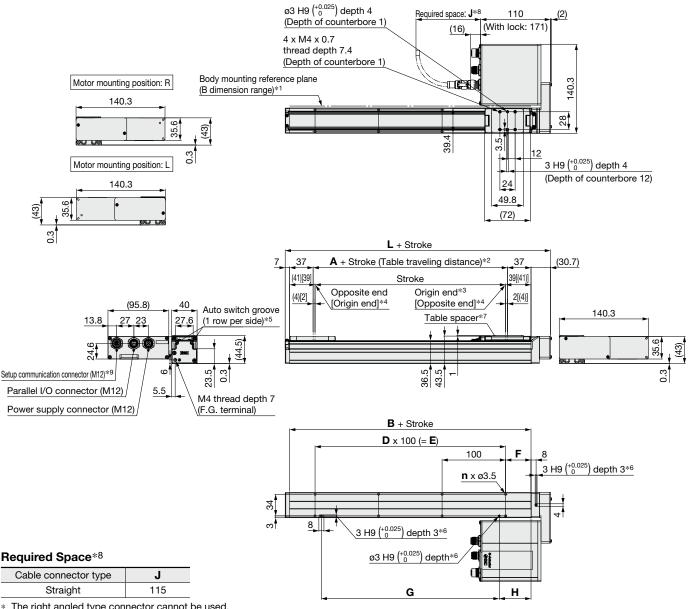
Dillielisions								[mm]			
Stroke [mm]	Without lock	With lock	Α	В	n	D	E	G			
150		411.8			4	_	_	130			
200, 250, 300								6	2	300	280
350, 400, 450]		11.8 6		8	3	450	430			
500, 550, 600	366.8			178	10	4	600	580			
650, 700, 750	300.0		0	170	12	5	750	730			
800, 850, 900					14	6	900	880			
950, 1000					16	7	1050	1030			
1100, 1200					18	8	1200	1180			





Dimensions: Right/Left Side Parallel Motor

EQFS16RH



- * The right angled type connector cannot be used.
- *1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more. (Recommended height: 5 mm)
 - In addition, be aware that surfaces other than the body mounting reference plane (B dimension range) may slightly protrude from the body mounting reference plane. Be sure to provide a clearance of 1 mm or more to avoid interference with workpieces, facilities, etc.
- *2 The distance the table moves according to movement instructions
 - Make sure that workpieces mounted on the table do not interfere with other workpieces or the facilities around the table.
- *3 Indicates the factory default origin position (0 mm)
- *4 [] refers to when the rotation direction reference is changed.
- *5 The applicable auto switch (D-M9□) should be ordered separately.
- *6 When using the positioning pin holes on the bottom, use either the one on the body side or the one on the housing side.
- *7 The table spacer is shipped together with the product but does not come assembled.
- *8 The amount of space required to connect the various cables and mount the product Provide this amount of space for cable handling. Order the cable separately
- *9 A female dustproof cap comes with the setup communication connector (M12).

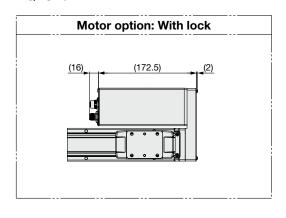
Dimensions									[mm]		
Stroke [mm]	L	Α	В	n	D	E	F	G	Н		
50			90	4			15	80	25		
100, 150					4	_	_		80		
200, 250	117.7	6 90		6 90	00	6	2	200		180	
300, 350	117.7				8	3	300	40	280	50	
400, 450				10	4	400		380			
500				12	5	500		480			

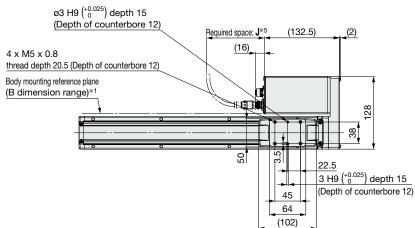


e-Actuator Easy to Operate Integrated Controller / Slider Type **EQFS**

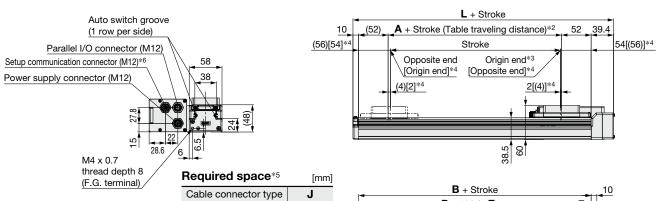
Dimensions: Right/Left Side Parallel Motor

EQFS25RH

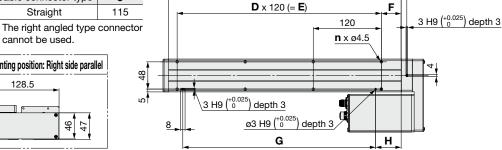




Battery-less Absolute (Step Motor 24 VDC)



Motor mounting position: Left side parallel Motor mounting position: Right side parallel 128.5 128.5 46 47 46



- *1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more. (Recommended height: 5 mm)
 - In addition, be aware that surfaces other than the body mounting reference plane (B dimension range) may slightly protrude from the body mounting reference plane. Be sure to provide a clearance of 1 mm or more to avoid interference with workpieces, facilities, etc.
- *2 The distance the table moves according to movement instructions
 - Make sure that workpieces mounted on the table do not interfere with other workpieces or the facilities around the table.
- *3 Indicates the factory default origin position (0 mm)
- *4 [] refers to when the rotation direction reference is changed.
- The amount of space required to connect the various cables and mount the product Provide this amount of space for cable handling. Order the cable separately.

Straight

cannot be used.

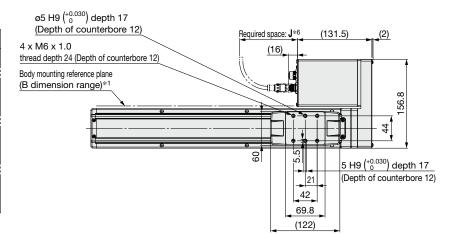
- *6 A female dustproof cap comes with the setup communication connector (M12).
- * The applicable auto switch (D-M9□) should be ordered separately.
- When using the positioning pin holes on the bottom, use either the one on the body side or the one on the housing side.
- * The table spacer is shipped together with the product but does not come assembled.

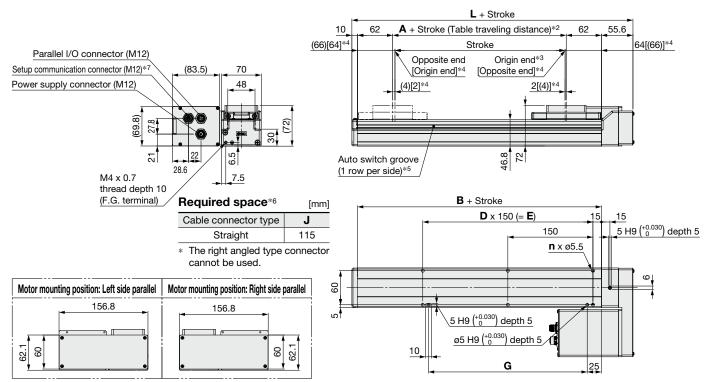
Dimensions [r							[mm]		
Stroke [mm]	L	Α	В	n	D	E	F	G	Н
50				4			20	100	30
100, 150			6 110	4	-	-		100	
200, 250		6		6	2	240		220	
300, 350, 400	159.4			8	3	360		340	
450, 500	159.4			10	4	480	35	460	45
550, 600, 650				12	5	600	1	580	
700, 750				14	6	720		700	
800				16	7	840		820	



Dimensions: Right/Left Side Parallel Motor

Motor option: With lock (16) (176.5) (2)





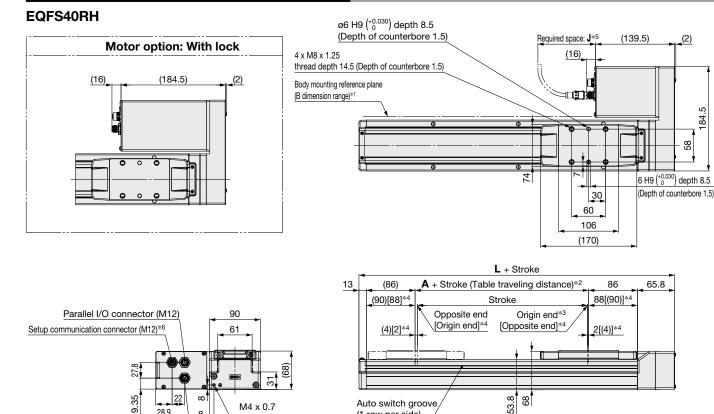
- *1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more. (Recommended height: 5 mm)
 - In addition, be aware that surfaces other than the body mounting reference plane (B dimension range) may slightly protrude from the body mounting reference plane. Be sure to provide a clearance of 1 mm or more to avoid interference with workpieces, facilities, etc.
- *2 The distance the table moves according to movement instructions
 - Make sure that workpieces mounted on the table do not interfere with other workpieces or the facilities around the table.
- *3 Indicates the factory default origin position (0 mm)
- *4 [] refers to when the rotation direction reference is changed.
- *5 The applicable auto switch (D-M9□) should be ordered separately.
- *6 The amount of space required to connect the various cables and mount the product Provide this amount of space for cable handling. Order the cable separately.
- *7 A female dustproof cap comes with the setup communication connector (M12).
- * A switch spacer (BMY3-016) is required to secure auto switches. Please order it separately.
- * When using the positioning pin holes on the bottom, use either the one on the body side or the one on the housing side.
- * The table spacer is shipped together with the product but does not come assembled.

Dimensions							[mm]
Stroke [mm]	L	Α	В	n	D	E	G
50, 100, 150		8		4	_	_	130
200, 250, 300				6	2	300	280
350, 400, 450				8	3	450	430
500, 550, 600	195.6		10	4	600	580	
650, 700, 750				12	5	750	730
800, 850, 900				14	6	900	880
950, 1000				16	7	1050	1030



e-Actuator Easy to Operate Integrated Controller / Slider Type **EQFS** Battery-less Absolute (Step Motor 24 VDC)

Dimensions: Right/Left Side Parallel Motor

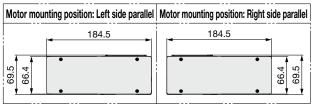


Required space*5 [mm] Cable connector type J Straight 115

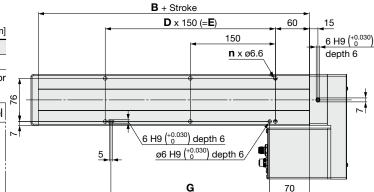
thread depth 8

(F.G. terminal)

The right angled type connector cannot be used.



8



70

*1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more. (Recommended height: 5 mm) In addition, be aware that surfaces other than the body mounting reference plane (B dimension range) may slightly protrude from the body mounting reference plane. Be sure to provide a clearance of 1 mm or more to avoid interference with workpieces, facilities, etc.

(1 row per side)

- The distance the table moves according to movement instructions Make sure that workpieces mounted on the table do not interfere with other workpieces or the facilities around the table.
- *3 Indicates the factory default origin position (0 mm)

Power supply connector (M12)

- *4 [] refers to when the rotation direction reference is changed.
- The amount of space required to connect the various cables and mount the product Provide this amount of space for cable handling. Order the cable separately.
- *6 A female dustproof cap comes with the setup communication connector (M12).
- * The applicable auto switch (D-M9) should be ordered separately.
- A switch spacer (BMY3-016) is required to secure auto switches. Please order it separately.
- When using the positioning pin holes on the bottom, use either the one on the body side or the one on the housing side.
- The table spacer is shipped together with the product but does not come assembled.

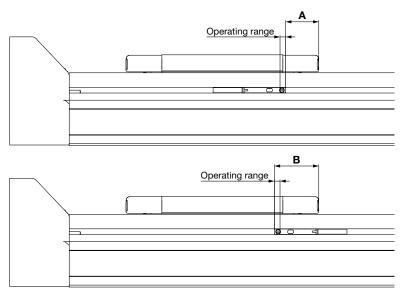
Dimensions [m							
Stroke [mm]	L	Α	В	n	D	E	G
150				4	_	_	130
200, 250, 300		0 170	6	2	300	280	
350, 400, 450			8	3	450	430	
500, 550, 600	256.8		178	10	4	600	580
650, 700, 750	230.0	6	170	12	5	750	730
800, 850, 900	1		14 16	6	900	880	
950, 1000				16	7	1050	1030
1100, 1200	1			18	8	1200	1180



Slider Type/EQFS H Series Auto Switch Mounting

Auto Switch Proper Mounting Position

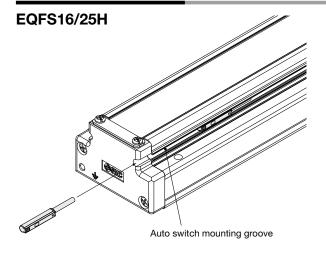
Applicable auto switch: D-M9□, D-M9□E(V), D-M9□W

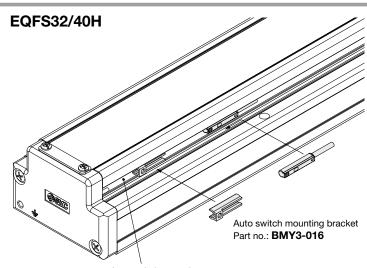


			[iiiiii]
Size	A	В	Operating range
16	12.5	24.5	3.0
25	17.5	23.5	3.0
32	26.3	32.3	3.4
40	32.2	38.2	3.6

En the operating range is a guideline including hysteresis, not meant to be guaranteed. There may be large variations depending on the ambient environment.

Auto Switch Mounting





Auto switch mounting groove

Tightening Torque for Auto Switch Mounting Screw $[N \cdot m]$

[mm]

Auto switch model	Tightening torque
D-M9□ D-M9□E(V) D-M9□W	0.1 to 0.15

- * When tightening the auto switch mounting screw (included with the auto switch), use a watchmaker's screwdriver with a handle diameter of 5 to 6 mm.
- Prepare an auto switch mounting bracket (BMY3-016) when mounting the auto switch on to the EQFS32/40H.



^{*} Adjust the auto switch after confirming the operating conditions in the actual setting.

[mm]

Solid State Auto Switch Direct Mounting Type D-M9N/D-M9P/D-M9B



Grommet

- 2-wire load current is reduced (2.5 to 40 mA).
- Using flexible cable as standard spec.



∆Caution

Precautions

Fix the auto switch with the existing screw installed on the auto switch body. The auto switch may be damaged if a screw other than the one supplied is used.

Auto Switch Specifications

Refer to the SMC website for details on products that are compliant with international standards.

PLC: Programmable Logic Controller

D-M9□ (With	D-M9□ (With indicator light)						
Auto switch model	D-M9N	D-M9P	D-M9B				
Electrical entry direction		In-line					
Wiring type	3-v	vire	2-wire				
Output type	NPN	PNP	_				
Applicable load	IC circuit, I	Relay, PLC	24 VDC relay, PLC				
Power supply voltage	5, 12, 24 VDC	5, 12, 24 VDC (4.5 to 28 V)					
Current consumption	10 mA	or less	_				
Load voltage	28 VDC or less	_	24 VDC (10 to 28 VDC)				
Load current	40 mA	or less	2.5 to 40 mA				
Internal voltage drop	0.8 V or less at 10 mA	(2 V or less at 40 mA)	4 V or less				
Leakage current	100 μA or les	0.8 mA or less					
Indicator light	Red LED illuminates when turned ON.						
Standard		CE/UKCA marking					

Oilproof Flexible Heavy-duty Lead Wire Specifications

Auto switch model		D-M9N	D-M9P	D-M9B
Sheath	Outside diameter [mm]			
Insulator Number of cores Outside diameter [mm]		3 cores (Brow	n/Blue/Black)	2 cores (Brown/Blue)
			ø0.88	
Conductor	Effective area [mm²]		0.15	
Strand diameter [mm]			ø0.05	
Min. bending radius [mm] (Reference values)			17	

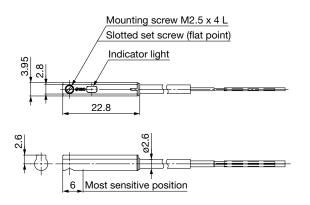
- * Refer to the Web Catalog for solid state auto switch common specifications.
- * Refer to the Web Catalog for lead wire lengths.

Weight

Auto switch model		D-M9N	D-M9N D-M9P	
	0.5 m (Nil)	8		7
Lead wire length	1 m (M)	1	14 41	
Lead wire length	3 m (L)	4		
	5 m (Z)	68		63

Dimensions

D-M9□



Normally Closed Solid State Auto Switch Direct Mounting Type D-M9NE(V)/D-M9PE(V)/D-M9BE(V)



Grommet

- Output signal turns on when no magnetic force is detected.
- Can be used for the actuator adopted by the solid state auto switch D-M9 series (excluding special order products)



∆ Caution

Precautions

Fix the auto switch with the existing screw installed on the auto switch body. The auto switch may be damaged if a screw other than the one supplied is used.

Auto Switch Specifications

Refer to the SMC website for details on products that are compliant with international standards.

PLC: Programmable Logic Controller

D-M9□E, D-M9□EV (With indicator light)						
Auto switch model	D-M9NE	D-M9NEV	D-M9PE	D-M9PEV	D-M9BE	D-M9BEV
Electrical entry direction	In-line	Perpendicular	In-line	Perpendicular	In-line	Perpendicular
Wiring type	3-wire			2-wire		
Output type	NPN PNP			_		
Applicable load	IC circuit, Relay, PLC			24 VDC relay, PLC		
Power supply voltage	5, 12, 24 VDC (4.5 to 28 V)			_		
Current consumption	10 mA or less			-	_	
Load voltage	28 VDC or less —			24 VDC (10	to 28 VDC)	
Load current	40 mA or less			2.5 to	40 mA	
Internal voltage drop	0.8 V or less at 10 mA (2 V or less at 40 mA)			4 V o	r less	
Leakage current	100 μA or less at 24 VDC			0.8 mA	or less	
Indicator light	Red LED illuminates when turned ON.					
Standard	CE/UKCA marking					

Oilproof Flexible Heavy-duty Lead Wire Specifications

Auto switch model		D-M9NE(V)	D-M9PE(V)	D-M9BE(V)
Sheath	Outside diameter [mm]	ø2.6		
Insulator	Number of cores	3 cores (Brown/Blue/Black) 2 cores (Brow		
Ilisulator	Outside diameter [mm]	n]		
Conductor	Effective area [mm²]	0.15		
Conductor	Strand diameter [mm]	ø0.05		
Min. bending radius [mm] (Reference values)			17	

- * Refer to the Web Catalog for solid state auto switch common specifications.
- Refer to the Web Catalog for lead wire lengths.

Weight

[g]

Auto switch model		D-M9NE(V)	D-M9PE(V)	D-M9BE(V)
	0.5 m (Nil) 8		3	7
Lead wire length	1 m (M)*1	14		13
	3 m (L)	41		38
	5 m (Z)*1	6	8	63

^{*1} The 1 m and 5 m options are produced upon receipt of order.

Dimensions [mm]

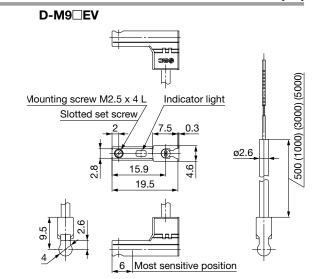
Mounting screw M2.5 x 4 L

Slotted set screw (flat point)

Indicator light

22.8

Most sensitive position



[g]

2-Color Indicator Solid State Auto Switch Direct Mounting Type D-M9NW/D-M9PW/D-M9BW



Grommet

- 2-wire load current is reduced (2.5 to 40 mA).
- Using flexible cable as standard spec.
- The proper operating range can be determined by the color of the light. (Red → Green ← Red)



∆ Caution

Pı	rec:	arīti	ons
П	CC6	auu	UHS

Fix the auto switch with the existing screw installed on the auto switch body. The auto switch may be damaged if a screw other than the one supplied is used.

Auto Switch Specifications

Refer to the SMC website for details on products that are compliant with international standards.

PLC: Programmable Logic Controller

D-M9□W (With indicator light)					
Auto switch model	D-M9NW	D-M9PW	D-M9BW		
Electrical entry direction	In-line In-line				
Wiring type	3-v	2-wire			
Output type	NPN PNP		_		
Applicable load	IC circuit, I	24 VDC relay, PLC			
Power supply voltage	5, 12, 24 VDC (4.5 to 28 V)		_		
Current consumption	10 mA	_			
Load voltage	28 VDC or less —		24 VDC (10 to 28 VDC)		
Load current	40 mA	2.5 to 40 mA			
Internal voltage drop	0.8 V or less at 10 mA (2 V or less at 40 mA)		4 V or less		
Leakage current	100 μA or les	0.8 mA or less			
Indicator light	Operating range Red LED illuminates.				
indicator light	Proper operating range Green LED illuminates.				
Standard	CE/UKCA marking				

Oilproof Flexible Heavy-duty Lead Wire Specifications

Auto switch model		D-M9NW	D-M9PW	D-M9BW
Sheath	Outside diameter [mm]	ø2.6		
Insulator	Number of cores	3 cores (Brown/Blue/Black)		2 cores (Brown/Blue)
irisulator	Outside diameter [mm]	ø0.88		
Effective area [mm²]			0.15	
Conductor	Strand diameter [mm]	ø0.05		
Min. bending radius [mm] (Reference values)			17	

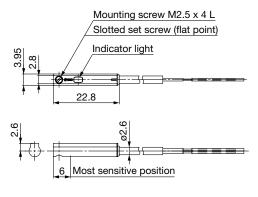
- * Refer to the **Web Catalog** for solid state auto switch common specifications.
- * Refer to the Web Catalog for lead wire lengths.

5 m (**Z**)

Weight

Dimensions [mm]

D-M9□W





⊘SMC

33

e-Actuator

Easy to Operate Integrated Controller / Rod Type

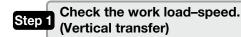


e-Actuator Easy to Operate Integrated Controller EQY H Series (Battery-less Absolute (Step Motor 24 VDC)

Model Selection

Selection Procedure

Positioning Control Selection Procedure



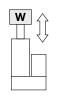


Selection Example

Operating conditions

- Workpiece mass: 10 [kg]
- •Speed: 100 [mm/s]
- •Acceleration/Deceleration: 5000 [mm/s²]
- •Stroke: 200 [mm]
- Workpiece mounting condition: Vertical upward

downward transfer

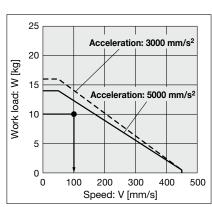


Step 1 Check the work load-speed. <Speed-Vertical work load graph>

Select a model based on the workpiece mass and speed while referencing the speed-vertical work load graph.

Selection example) The EQY25DHB-200 can be temporarily selected as a possible candidate based on the graph shown on the right side.

It is necessary to mount a guide outside the actuator when used for horizontal transfer. When selecting the target model, refer to the horizontal work load in the specifications on page 42 and the precautions.



<Speed-Vertical work load graph> (EQY25HB/Step motor)

Step 2 Check the cycle time.

Calculate the cycle time using the following calculation method.

T can be found from the following equation.

$$T = T1 + T2 + T3 + T4 [s]$$

•T1: Acceleration time and T3: Deceleration time can be found by the following equation.

•T2: Constant speed time can be found from the following equation.

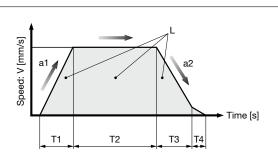
$$T2 = \frac{L - 0.5 \cdot V \cdot (T1 + T3)}{V}$$
 [s]

•T4: Settling time varies depending on the conditions such as actuator types, load, and in position of the step data.

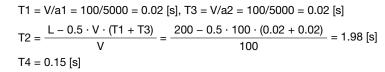
> Reference value for settling time: 0.15 s or less The following value is used for this calculation.

Calculation example)

T1 to T4 can be calculated as follows.



- L: Stroke [mm] ··· (Operating condition)
- V : Speed [mm/s] ··· (Operating condition)
- a1: Acceleration [mm/s²] ··· (Operating condition)
- a2: Deceleration [mm/s2] ··· (Operating condition)
- T1: Acceleration time [s] ... Time until reaching the set speed
- T2: Constant speed time [s] ... Time while the actuator is operating at a constant speed
- T3: Deceleration time [s] \cdots Time from the beginning of the constant speed operation to stop
- T4: Settling time [s] ··· Time until positioning is completed



The cycle time can be found as follows.

$$T = T1 + T2 + T3 + T4 = 0.02 + 1.98 + 0.02 + 0.15 = 2.17$$
 [s]



Selection Procedure

Pushing Control Selection Procedure





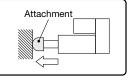
Check the lateral load on the rod end.

* The duty ratio is a ratio of the operation time in one cycle.

Selection Example

Operating conditions

- Mounting condition: Horizontal (pushing)
 Duty ratio: 15 [%]
- Attachment weight: 0.2 [kg]
- Pushing force: 100 [N]
- •Speed: 100 [mm/s]
- •Stroke: 200 [mm]



Step 1 Check the duty ratio.

<Conversion table of pushing force-duty ratio>

Select the [Pushing force] from the duty ratio while referencing the conversion table of pushing force-duty ratio.

Selection example)

Based on the table below,

• Duty ratio: 15 [%]

The pushing force set value will be 50 [%].

<Conversion table of pushing force-duty ratio> (EQY25/Battery-less absolute)

Ambient temperature	Pushing force set value [%]	Duty ratio [%]	Continuous pushing time [min]
40°C or less	50 or less	100	_

- [Pushing force set value] is one of the step data input to the controller.
- [Continuous pushing time] is the time that the actuator can continuously keep pushing.

Step 2 Check the pushing force.

<Force conversion graph>

Select a model based on the pushing force set value and force while referencing the force conversion graph.

Selection example)

Based on the graph shown on the right side,

- Pushing force: 100 [N]
- Pushing force set value: 40 [%]

The **EQY25DHB** can be temporarily selected as a possible candidate.

Step 3 Check the lateral load on the rod end. <Graph of allowable lateral load on the rod end>

Confirm the allowable lateral load on the rod end of the actuator:

EQY25, which has been selected temporarily while referencing the graph of allowable lateral load on the rod end.

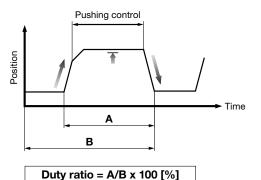
Selection example)

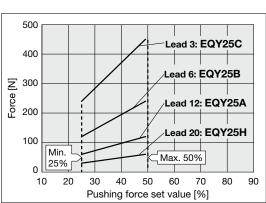
Based on the graph shown on the right side,

- Attachment weight: 0.2 [kg] ≈ 2 [N]
- Product stroke: 200 [mm]

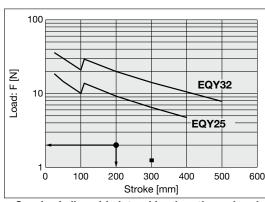
The lateral load on the rod end is in the allowable range.

Based on the above calculation result, the EQY25DHB-200 should be selected.





<Force conversion graph> (EQY25□H/Step motor)



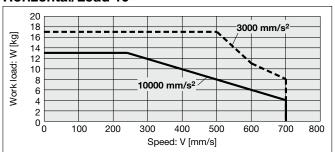
<Graph of allowable lateral load on the rod end>



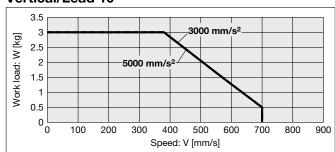
* The following graphs show the values when the external guide is used together.

EQY16□HA

Horizontal/Lead 10

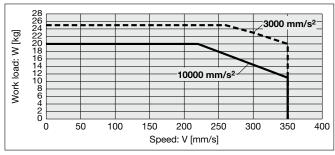


Vertical/Lead 10

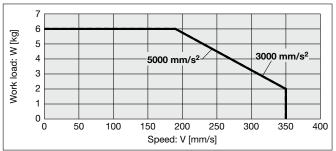


EQY16□HB

Horizontal/Lead 5

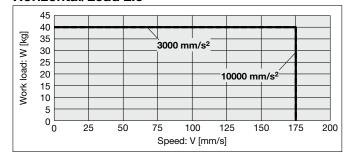


Vertical/Lead 5

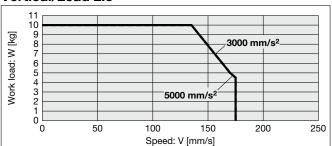


EQY16□HC

Horizontal/Lead 2.5



Vertical/Lead 2.5

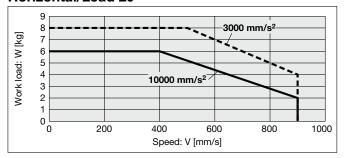




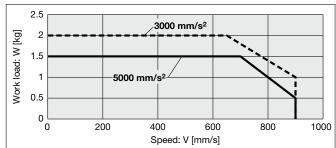
* The following graphs show the values when the external guide is used together.

EQY25□HH

Horizontal/Lead 20

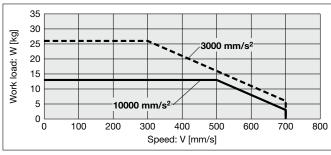


Vertical/Lead 20

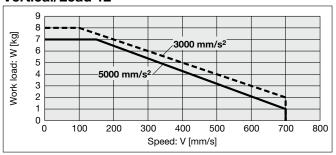


EQY25□HA

Horizontal/Lead 12

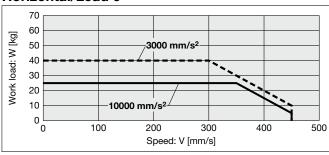


Vertical/Lead 12

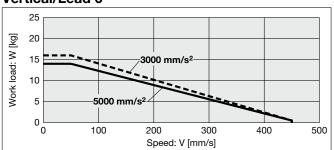


EQY25□HB

Horizontal/Lead 6

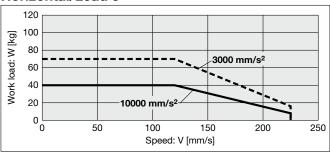


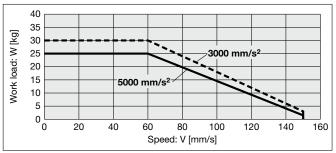
Vertical/Lead 6



EQY25□HC

Horizontal/Lead 3



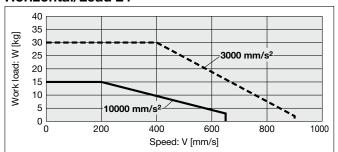




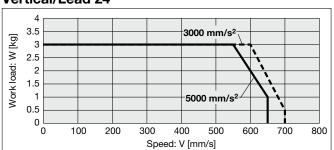
* The following graphs show the values when the external guide is used together.

EQY32□HH

Horizontal/Lead 24

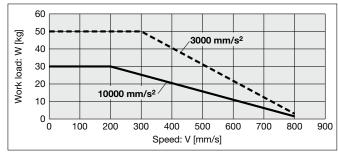


Vertical/Lead 24

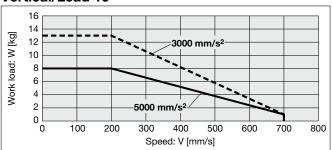


EQY32□HA

Horizontal/Lead 16

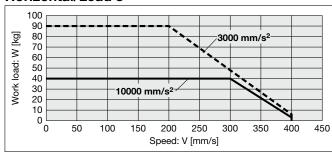


Vertical/Lead 16

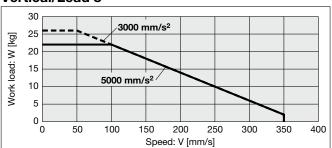


EQY32□HB

Horizontal/Lead 8

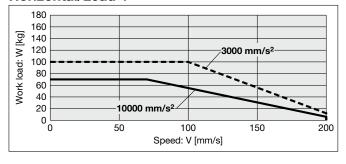


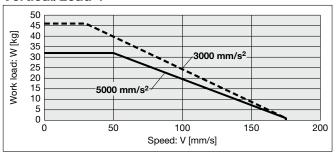
Vertical/Lead 8



EQY32□HC

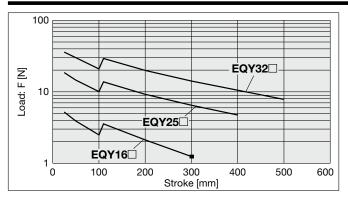
Horizontal/Lead 4



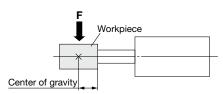




Graph of Allowable Lateral Load on the Rod End (Guide)

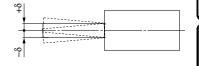


[Stroke] = [Product stroke] + [Distance from the rod end to the center of gravity of the workpiece]

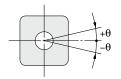


Rod Displacement: δ [mm]

Stroke Size	30	50	100	150	200	250	300	350	400	450	500
16	±0.4	±0.5	±0.9	±0.8	±1.1	±1.3	±1.5	_	-	_	_
25	±0.3	±0.4	±0.7	±0.7	±0.9	±1.1	±1.3	±1.5	±1.7	_	_
32	±0.3	±0.4	±0.7	±0.6	±0.8	±1.0	±1.1	±1.3	±1.5	±1.7	±1.8



Non-rotating Accuracy of Rod

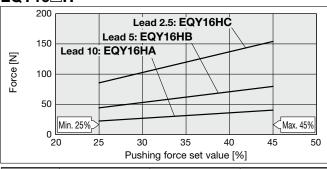


Size	Non-rotating accuracy θ
16	±1.1°
25	±0.8°
32	±0.7°

- * Avoid using the electric actuator in such a way that rotational torque would be applied to the piston rod.
 - Failure to do so may result in the deformation of the non-rotating guide, abnormal auto switch responses, play in the internal guide, or an increase in the sliding resistance.

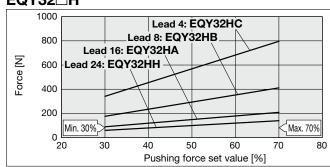
Force Conversion Graph (Guide)

EQY16□H



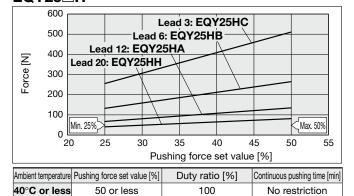
Ambient temperature	Pushing force set value [%]	Duty ratio [%]	Continuous pushing time [min]
40°C or less	45 or less	100	No restriction

EQY32□H



Ambient temperature	Pushing force set value [%]	Duty ratio [%]	Continuous pushing time [min]
40°C or less	70 or less	100	No restriction

EQY25□H



<Set Values for Vertical Upward Transfer Pushing Operations>

For vertical loads (upward), set the pushing force to the max. value shown below and operate at the work load or less.

Model	EQY16			EQY25			EQY32				
Lead	Α	В	С	Н	Α	В	С	Н	Α	В	С
Work load [kg]	1	1.5	3	1	2.5	5	10	2	4.5	9	18
Pushing force		45%			50	%			70	%	

^{*} The values without a load are shown.

Battery-less Absolute (Step Motor 24 VDC)

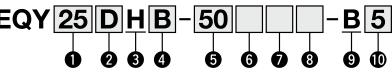
e-Actuator Easy to Operate **Integrated Controller / Rod Type**

EQY□**H** Series EQY16, 25, 32

CE UK ROHS

How to Order





1 Size 16 25

32

2 Motor mounting position/Motor cover direction

Motor mounting position: In-line

Symbol	Symbol Motor cover direction*1			
D	D –			
D1	D1 Left side			
D2	Right side	16		
D3	Top side	10		
D4	Bottom side			

*1 This is the direction seen from the connector side.

Motor mounting position: Parallel

Symbol	Direction	Size
Nil	Top side	
R	Right side	16/25/32
L	Left side	

3 Motor type

_	
Н	Battery-less absolute (Step motor 24 VDC)

4 Lead [mm]

Symbol	EQY16	EQY25	EQY32
Н	_	20	24
Α	10	12	16
В	5	6	8
С	2.5	3	4

EQY16 Motor cover direction

D1 (Left side)	D2 (Right side)	D3 (Top side)	D4 (Bottom side)

Motor mounting position: Parallel

Nil (Top side)	R (Right side)	L (Left side)

5 Stroke [mm]

30	30
to	to
500	500

* For details, refer to the applicable stroke

6 Motor option

Nil	Without option
В	With lock

Rod end thread

Nil	Rod end female thread
М	Rod end male thread (1 rod end nut is included.)

9 Controller position

Parallel input

5	NPN
6	PNP

8 Mounting*2

			М	otor moun	ting positi	on				
Symbol	Type		Parallel		In-line					
		16	25	32	16	25	32			
Nil	Ends tapped* ³ Body bottom tapped	•	•	•	•	•	•			
L	Foot bracket	•	•	•	_	_	_			
F	Rod flange*3 *6	•	•	•	•	•	•			
G	Head flange*5	•	•	_	_	_	_			
D	Double clevis*4	•	•	•	_	_	_			

- *1 Motor mounting position: For the parallel mounting type, the motor units with the following sizes and strokes protrude from the body end. Check for interference with workpieces before selecting a model.
 - ·EQY16 Without lock: 30 mm stroke, With lock: 30, 50 mm strokes
 - EQY25 Without lock: 30 mm stroke, With lock: 30, 50 mm strokes
 - ·EQY32 Without lock: 30 mm stroke, With lock: 30, 50 mm strokes
- *2 The mounting bracket is shipped together with the product but does not come assembled.
- *3 For the horizontal cantilever mounting of the rod flange or ends tapped types, use the actuator within the following stroke range.
 - ·EQY25: 200 or less ·EQY32: 100 or less
- *4 For the mounting of the double clevis type, use the actuator within the following stroke range.
 - EQY16: 100 or less ·EQY25: 200 or less ·EQY32: 200 or less
- *5 The head flange type is not available for the EQY32.
- *6 For the parallel motor mounting position, the rod flange type is not available for the following sizes and strokes. ·EQY16 Without lock: 30 mm stroke, With lock: 30, 50, 100 mm strokes
 - · EQY25 Without lock: 30 mm stroke, With lock: 30, 50 mm strokes

 - · EQY32 Without lock: 30 mm stroke, With lock: 30, 50 mm strokes

Applicable Stroke Table

Applica	JUIC O	UORC	Iabit	-												
Size		Stroke [mm]														
Size	30	50	100	150	200	250	300	350	400	450	500	Manufacturable stroke range				
16	• • • •				•	•	•	_	_	_	_	10 to 300				
25	• • • •		•	•	•	•	•	_	_	15 to 400						
32	32 ● ●		•	•	•	•	•	•	•	•	20 to 500					

The power cable and the parallel I/O cable need to be ordered separately. Refer to page 80 for details.

The auto switches should be ordered separately. For details, refer to pages 51 to 54.



Integrated Controller / Rod Type EQY H Series Battery-less Absolute (Step Motor 24 VDC)

Specifications

		Model		E	QY16□I	Н		EQY2	25□H		EQY32□H				
	Stroke [mm]				30 to 300			30 to	400			30 to	500		
	Work load [kg]*	:1	Horizontal	17	25	40	8	26	40	70	30	50	90	100	
	work load [kg]		Vertical	3	6	10	2	8	16	30	3	13	26	46	
	Pushing force [N]*2 *3 *4		23 to 41	44 to 80	86 to 154	41 to 81	67 to 135	132 to 265	255 to 511	60 to 140	90 to 209	176 to 411	341 to 796	
		<u> </u>	Up to 300	15 to 700	8 to 350	4 to 175	30 to 900	18 to 700	9 to 450	5 to 225	30 to 900	24 to 800	12 to 400	6 to 200	
S	Speed [mm/s]	Stroke range	350 to 400	_	_	_	30 to 900	18 to 600	9 to 300	5 to 150	30 to 900	24 to 640	12 to 320	6 to 160	
ion	•	range	450 to 500	_	_	_	_	_	_	_	30 to 900	24 to 640	12 to 320	6 to 160	
g	Max. accelera	tion/	Horizontal	10000*1											
ciĘi	deceleration [mm/s²]	Vertical						5000*1						
specifications	Pushing speed	d [mm/s]*5			25			3	5			3	0		
	Positioning rep	peatability [mm]	±0.02											
latc	Lost motion [n	nm]* ⁶						(0.1 or less	S					
Actuator	Lead [mm]	10	5	2.5	20	12	6	3	24	16	8	4			
⋖	Impact/Vibrati	on resistan						50/20							
	Actuation type)		Ball screw + Belt (EQY□H), Ball screw (EQY□DH)											
	Guide type			Sliding bushing (Piston rod)											
	Operating tem	perature rai	nge [°C]	5 to 40											
	Operating hun	nidity range	[%RH]	90 or less (No condensation)											
	Enclosure								IP40						
ions	Motor size			□28 □42 □56.4											
specifications	Motor type			Battery-less absolute (Step motor 24 VDC)											
sbec	Encoder							Batter	y-less ab	solute					
Electric	Power supply							24	VDC ±10	%					
E	Power [W]*8 *9	1		Ma	ax. power	82		Max. po	ower 86			Max. po	wer 109		
it ons	Type*10							Non-n	nagnetizin	g lock					
Lock unit specification	Holding force	[N]		29	59	98	20	78	157	294	29	127	255	451	
Loc-	Power [W]*9			2.9 5 5											
- ds	Power supply	voltage [V]						24	VDC ±10	%					

*1 Horizontal: Please use an external guide (friction coefficient: 0.1 or less). The work load shows the maximum value. The actual work load and transfer speed change according to the condition of the external guide.

For the speed, acceleration, and duty ratio according to the work load, check the "Speed-Work Load Graph" in the catalog.

Vertical: If the rod orientation is vertical or radial load is applied to the rod, please use an external guide (friction coefficient: 0.1 or less). The work load represents the maximum value. The actual work load and transfer speed change according to the condition of the external guide.

For the speed, acceleration, and duty ratio according to the work load, check the "Speed-Work Load Graph" in the catalog.

The values shown in () are the max. acceleration/deceleration.

- Set the acceleration/deceleration speed to 10000 [mm/s²] or less for the horizontal direction and 5000 [mm/s²] or less for the vertical direction.
- *2 Pushing force accuracy is ±20% (F.S.).
- *3 The pushing force set values for EQY16□H are 25% to 45%, for EQY25□H are 25% to 50%, and for EQY32□H are 30% to 70%.
 - The pushing force values change according to the duty ratio and pushing speed. Check the "Force Conversion Graph" in the catalog.
- *4 The speed and force may change depending on the cable length, load, and mounting conditions. Furthermore, if the cable length exceeds 5 m, then it will decrease by up to 10% for each 5 m. (At 15 m: Reduced by up to 20%)
- *5 The allowable speed for pushing operation. When push conveying a workpiece, operate at the vertical work load or less.
- *6 A reference value for correcting errors in reciprocal operation
- *7 Impact resistance: No malfunction occurred when the actuator was tested with a drop tester in both an axial direction and a perpendicular direction to the lead screw. (The test was performed with the actuator in the initial state.)
 - Vibration resistance: No malfunction occurred in a test ranging between 45 to 2000 Hz. The test was performed in both an axial direction and a perpendicular direction to the lead screw. (The test was performed with the actuator in the initial state.)
- *8 Indicates the max. power during operation (including the controller). This value can be used for the selection of the power supply.
- *9 For an actuator with lock, add the power for the lock.
- *10 With lock only





Weight

Top/Right/Left Side Parallel Motor

Series				EQY16	3		
Stroke [mm]	30	50	100	150	200	250	300
Product weight [kg]	0.85	0.88	1.01	1.17	1.34	1.45	1.56

Series		EQY25										EQY32								
Stroke [mm]	30	50	100	150	200	250	300	350	400	30	50	100	150	200	250	300	350	400	450	500
Product weight [kg]	1.74	1.81	1.98	2.24	2.42	2.59	2.77	2.94	3.12	2.74	2.85	3.14	3.42	3.82	4.11	4.39	4.68	4.97	5.25	5.54

In-line Motor

Series			E	QY16	D		
Stroke [mm]	30	50	100	150	200	250	300
Product weight [kg]	0.84	0.86	0.99	1.15	1.33	1.44	1.55

Series	EQY25D									EQY32D										
Stroke [mm]	30	50	100	150	200	250	300	350	400	30	50	100	150	200	250	300	350	400	450	500
Product weight [kg]	1.60	1.67	1.84	2.10	2.28	2.45	2.63	2.80	2.98	2.55	2.66	2.95	3.23	3.63	3.92	4.20	4.49	4.78	5.06	5.35

Additional Weight

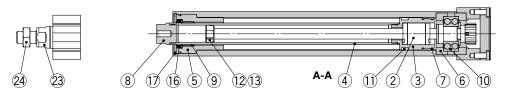
Additional Wei	giit			[kg]
	Size	16	25	32
Lock/Motor cover		0.19	0.33	0.65
Rod end male	Male thread	0.01	0.03	0.03
thread	Nut	0.01	0.02	0.02
Foot bracket (2 sets	including mounting bolt)	0.06	0.08	0.14
Rod flange (includi	ng mounting bolt)	0.13	0.17	0.20
Head flange (include	ling mounting bolt)	0.13	0.17	0.20
Double clevis (including pin	, retaining ring, and mounting bolt)	0.08	0.16	0.22

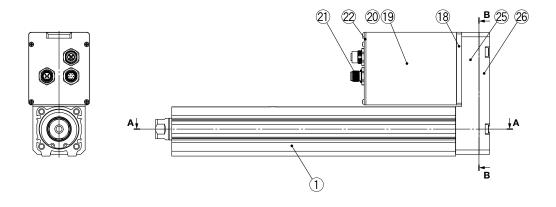


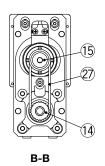
Integrated Controller / Rod Type EQY H Series Battery-less Absolute (Step Motor 24 VDC)

Construction

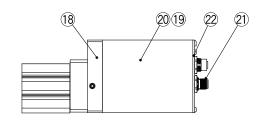
Top/Right/Left side parallel motor







In-line motor



Component Parts

iponent Parts		
Description	Material	Note
Body	Aluminum alloy	Anodized
Ball screw assembly	_	
Piston	Aluminum alloy	
Piston rod	Stainless steel	Hard chrome plating
Rod cover	Aluminum alloy	
Bearing holder	Aluminum alloy	
Rotation stopper	Synthetic resin	
Socket (Female thread)	Free cutting carbon steel	Nickel plating
Bushing	Bearing alloy	
Bearing	_	
Magnet	_	
Wear ring holder	Stainless steel	101 mm stroke or more
Wear ring	Synthetic resin	101 mm stroke or more
Screw pulley/hub	Aluminum alloy	
Motor pulley/hub	Aluminum alloy	
Seal	NBR	
Retaining ring	Steel for spring	
Motor adapter	Aluminum alloy	Anodized
Motor	_	
Motor cover	Aluminum alloy	Anodized
Connector	_	
End cover	Aluminum alloy	Anodized
Socket (Male thread)	Free cutting	Nickel plating/
Socket (iviale tilleau)	carbon steel	Rod end male thread
Hexagon nut	_	Rod end male thread
	Description Body Ball screw assembly Piston Piston rod Rod cover Bearing holder Rotation stopper Socket (Female thread) Bushing Bearing Magnet Wear ring holder Wear ring Screw pulley/hub Motor pulley/hub Seal Retaining ring Motor adapter Motor Motor cover Connector End cover Socket (Male thread)	Description Material Body Aluminum alloy Ball screw assembly — Piston Aluminum alloy Piston rod Stainless steel Rod cover Aluminum alloy Bearing holder Aluminum alloy Rotation stopper Synthetic resin Socket (Female thread) Free cutting carbon steel Bushing Bearing alloy Bearing — Magnet — Wear ring holder Stainless steel Wear ring Synthetic resin Screw pulley/hub Aluminum alloy Motor pulley/hub Aluminum alloy Seal NBR Retaining ring Steel for spring Motor adapter Aluminum alloy Motor — Motor cover Aluminum alloy Connector — End cover Aluminum alloy Free cutting carbon steel

Component Parts (Top/Right/Left side parallel only)

	· · · ·		<u> </u>
No.	Description	Material	Note
25	Return box	Aluminum die-casted	Coating
26	Return plate	Aluminum die-casted	Coating
27	Belt	_	

Replacement Parts (Top/Right/Left side parallel only)/Belt

op.ao	riopiacomoner arto (rop/riigilie zote ciae paramer etii)/ zote										
No.	Size	Order no.									
	16	LE-D-2-7									
27	25	LE-D-19-3									
	32	I F-D-19-4									

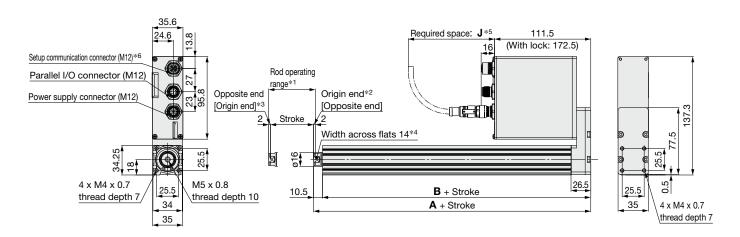
Replacement Parts/Grease Pack

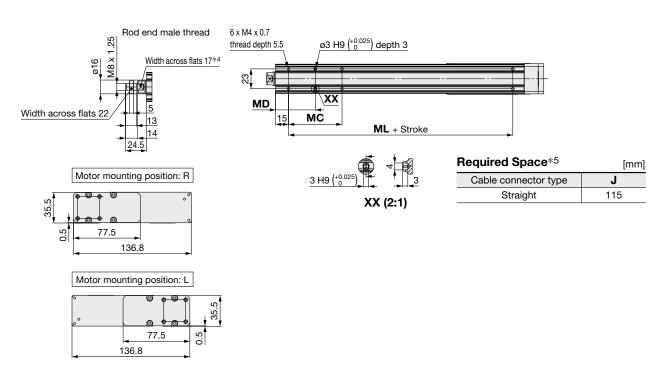
Applied portion	Order no.
Piston rod	GR-S-010 (10 G)
PISIOTITO	GR-S-020 (20 G)



Dimensions: Top Side Parallel Motor

Grease supply port (For 200 mm stroke or more)





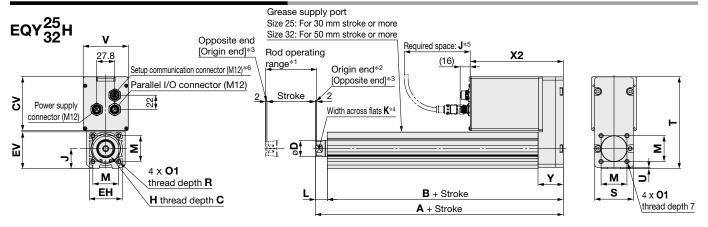
- *1 The range of movement of the rod according to the movement instructions. Make sure that workpieces mounted on the rod do not interfere with other workpieces or the facilities around the rod.
- *2 Indicates the factory default origin position (0 mm)
- *3 [] refers to when the rotation direction reference is changed.
- *4 The direction of the rod end width across flats is different for each single unit, so it is not always the same as the direction in the drawing.
- *5 The amount of space required to connect the various cables and mount the product Provide this amount of space for cable handling. Order the cable separately.
- *6 A female dustproof cap comes with the setup communication connector (M12).

Dimensions [mr									
Stroke [mm]	Α	В	MC	MD	ML				
30	105	94.5	17	23.5	40				
50, 100	103	94.5	32	31	40				
150, 200, 250, 300	125	114.5	62	46	60				

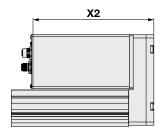


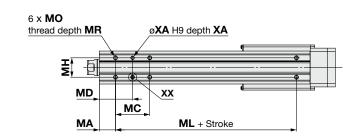
e-Actuator Easy to Operate Integrated Controller / Rod Type $m{EQY}$ Battery-less Absolute (Step Motor 24 VDC)

Dimensions: Top Side Parallel Motor

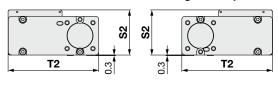


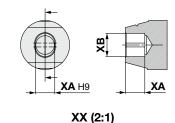
Motor option: With lock





Motor mounting position Left side parallel Right side parallel





Required space*5	[mm]
Cable connector type	J
Straight	115

- The right angled type connector cannot be used.
- *1 The range of movement of the rod according to the movement instructions. Make sure that workpieces mounted on the rod do not interfere with other workpieces or the facilities around the rod.
- *2 Indicates the factory default origin position (0 mm)
- *3 [] refers to when the rotation direction reference is changed.

36

53

70

25

43

51.5

- *4 The direction of rod end width across flats differs depending on the products.
- *5 The amount of space required to connect the various cables and mount the product Provide this amount of space for cable handling. Order the cable separately.
- *6 A female dustproof cap comes with the setup communication connector (M12).

Dimensions

32

101 to 124

125 to 200

201 to 500

[mm] Stroke range <u>X2</u> Size В С D EΗ ΕV Н Κ М 01 S S2 Т **T2** U CV Υ J L R Without lock With lock [mm] 15 to 100 136.2 121.7 25 13 20 44 45.5 M8 x 1.25 24 17 14.5 34 M5 x 0.8 8 46 58.1 115 113.6 1 66.3 57.8 144 184 32.2 101 to 400 161.2 146.7 20 to 100 153.6 135.1 32 13 25 51 56.5 M8 x 1.25 22 18.5 40 10 70.8 140.3 2 83.5 144 39.1 M6 x 1 60 142 69.8 189 101 to 500 183.6 165.1

Boo	dy Bottor	n Tapp	ed							[mm]
Size	Stroke range [mm]	MA	МС	MD	МН	ML	МО	MR	XA	ХВ
25	15 to 39		24	32		50				
	40 to 100		42	41		30	M5 x 0.8	6.5	4	5
25	101 to 124	20	42	41	29					
	125 to 200		59	49.5		75				
	201 to 400		76	58						
	20 to 39		22	36		50				
	40 to 100		00	40		50				

30

8.5

5

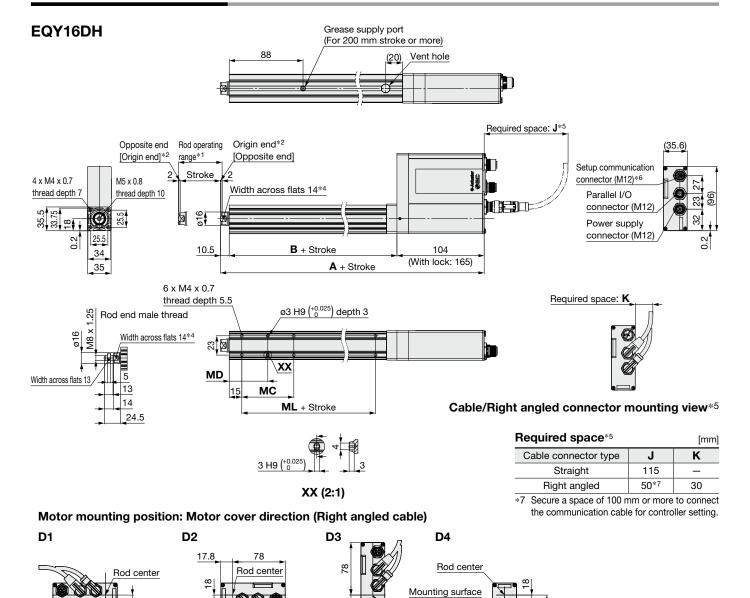
6

M6 x 1

80



Dimensions: In-line Motor



*1 The range of movement of the rod according to the movement instructions. Make sure that workpieces mounted on the rod do not interfere with other workpieces or the facilities around the rod.

od center

*2 Indicates the factory default origin position (0 mm)

8,

17.8

*3 [] refers to when the rotation direction reference is changed.

Body bottom

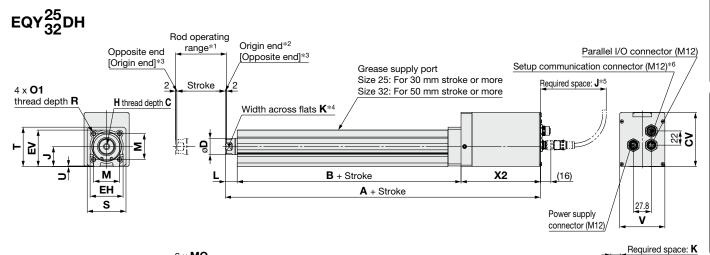
- *4 The direction of the rod end width across flats is different for each single unit, so it is not always the same as the direction in the drawing.
- *5 The amount of space required to connect the various cables and mount the product Provide this amount of space for cable handling. Order the cable separately.
- *6 A female dustproof cap comes with the setup communication connector (M12).

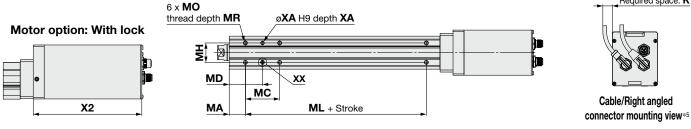
Dimensions [mm									
Stroke [mm]	Without lock	A Without lock With lock		мс	MD	ML			
30	190	251	76.5	17	23.5	40			
50, 100	190	231	70.5	32	31	40			
150, 200, 250, 300	215	276	100.6	62	46	60			

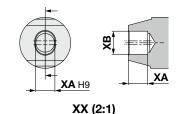


e-Actuator Easy to Operate Integrated Controller / Rod Type ${m EQY}$ Battery-less Absolute (Step Motor 24 VDC)

Dimensions: In-line Motor







Required space*5

[mm] Cable connector type J Κ Straight 115 50*7 25 Right angled

Secure a space of 100 mm or more to connect the communication cable for controller setting.

- *1 The range of movement of the rod according to the movement instructions. Make sure that workpieces mounted on the rod do not interfere with other workpieces or the facilities around the rod.
- *2 Indicates the factory default origin position (0 mm)
- *3 [] refers to when the rotation direction reference is changed.
- The direction of rod end width across flats differs depending on the products.
- The amount of space required to connect the various cables and mount the product Provide this amount of space for cable handling. Order the cable separately.
- *6 A female dustproof cap comes with the setup communication connector (M12).

Dimensions

[mm] **X2** Stroke range Size C D EΗ EV 01 R S Т U ٧ CV В Н J Κ L М Without lock With lock [mm] Without lock With lock 15 to 100 243.4 283.4 102.9 25 13 20 44 45.5 M8 x 1.25 24 17 14.5 34 M5 x 0.8 8 45 46.5 1.5 57.8 126 166 66.6 101 to 400 268.4 308.4 127.9 20 to 100 257.8 302.8 116.3 32 13 25 51 56.5 M8 x 1.25 31 22 18.5 40 M6 x 1 10 60 61 69.8 123 168 83.8 101 to 500 287.8 332.8 146.3

Boo	Body Bottom Tapped [mm											
Size	Stroke range [mm]	MA	МС	MD	МН	ML	МО	MR	XA	ХВ		
	15 to 39		24	32		50						
	40 to 100		42	41	29	50	M5 x 0.8	6.5	4	5		
25	101 to 124	20	42			75						
	125 to 200		59	49.5								
	201 to 400		76	58								
	20 to 39		22	36		50				6		
	40 to 100		36	43		30						
32	101 to 124	25		40	30		M6 x 1	8.5	5			
	125 to 200		53	51.5		80						
	201 to 500		70	60								



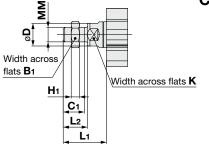
Dimensions

32

22

20.5





Ena r	viaie	Inre	ead					[mm
Size	B ₁	C ₁	ø D	Нı	К	Lı	L ₂	ММ
16	13	12	16	5	14	24.5	14	M8 x 1.25
25	22	20.5	20	8	17	38	23.5	M14 x 1.5

* The L₁ measurement is when the unit is in the original position. At this position, 2 mm at the end.

22 42

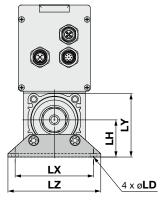
23.5 M14 x 1.5

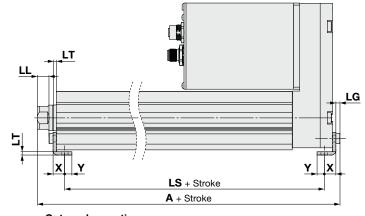
8

- * Refer to the **Web Catalog** for details on the rod end nut and mounting bracket.
- * Refer to the specific product precautions ("Handling") in the **Web Catalog** when mounting end brackets such as knuckle joint or workpieces.

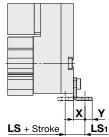


25





Outward mounting



Included parts

- · Foot bracket
- · Body mounting bolt

Foot Bracket

1 001	[mm]													
Size	Stroke range [mm]	Α	LS	LS ₁	LL	LD	LG	LH	LT	LX	LY	LZ	Х	Y
16	30 to 100	106.5	77.1	16 1	16.1 5.4	6.6	2.8	24	2.3	48	40.3	62	9.2	5.8
16	101 to 300	126.5	97.1	10.1			2.0							5.6
25	30 to 100	142.3	104.5	10.0	8.4	8.4 6.6	3.5	30	2.6	.6 57	51.5	71	11.2	5.8
25	101 to 400	167.3	129.5	19.8			3.5	30	2.0					
32	30 to 100	160.8	119.1	19.2	11.0	6.6	4	36	3.2	76	61.5	90	11.2	
	101 to 500	190.8	149.1	19.2	11.3	0.0	4	36	3.2	76	61.5	90	11.2	1

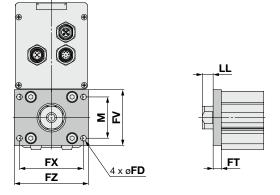
Material: Carbon steel (Chromating)

- * The A measurement is when the unit is in the original position. At this position, 2 mm at the end.
- * When the motor mounting is the right or left side parallel type, the head side foot bracket should be mounted outward.

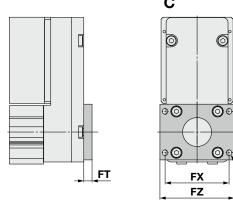
e-Actuator Easy to Operate Integrated Controller / Rod Type **EQY**

Dimensions





H Head flange: EQY 16 H A -□□□G



* The head flange type is not available for the EQY32.

Included parts

- · Flange
 · Body mounting bolt

Rod/Head Flance

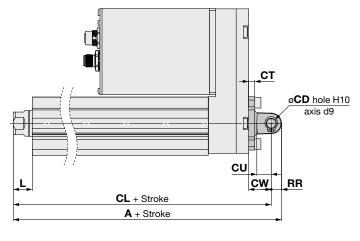
nou/neau rialige									
Size	FD	FT	FV	FX	FZ	LL	М		
16	6.6	8	39	48	60	2.5			
25	5.5	8	48	56	65	6.5	34		
32	5.5	8	54	62	72	10.5	40		

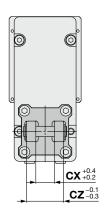
4 x ø**FD**

≥ ≥

Material: Carbon steel (Nickel plating)

Double clevis: EQY 25H A 32 C





Included parts

- · Double clevis
- · Body mounting bolt
- · Clevis pin
- · Retaining ring

For the models and dimensions of the mounting bracket and simple joint bracket, refer to the Web Catalog for the LEY series.

* Refer to the Web Catalog for details on the rod end nut and mounting bracket.

	Double Clevis										[mm]			
	Size	Stroke range [mm]	Α	CL	СВ	CD	СТ	CU	cw	СХ	CZ	L	RR	
	16	30 to 100	128.4	119.4	20	8	5	12	18	8	16	10.5	9	
ĺ	25	30 to 100	166.2	156.2			10	5	14	20	18	36	14.5	10
	25	101 to 200	191.2	181.2		10	٥	14	20	10	30	14.5	10	
	20	30 to 100	185.6	175.6		10	6	14	22	18	36	18.5	10	
32	101 to 200	215.6	205.6	_	10	0	14	22	10	30	18.5	10		

Material: Cast iron (Coating)

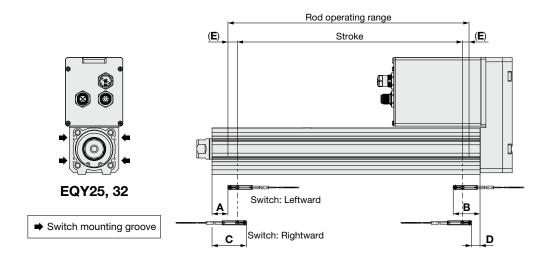
* The A and CL measurements are when the unit is in the original position. At this position, 2 mm at the end.



Rod Type/EQY \(\text{H} \) Series Auto Switch Mounting

Auto Switch Proper Mounting Position

Applicable auto switch: D-M9 \square (V), D-M9 \square E(V), D-M9 \square W(V), D-M9 \square A(V)

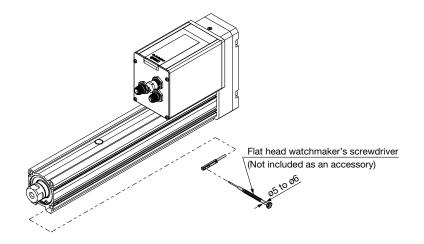


[mm]

			Auto swite	Return to origin	Operating range			
Size	Stroke range	Leftward	mounting	Rightward	d mounting	distance	Operating range	
		Α	В			E	_	
16	30 to 100	21.5	46.5	33.5	34.5	(2)	2.9	
10	105 to 300	41.5	40.5	53.5				
25	30 to 100	27	62.5	39	50.5	(2)	4.2	
25	105 to 400	52	02.5	64	50.5			
20	30 to 100	30.5	GE E	CF F 42.5	50 F	(2)	4.9	
32	105 to 500	60.5	65.5	72.5	53.5			

- The values in the table above are to be used as a reference when mounting auto switches for stroke end detection. Adjust the auto switch after confirming the operating conditions in the actual setting.
- * An auto switch cannot be mounted on the same side as a motor.
- * Since the operating range is provided as a guideline including hysteresis, it cannot be guaranteed (assuming approx. ±30% dispersion). It may change substantially depending on the ambient environment.
- * For the guide rod type (EQYG□H), auto switches cannot be mounted behind the guide attachment (in the bottom groove on the side of the rod that sticks out).

Auto Switch Mounting



Tightening Torque for Auto Switch Mounting Screw

IOI AUTO SWITCH MICE	unting Screw [N·m]
Auto switch model	Tightening torque
D-M9□(V) D-M9□E(V) D-M9□W(V)	0.05 to 0.15
D-M9□A(V)	0.05 to 0.10

* When tightening the auto switch mounting screw (included with the auto switch), use a watchmaker's screwdriver with a handle diameter of 5 to 6 mm.



Solid State Auto Switch Direct Mounting Type D-M9N(V)/D-M9P(V)/D-M9B(V)



Grommet

- 2-wire load current is reduced (2.5 to 40 mA).
- Using flexible cable as standard spec.



∧Caution

Precautions

Fix the auto switch with the existing screw installed on the auto switch body. The auto switch may be damaged if a screw other than the one supplied is used.

Auto Switch Specifications

Refer to the SMC website for details on products that are compliant with international standards.

PLC: Programmable Logic Controller

D-M9 □, D-M9	D-M9□, D-M9□V (With indicator light)								
Auto switch model	D-M9N	D-M9NV	D-M9P	D-M9PV	D-M9B	D-M9BV			
Electrical entry direction	In-line	Perpendicular	In-line	Perpendicular	In-line	Perpendicular			
Wiring type		3-w	/ire		2-v	vire			
Output type	N	PN	PI	NΡ	-	-			
Applicable load		IC circuit, Relay, PLC 24 VDC				elay, PLC			
Power supply voltage	5, 12, 24 VDC (4.5 to 28 V)				_				
Current consumption		10 mA	or less		-	_			
Load voltage	28 VDC	or less	-	_	24 VDC (10 to 28 VDC)				
Load current		40 mA	or less		2.5 to	40 mA			
Internal voltage drop	0.8 V or I	ess at 10 mA	(2 V or less	at 40 mA)	4 V o	r less			
Leakage current	100 μA or less at 24 VDC 0.8 mA or less					or less			
Indicator light	Red LED illuminates when turned ON.								
Standard			CE/UKC/	A marking					

Oilproof Flexible Heavy-duty Lead Wire Specifications

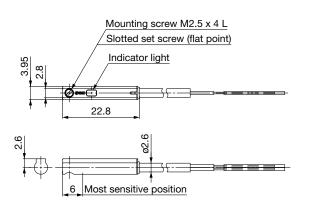
Auto sw	Auto switch model		D-M9N(V) D-M9P(V)		
Sheath	Outside diameter [mm]	ø2.6			
Insulator	Number of cores	3 cores (Brow	2 cores (Brown/Blue)		
Ilisulator	Outside diameter [mm]				
Conductor	Effective area [mm²]		0.15		
Conductor	Strand diameter [mm]	ø0.05			
Min. bending radius	[mm] (Reference values)	17			

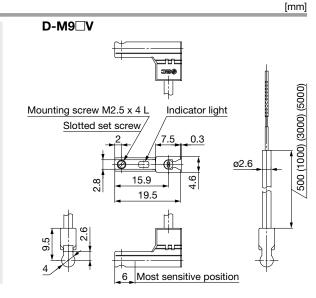
- * Refer to the Web Catalog for solid state auto switch common specifications.
- * Refer to the Web Catalog for lead wire lengths.

Weight

Dimensions

D-M9□





Normally Closed Solid State Auto Switch Direct Mounting Type D-M9NE(V)/D-M9PE(V)/D-M9BE(V)



[g]

Grommet

- Output signal turns on when no magnetic force is detected.
- Can be used for the actuator adopted by the solid state auto switch D-M9 series (excluding special order products)



∆ Caution

Precautions

Fix the auto switch with the existing screw installed on the auto switch body. The auto switch may be damaged if a screw other than the one supplied is used.

Auto Switch Specifications

Refer to the SMC website for details on products that are compliant with international standards.

PLC: Programmable Logic Controller

D-M9□E, D-M9□EV (With indicator light)								
Auto switch model	D-M9NE	D-M9NEV	D-M9PE	D-M9PEV	D-M9BE	D-M9BEV		
Electrical entry direction	In-line	Perpendicular	In-line	Perpendicular	In-line	Perpendicular		
Wiring type		3-v	/ire		2-v	vire		
Output type	N	PN	PI	NΡ	-	-		
Applicable load		IC circuit, I	Relay, PLC		24 VDC r	elay, PLC		
Power supply voltage	5, 12, 24 VDC (4.5 to 28 V) —				-			
Current consumption		10 mA	or less		-	-		
Load voltage	28 VDC	or less	-	-	24 VDC (10	to 28 VDC)		
Load current		40 mA	or less		2.5 to	40 mA		
Internal voltage drop	0.8 V or I	ess at 10 mA	(2 V or less	at 40 mA)	4 V o	r less		
Leakage current	100 μA or less at 24 VDC 0.8 mA or less					or less		
Indicator light		Red LED illuminates when turned ON.						
Standard			CE/UKC/	A marking	-			

Oilproof Flexible Heavy-duty Lead Wire Specifications

Auto swi	tch model	D-M9NE(V) D-M9PE(V) D-M9BE(
Sheath	Outside diameter [mm]	ø2.6				
Insulator	Number of cores	3 cores (Brow	3 cores (Brown/Blue/Black) 2 cores (Brown			
Ilisulator	Outside diameter [mm]	ø0.88				
Conductor	Effective area [mm²]		0.15			
Conductor	Strand diameter [mm]	ø0.05				
Min. bending radius [mm] (Reference values)	17				

- * Refer to the Web Catalog for solid state auto switch common specifications.
- * Refer to the Web Catalog for lead wire lengths.

Weight

Auto switch model		D-M9NE(V)	D-M9PE(V)	D-M9BE(V)
	0.5 m (Nil)	8		7
Landonina lananth	1 m (M)*1	1	13	
Lead wire length	3 m (L)	4	41	
	5 m (Z)*1	6	63	

^{*1} The 1 m and 5 m options are produced upon receipt of order.

Dimensions [mm]

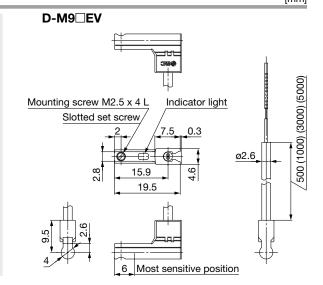
Mounting screw M2.5 x 4 L

Slotted set screw (flat point)

Indicator light

22.8

Most sensitive position



[g]

Options

2-Color Indicator Solid State Auto Switch Direct Mounting Type D-M9NW(V)/D-M9PW(V)/D-M9BW(V)



Grommet

- 2-wire load current is reduced (2.5 to 40 mA).
- Using flexible cable as standard spec.
- The proper operating range can be determined by the color of the light. (Red → Green ← Red)



Precautions

Fix the auto switch with the existing screw installed on the auto switch body. The auto switch may be damaged if a screw other than the one supplied is used.

D-M9□W

Auto Switch Specifications

Refer to the SMC website for details on products that are compliant with international standards.

PLC: Programmable Logic Controller

D-M9□W, D-N	D-M9□W, D-M9□WV (With indicator light)							
Auto switch model	D-M9NW	D-M9NWV	D-M9PW	D-M9PWV	D-M9BW	D-M9BWV		
Electrical entry direction	In-line	Perpendicular	In-line	Perpendicular	In-line	Perpendicular		
Wiring type		3-v	vire		2-v	vire		
Output type	NF	PN	PI	NΡ	-	_		
Applicable load		IC circuit, I	Relay, PLC		24 VDC r	elay, PLC		
Power supply voltage	ţ	5, 12, 24 VDC (4.5 to 28 V) —				_		
Current consumption		10 mA	or less		-	_		
Load voltage	28 VDC	or less	-	_	24 VDC (10	to 28 VDC)		
Load current		40 mA	or less		2.5 to	40 mA		
Internal voltage drop	0.8 V or I	ess at 10 mA	(2 V or less	at 40 mA)	4 V o	r less		
Leakage current		100 μA or les	ss at 24 VDC		0.8 mA	or less		
Indicator light	Operating range Red LED illuminates.							
	P	roper operat	ing range ····	····· Green LE	D illuminate	S.		
Standard			CE/UKC/	A marking				

Oilproof Flexible Heavy-duty Lead Wire Specifications

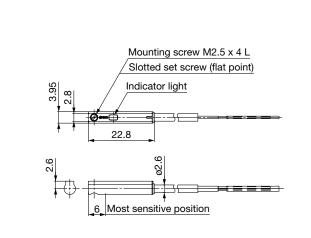
Auto swi	tch model	D-M9NW(V)	D-M9BW(V)			
Sheath	Outside diameter [mm]	ø2.6				
Insulator	Number of cores	3 cores (Brown/Blue/Black) 2 cores (Brown				
irisulator	Outside diameter [mm]	ø0.88				
Conductor	Effective area [mm²]		0.15			
Conductor	Strand diameter [mm]	ø0.05				
Min. bending radius [mm] (Reference values)		17			

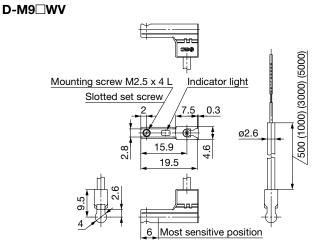
- * Refer to the **Web Catalog** for solid state auto switch common specifications.
- * Refer to the Web Catalog for lead wire lengths.

Weight

Auto switch model		D-M9NW(V)	D-M9PW(V)	D-M9BW(V)	
	0.5 m (Nil)	8		7	
Lead wire length	1 m (M)	1	13		
Lead wire length	3 m (L)	4	41		
	5 m (Z)	6	68		

Dimensions [mm]



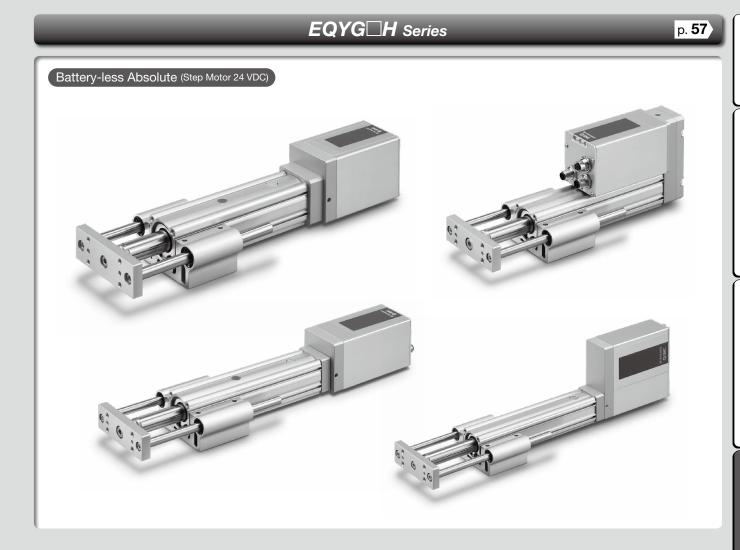


Model Selection

56

e-Actuator

Easy to Operate Integrated Controller / Guide Rod Type





Moment Load Graph

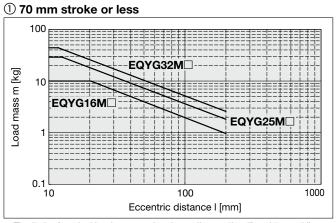
Selection conditions

		Vertical	Horizontal		
Μ	lounting position		·m	<u>L</u> .m	
М	ax. speed [mm/s]	"Speed-Work Load Graph"	200 or less	Over 200	
Pooring	Sliding bearing	Graphs ①, ②	Graphs ⑤, ⑥*1	Graphs ⑦, ⑧*1	
Bearing	Ball bushing bearing	Graphs ③, ④	Graphs (9), (10)	Graphs (1), (12)	

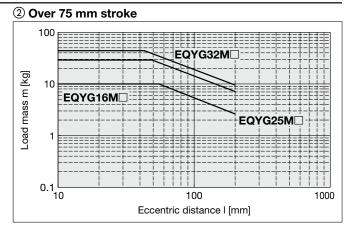
 $[\]ast 1$ For the sliding bearing type, the speed is restricted with a horizontal/moment load.

Vertical Mounting, Sliding Bearing

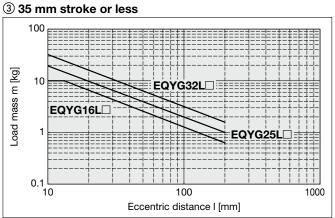
* The limit of vertical load mass varies depending on the lead and transfer speed. Check the "Speed-Work Load Graph."



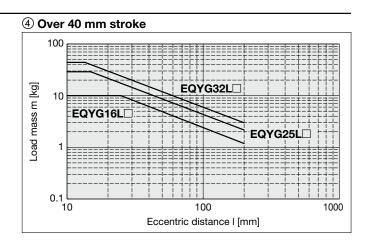
^{*} The limit of vertical load mass varies depending on "lead" and "speed." Check the "Speed-Work Load Graph" on pages 59 to 64.



Vertical Mounting, Ball Bushing Bearing



* The limit of vertical load mass varies depending on "lead" and "speed." Check the "Speed-Work Load Graph" on pages 59 to 64.

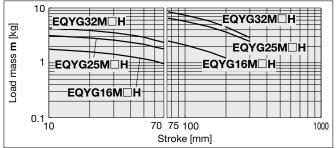


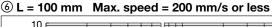


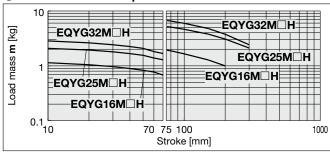
Moment Load Graph

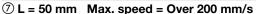
Horizontal Mounting, Sliding Bearing

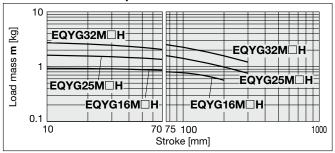




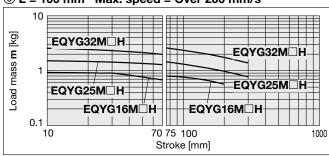






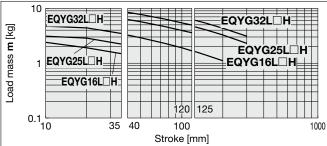


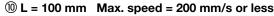
8 L = 100 mm Max. speed = Over 200 mm/s

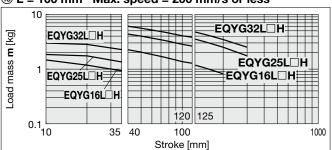


Horizontal Mounting, Ball Bushing Bearing

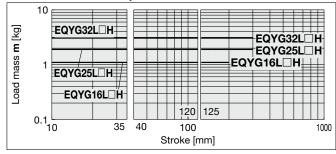
9 L = 50 mm Max. speed = 200 mm/s or less



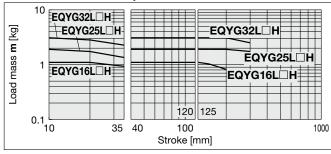




① L = 50 mm Max. speed = Over 200 mm/s

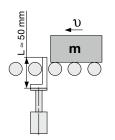


① L = 100 mm Max. speed = Over 200 mm/s



Operating Range when Used as a Stopper

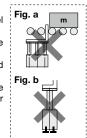
EQYG□M (Sliding bearing)

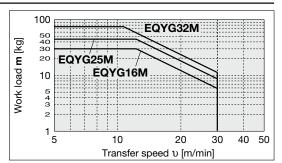


∆ Caution

Handling Precautions

- When used as a stopper, select a model with a stroke of 30 mm or less.
- EQYG L (ball bushing bearing) cannot be used as a stopper.
- Workpiece collision in series with guide rod cannot be permitted (Fig. a).
- The body should not be mounted on the end. It must be mounted on the top or bottom (Fig. b).



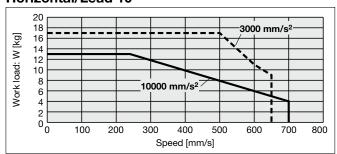




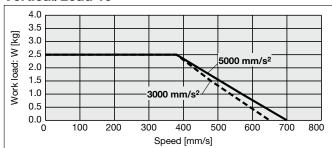
* The following graphs show the values when the external guide is used together.

EQYG16LHA

Horizontal/Lead 10

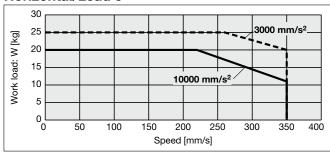


Vertical/Lead 10

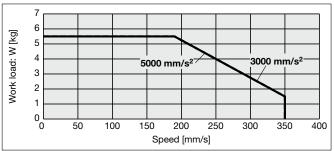


EQYG16LHB

Horizontal/Lead 5

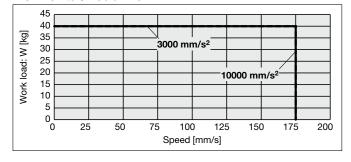


Vertical/Lead 5

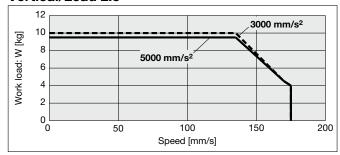


EQYG16LHC

Horizontal/Lead 2.5



Vertical/Lead 2.5



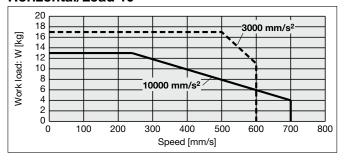
Model Selection E-Actuator Easy to Operate EASY TO Operate EASY TO Operate EASY TO Operate Battery-less Absolute (Step Motor 24 VDC)

Speed-Work Load Graph (Guide)

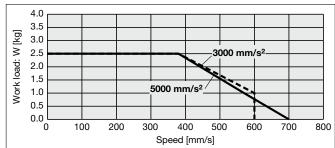
* The following graphs show the values when the external guide is used together.

EQYG16MHA

Horizontal/Lead 10

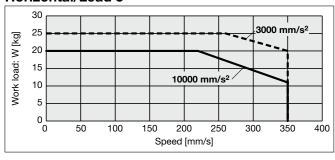


Vertical/Lead 10

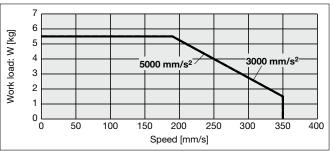


EQYG16MHB

Horizontal/Lead 5

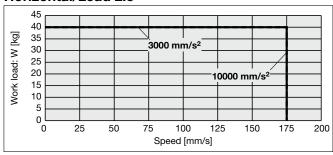


Vertical/Lead 5

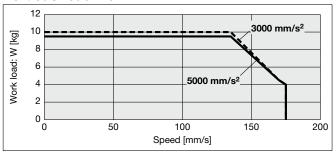


EQYG16MHC

Horizontal/Lead 2.5



Vertical/Lead 2.5

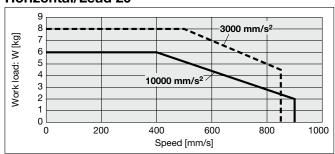




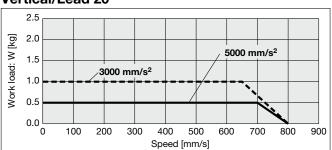
* The following graphs show the values when the external guide is used together.

EQYG25LHH

Horizontal/Lead 20

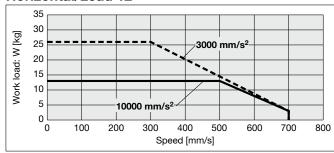


Vertical/Lead 20

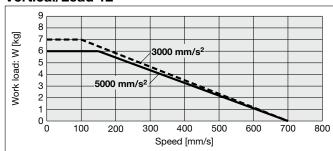


EQYG25LHA

Horizontal/Lead 12

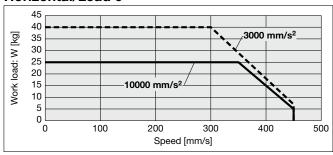


Vertical/Lead 12

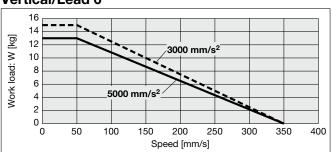


EQYG25LHB

Horizontal/Lead 6

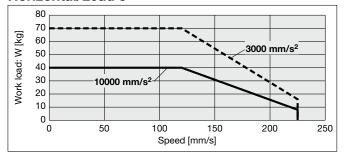


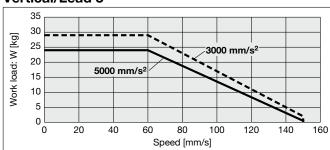
Vertical/Lead 6



EQYG25LHC

Horizontal/Lead 3



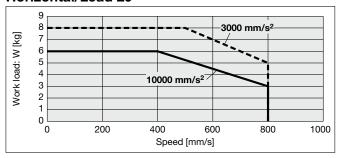




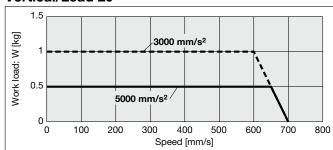
* The following graphs show the values when the external guide is used together.

EQYG25MHH

Horizontal/Lead 20

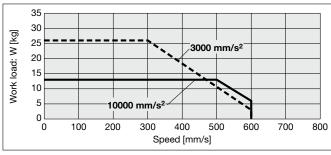


Vertical/Lead 20

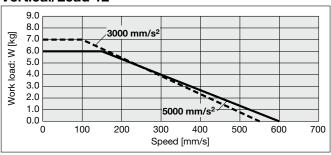


EQYG25MHA

Horizontal/Lead 12

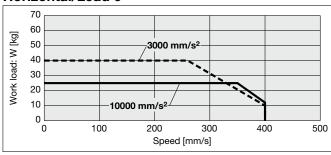


Vertical/Lead 12

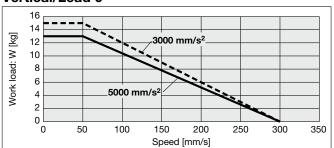


EQYG25MHB

Horizontal/Lead 6

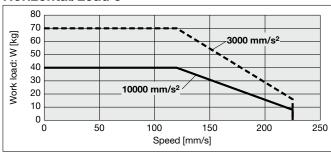


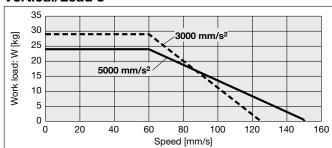
Vertical/Lead 6



EQYG25MHC

Horizontal/Lead 3



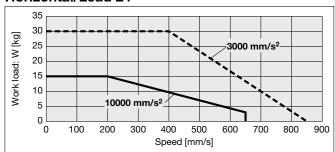




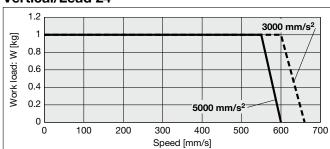
* The following graphs show the values when the external guide is used together.

EQYG32LHH

Horizontal/Lead 24

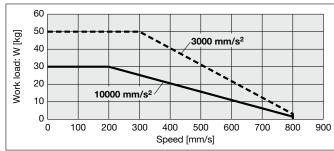


Vertical/Lead 24

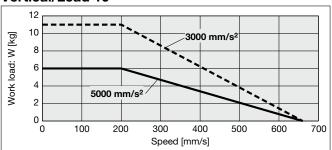


EQYG32LHA

Horizontal/Lead 16

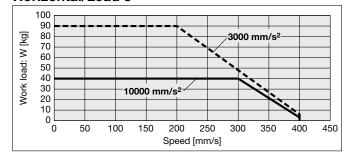


Vertical/Lead 16

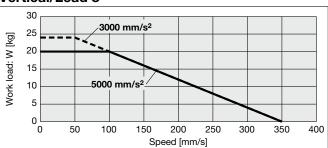


EQYG32LHB

Horizontal/Lead 8

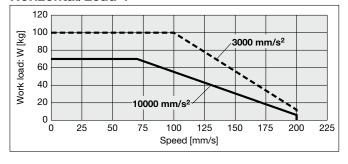


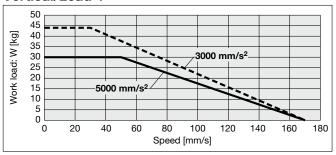
Vertical/Lead 8



EQYG32LHC

Horizontal/Lead 4





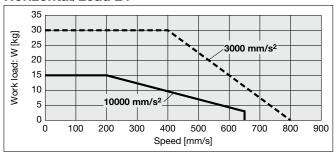
Model Selection Easy to Operate Easy to Operate

Speed-Work Load Graph (Guide)

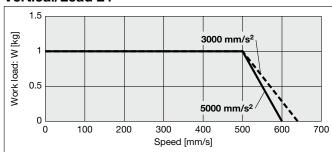
* The following graphs show the values when the external guide is used together.

EQYG32MHH

Horizontal/Lead 24

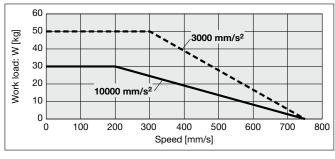


Vertical/Lead 24

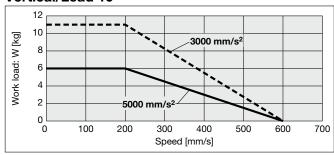


EQYG32MHA

Horizontal/Lead 16

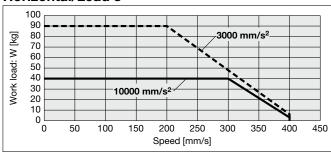


Vertical/Lead 16

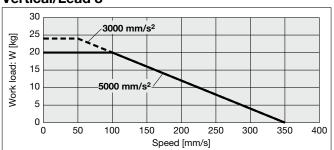


EQYG32MHB

Horizontal/Lead 8

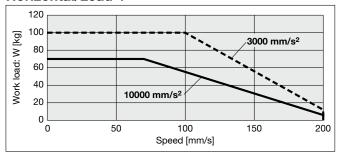


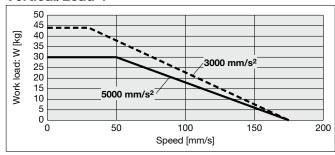
Vertical/Lead 8



EQYG32MHC

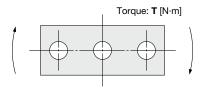
Horizontal/Lead 4





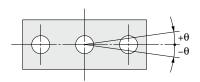


Allowable Rotational Torque of Plate: T



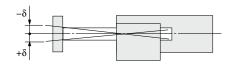
					T [N⋅m]		
Model		Stroke [mm]					
Model	30	50	100	200	300		
EQYG16M	0.70	0.57	1.05	0.56	_		
EQYG16L	0.82	1.48	0.97	0.57	_		
EQYG25M	1.56	1.29	3.50	2.18	1.36		
EQYG25L	1.52	3.57	2.47	2.05	1.44		
EQYG32M	2.55	2.09	5.39	3.26	1.88		
EQYG32L	2.80	5.76	4.05	3.23	2.32		

Non-rotating Accuracy of Plate: $\boldsymbol{\theta}$



Size	Non-rotating	g accuracy θ
Size	EQYG□M	EQYG□L
16	0.06°	0.05°
25	0.06	0.04°
32	0.05°	0.04

Plate Displacement: δ



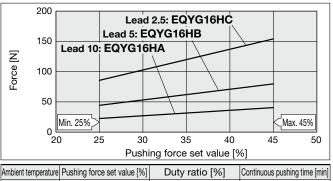
					[mm]
			Stroke [mm]		
Model	30	50	100	200	300
EQYG16M	±0.20	±0.25	±0.24	±0.27	_
EQYG16L	±0.13	±0.12	±0.17	±0.19	_
EQYG25M	±0.26	±0.31	±0.25	±0.38	±0.36
EQYG25L	±0.13	±0.13	±0.17	±0.20	±0.23
EQYG32M	±0.23	±0.29	±0.23	±0.36	±0.34
EQYG32L	±0.11	±0.11	±0.15	±0.19	±0.22

^{*} The values without a load are shown.

e-Actuator Easy to Operate Model Selection **EQYG** Battery-less Absolute (Step Motor 24 VDC)

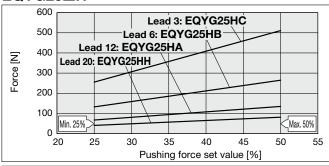
Force Conversion Graph (Guide)

EQYG16□H



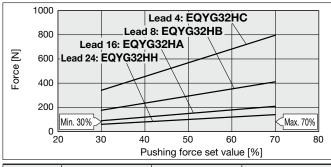
Ambient temperature	Pushing force set value [%]	Duty ratio [%]	Continuous pushing time [min
40°C or less	45 or less	100	No restriction

EQYG25□H



Ambient temperature	Pushing force set value [%]	Duty ratio [%]	Continuous pushing time [min]
40°C or less	50 or less	100	No restriction

EQYG32□H



Ambient temperature	Pushing force set value [%]	Duty ratio [%]	Continuous pushing time [min]
40°C or less	70 or less	100	No restriction

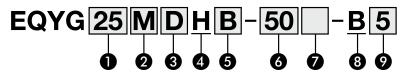
<Set Values for Vertical Upward Transfer Pushing Operations>

For vertical loads (upward), set the pushing force to the max. value shown below and operate at the work load or less.

Model	EQ	EQYG16 ^M □		E	QYG	25 ^M		E	QYG	32 ^M	
Lead	Α	В	С	Н	Α	В	С	Н	Α	В	C
Work load [kg]	0.5	1	2.5	0.5	1.5	4	9	0.5	2.5	7	16
Pushing force		45%			50	%			70	%	

How to Order





1 Size

_	
16	
25	
32	

2 Bearing type

M	Sliding bearing
L	Ball bushing bearing

3 Motor mounting position/Motor cover direction*1 *2

Symbol	Motor mounting position	Motor cover direction	Size
Nil	Top side parallel	_	16/25/32
D		_	25/32
D1		Left side	
D2	In-line	Right side	16
D3		Top side	16
D4		Bottom side	

4 Motor type

Н	Battery-less absolute
	(Step motor 24 VDC)

5 Lead [mm]

Symbol	EQYG16	EQYG25	EQYG32
Н	_	20	24
Α	10	12	16
В	5	6	8
С	2.5	3	4

6 Stroke [mm]

30	30
to	to
300	300

* For details, refer to the applicable stroke

Motor option

Nil	Without option
В	With lock

8 Controller position

B Integrated controller	
-------------------------	--

Parallel input

	<u> </u>
5	NPN
6	PNP

Applicable Stroke Table

Size					Stroke	e [mm]		
Size	30	50	100	150	200	250	300	Manufacturable stroke range
16	•	•	•	•	•	_	_	10 to 200
25	•	•	•	•	•	•	•	15 to 300
32	•	•	•	•	•	•	•	20 to 300

- *1 Motor mounting position: For the parallel mounting type, the motor units with the following sizes and strokes protrude from the body end. Check for interference with workpieces before selecting a model.
 - ·EQYG16 Without lock: 30 mm stroke, With lock: 30, 50 mm strokes
 - ·EQYG25 Without lock: 30 mm stroke, With lock: 30, 50 mm strokes ·EQYG32 Without lock: 30 mm stroke, With lock: 30, 50 mm strokes
- *2 There is a limit for mounting size 25/32 top side parallel motor types and strokes of 100 mm or less.

For details on auto switches, refer to pages 51 to 54.

Use of auto switches for the guide rod type/EQYG

- · Auto switches must be inserted from the front side with the rod (plate) sticking out.
- · Auto switches cannot be mounted behind the guide attachment (in the bottom groove on the side of the rod that sticks out).
- ·Contact SMC when mounting an auto switch in the bottom groove on the side of the rod that sticks out is required, as this is only available as a special order.



Specifications

	Model		EC	QYG16 ^M □]H		EQYG2	25 ^M □H		EQYG32 ^M □H						
	Stroke [mm]			30 to 200			30 to	300			30 to	300				
	Work load [kg]*1	Horizontal	17	25	40	8	26	40	70	30	50	90	100			
	Work load [kg]	Vertical	2.5	5.5	10	1	7	15	29	1	11	24	44			
	Pushing force [N]*2 *3 *4		23 to 41	44 to 80	86 to 154	41 to 81	67 to 15	132 to 265	255 to 511	60 to 140	90 to 209	176 to 411	341 to 796			
ဟ	Speed [mm/s]		15 to 700	15 to 700 8 to 350 4 to 175 30 to 900 18 to 700 9 to 450 5 to 225 30 to 850 24 to 800 12 to 400 6 to 2												
<u>.</u>	Max. acceleration/	Horizontal	10000													
specifications	deceleration [mm/s ²]	Vertical	5000													
i iii	Pushing speed [mm/s ²]*5			25			3	5			3	0				
) be	Positioning repeatability [r	nm]		±0.02												
	Lost motion [mm]*6			0.1 or less												
Actuator	Lead [mm]		10	5	2.5	20	12	6	3	24	16	8	4			
달	Impact/Vibration resistance	e [m/s²]*7	50/20													
•	Actuation type		Ball screw + Belt (EQYG□□H), Ball screw (EQYG□□DH)													
	Guide type		Sliding bearing (EQYG□M), Ball bushing bearing (EQYG□L)													
	Operating temperature ran	ıge [°C]	5 to 40													
	Operating humidity range	[%RH]					90 or less	(No cond	lensation)							
	Enclosure							IP40				,				
tions	Motor size			□28							□5	6.4				
Electric specifications	Motor type					Battery	-less abs	olute (Ste	o motor 2	4 VDC)						
sbec	Encoder					E		ss absolut		r						
tric	Power supply voltage [V]						24	VDC ±10	%			,				
ä	Power [W]*8 *9		Ma	x. power	82			ower 86			Max. po	wer 109				
it	Type*10		Non-magnetizing lock													
Lock unit specification	Holding force [N]	25	54	98	10 69 147 284				10	108	235	431				
Cocl	Power [W]*9	2.9 5 5														
_ g	Rated voltage [V]	24 VDC ±10%														

^{*1} Horizontal: Please use an external guide (friction coefficient: 0.1 or less). The work load shows the maximum value. The actual work load and transfer speed change according to the condition of the external guide.

For the speed, acceleration, and duty ratio according to the work load, check the "Speed-Work Load Graph" in the catalog.

Vertical: If the rod orientation is vertical or radial load is applied to the rod, please use an external guide (friction coefficient: 0.1 or less). The work load represents the maximum value. The actual work load and transfer speed change according to the condition of the external guide.

For the speed, acceleration, and duty ratio according to the work load, check the "Speed-Work Load Graph" in the catalog.

The values shown in () are the max. acceleration/deceleration.

 $Set the acceleration/deceleration speed to 10000 \ [mm/s^2] \ or less for the horizontal \ direction \ and 5000 \ [mm/s^2] \ or less for the vertical \ direction.$

- *2 Pushing force accuracy is ±20% (F.S.).
- *3 The pushing force set values for EQYG16□H are 25% to 45%, for EQYG25□H are 25% to 50%, and for EQYG32□H are 30% to 70%.
 - The pushing force values change according to the duty ratio and pushing speed. Check the "Force Conversion Graph" on page 66.
- *4 The speed and force may change depending on the cable length, load, and mounting conditions. Furthermore, if the cable length exceeds 5 m, then it will decrease by up to 10% for each 5 m. (At 15 m: Reduced by up to 20%)
- *5 The allowable speed for pushing operation. When push conveying a workpiece, operate at the vertical work load or less.
- *6 A reference value for correcting errors in reciprocal operation
- *7 Impact resistance: No malfunction occurred when the actuator was tested with a drop tester in both an axial direction and a perpendicular direction to the lead screw. (The test was performed with the actuator in the initial state.)
 - Vibration resistance: No malfunction occurred in a test ranging between 45 to 2000 Hz. The test was performed in both an axial direction and a perpendicular direction to the lead screw. (The test was performed with the actuator in the initial state.)
- *8 Indicates the max. power during operation (including the controller). This value can be used for the selection of the power supply.
- *9 For an actuator with lock, add the power for the lock.
- *10 With lock only



e-Actuator Easy to Operate

Integrated Controller / Guide Rod Type EQYG H Series Battery-less Absolute (Step Motor 24 VDC)

Weight

Top Side Parallel Motor

Series	Series EQYG16M □ H							EQY	G25N	1□H		EQYG32M□H								
Stroke [mm]	30	50	100	150	200	30	50	100	150	200	250	300	30	50	100	150	200	250	300	
Product weight [kg]	Product weight [kg] 1.10 1.23 1.48 1.79 2.0			2.02	2.23 2.42 2.74 3.16 3.50 3.84 4.10							3.56 3.82 4.37 4.93 5.60 6.09 6.5						6.53		
Additional weight with lock [kg]	dditional weight with lock [kg] 0.19					0.31								0.58						

Series		EQ	/G16L	.□H			EQYG25L□H EQYG32L□H													
Stroke [mm]	30	50	100	150	200	30	50	100	150	200	250	300	30	50	100	150	200	250	300	
Product weight [kg]	1.11	1.23	1.42	1.73	1.94	2.24 2.45 2.69 3.12 3.38 3.70 3.94							4 3.56 3.83 4.22 4.77 5.31 5.82 6.2							
Additional weight with lock [kg]	tional weight with lock [kg] 0.19					0.31								0.58						

In-line Motor

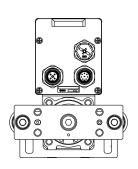
Series		EQY	′G16N	Л□Н				EQY	'G25N	I□H			EQYG32M□H									
Stroke [mm]	30	50	100	150	200	30	50	100	150	200	250	300	30	50	100	150	200	250	300			
Product weight [kg]	Product weight [kg] 1.09 1.21 1.46 1.77 2.01				2.01	2.09	2.09 2.28 2.60 3.02 3.36 3.70 3.96							3 3.37 3.63 4.18 4.74 5.41 5.90 6.3								
Additional weight with lock [kg]	vith lock [kg] 0.19					0.31							0.58									

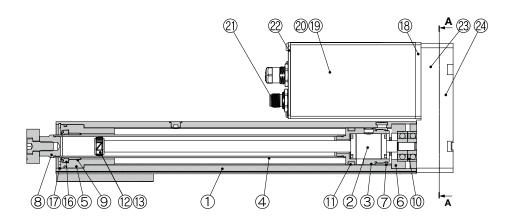
Series		EQ'	YG16L	.□ H				EQ	/G25L	.□ H					EQ'	/G32L	.□ H		
Stroke [mm]	30	50	100	150	200	30	50	100	150	200	250	300	30	50	100	150	200	250	300
Product weight [kg]	ct weight [kg] 1.10 1.21 1.40 1.71 1.9				1.93	2.10 2.31 2.55 2.98 3.24 3.56 3.80						0 3.37 3.64 4.03 4.58 5.12 5.63 6.02							
Additional weight with lock [kg]	Iditional weight with lock [kg] 0.19					0.31									0.58				

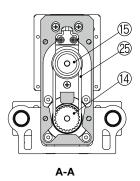


Construction

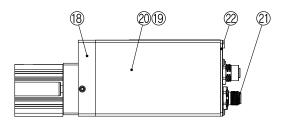
Top side parallel motor







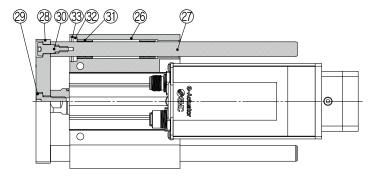
In-line motor



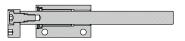
Integrated Controller / Guide Rod Type **EQYG**

Construction

EQYG M



EQYG□M: 50st or less



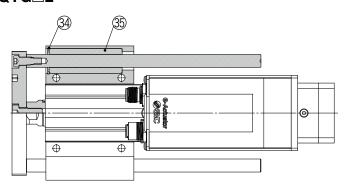
e-Actuator Easy to Operate

Battery-less Absolute (Step Motor 24 VDC)

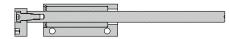
EQYG□M: Over 50st



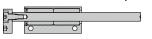
EQYG L



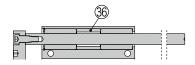
EQYG16L: 30st or less EQYG₃₂²⁵L: 100st or less



EQYG16L: Over 30st, 100st or less



EQYG□L: Over 100st



ompopont Parts

Com	ponent Parts		
No.	Description	Material	Note
1	Body	Aluminum alloy	Anodized
2	Ball screw assembly	_	
3	Piston	Aluminum alloy	
4	Piston rod	Stainless steel	Hard chrome plating
5	Rod cover	Aluminum alloy	
6	Bearing holder	Aluminum alloy	
7	Rotation stopper	Synthetic resin	
8	Socket (Female thread)	Free cutting carbon steel	Nickel plating
9	Bushing	Bearing alloy	
10	Bearing	_	
_11	Magnet	_	
12	Wear ring holder	Stainless steel	101 mm stroke or more
13	Wear ring	Synthetic resin	101 mm stroke or more
14	Screw pulley/hub	Aluminum alloy	
15	Motor pulley/hub	Aluminum alloy	
16	Seal	NBR	
17	Retaining ring	Steel for spring	
18	Motor adapter	Aluminum alloy	Anodized
19	Motor	_	
20	Motor cover	Aluminum alloy	Anodized
21	Connector	_	
22	End cover	Aluminum alloy	Anodized
23	Return box	Aluminum die-casted	Coating
24	Return plate	Aluminum die-casted	Coating
25	Belt	_	
26	Guide attachment	Aluminum alloy	Anodized
27	Guide rod	Carbon steel	
28	Plate	Aluminum alloy	Anodized

No.	Description	Material	Note
29	Plate mounting cap screw	Carbon steel	Nickel plating
30	Guide cap screw	Carbon steel	Nickel plating
31	Sliding bearing	Bearing alloy	
32	Soft wiper	Felt	
33	Holder	Synthetic resin	
34	Retaining ring	Steel for spring	Phosphate coating
35	Ball bushing	_	
36	Spacer	Aluminum alloy	Chromating

Replacement Parts (Top side parallel only)/Belt

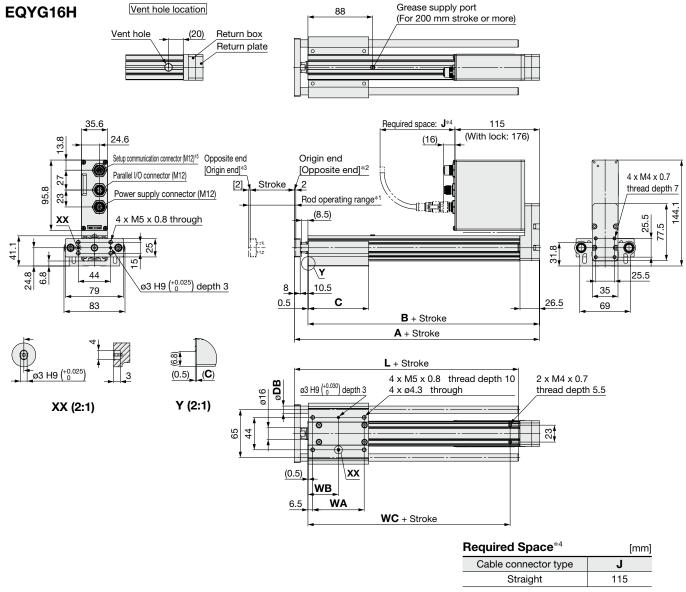
No.	Size	Order no.
	16	LE-D-2-7
25	25	LE-D-19-3
	32	LE-D-19-4

Replacement Parts/Grease Pack

Applied portion	Order no.
Piston rod	GR-S-010 (10 G)
PISION TOU	GR-S-020 (20 G)



Dimensions: Top Side Parallel Motor



- * The right angled type connector cannot be used.
- *1 The range of movement of the rod according to the movement instructions. Make sure that workpieces mounted on the rod do not interfere with other workpieces or the facilities around the rod.
- *2 Indicates the factory default origin position (0 mm)
- *3 [] refers to when the rotation direction reference is changed.
- *4 The amount of space required to connect the various cables and mount the product Provide this amount of space for cable handling.
- *5 A female dustproof cap comes with the setup communication connector (M12).

EQYG16M, EQYG16L Common [mm] Stroke [mm] WA WB wc Α С 30 37 25 19 113.5 95 55 50, 100 52 40 26.5 133.5 75 150, 200 115 82 70 41.5

EQYG16M (Sliding bearing) [mm								
Stroke [mm]	L	DB						
30, 50	51.5							
100	74.5	10						
150, 200	105							

EQYG16L (Ball bushing bearing) [mi								
Stroke [mm]	L	DB						
30, 50, 100	75	8						
150, 200	105	0						

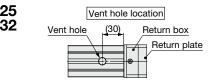
Options

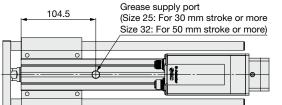
e-Actuator Easy to Operate Integrated Controller / Guide Rod Type **EQYG** Battery-less Absolute (Step Motor 24 VDC)

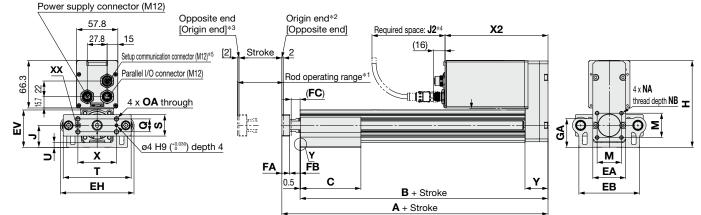
Y (2:1)

Dimensions: Top Side Parallel Motor







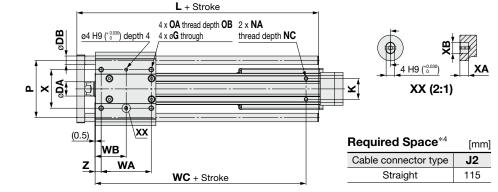


EQYG M (Sliding bearing) [mm]

Size	Stroke range	L	DB
	30, 50	67.5	
25	100, 150	100.5	12
	200, 250, 300	138	
	30, 50	74	
32	100, 150	107	16
	200 250 300	1///	

EQYG L (Ball bushing bearing) [mm]

		•	0,
Size	Stroke	L	DB
SIZE	range	_	DB
	30, 50, 100	91	
25	150	115	10
	200, 250, 300	133	
	30, 50, 100	97.5	
32	150	116.5	13
	200, 250, 300	134	



- *1 The range of movement of the rod according to the movement instructions. Make sure that workpieces mounted on the rod do not interfere with other workpieces or the facilities around the rod.
- *2 Indicates the factory default origin position (0 mm)
- *3 [] refers to when the rotation direction reference is changed.
- *4 The amount of space required to connect the various cables and mount the
 - Provide this amount of space for cable handling.
- *5 A female dustproof cap comes with the setup communication connector (M12).
- * Through holes cannot be used for sizes 25 and 32 with the following conditions. Without lock: 50 mm stroke or less With lock: 100 mm stroke or less

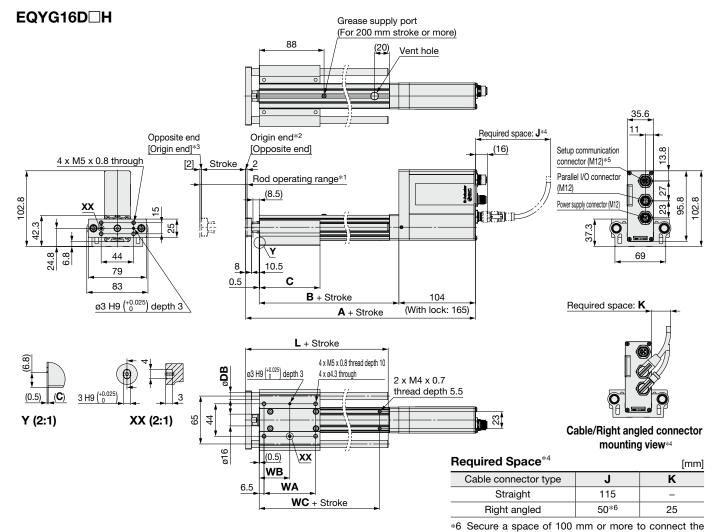
EOVCDL C

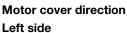
EQ	YG□IVI, E	EQTG		mmc	n														[mm]	
Size	Stroke range	Α	В	С	DA	EA	ЕВ	EH	EV	FA	FB	FC	G	GA	н	J	K	М	NA	
	30	147.5	122	50	50 67.5 20		85	100	52.3	11	14.5	12.5	5.4	40.3	121.4	30.8				
25	50, 100	147.5	122	67.5		46											29	34	M5 x 0.8	
25	150, 200	172.5 147	147	170 5 147	84.5	20	40	00	103	52.3		14.5	12.5	3.4	40.3	121.4	30.6	29	34	IVIO X U.6
	250, 300	172.5		102																
	30	166	135.5	55																
20	50, 100	100	133.3	68	25	60	101	123	123 63.8	.8 12	12 18.5	8.5 16.5	16.5 5.4	50.3	149.6	38.3	30	40	M6 x 1.0	
32	150, 200	196	165.5	85	25	00	101	123	03.6	12	10.5	10.5	3.4	30.3	149.0	30.3	30	40	1010 X 1.0	
	250 200	190	100.0	102	1															

Size	Stroke range	NB	NC	OA	ОВ	Р	Q	S	Т	U	WA	WB	wc	Х	Without lock		XA	ХВ	Υ	z	
	30										35	26	70			184			32.2		
25	50, 100	7	6.5	M6 x 1.0	12	80	18	30	95	6.8	50	33.5	1 70	54	144		4	5		8.5	
25	150, 200	7 6.5	7 0.5	0.5	IVIO X 1.0	12	60	10	30	95	0.0	70	43.5	95	34	144 104	104	4	3	32.2	0.5
	250, 300										85	51	95								
	30										40	28.5	75						39.1	8.5	
32	50, 100	10	8.5	M6 x 1.0	12	95	28	40	117	7.3	50	33.5		64	144	189	5	6			
32	150, 200	10	0.5	6.5 NO X 1.0	'4		20				70	43.5		04	144	109	3	6			
	250, 300												85	51	105						

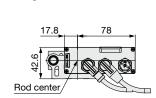


Dimensions: In-line Motor

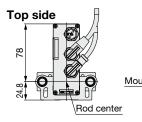


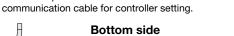


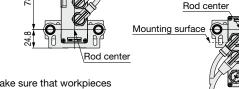
78



Right side







- *1 The range of movement of the rod according to the movement instructions. Make sure that workpieces mounted on the rod do not interfere with other workpieces or the facilities around the rod.
- *2 Indicates the factory default origin position (0 mm)

Rod center

17.8

- *3 [] refers to when the rotation direction reference is changed.
- *4 The amount of space required to connect the various cables and mount the product Provide this amount of space for cable handling.
- *5 A female dustproof cap comes with the setup communication connector (M12).

EQYG16M, EQYG16L Common									
	Stroke [mm]		4	В	С	WA	WB	wc	
	Stroke [mm]	Without lock	With lock	ь	L C	WA	WD	WC	
	30	203.5	264.5	81	37	25	19	55	
	50, 100	203.5	203.5 204.5		52	40	26.5	33	
	150, 200	223.5	284.5	101	82	70	41.5	75	

EQYG16M (Sliding bearing) [mm									
Stroke [mm]	L	DB							
30, 50	51.5								
100	74.5	10							
150, 200	105								

EQYG16L (Ball bushing bearing) [mm]							
Stroke [mm]	L	DB					
30, 50, 100	75	8					
150, 200	105	0					



[mm]

K2

25

Cable/ Right angled connector

mounting view*4

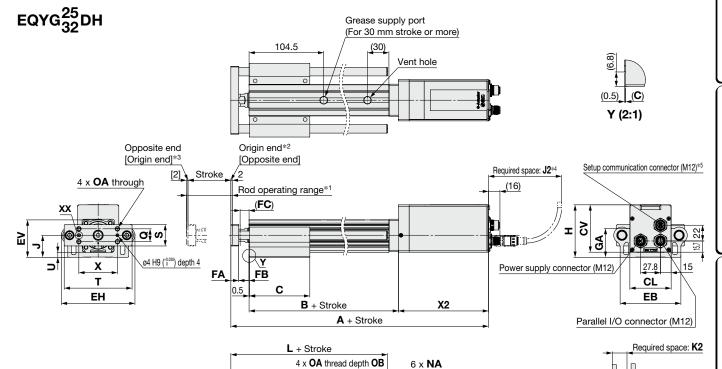
J2

115

50*6

e-Actuator Easy to Operate Integrated Controller / Guide Rod Type **EQYG**

Dimensions: In-line Motor



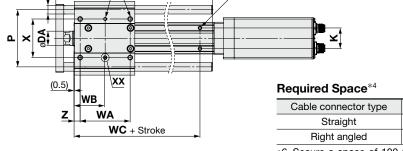
EQYG M (Sliding bearing) [mm]

Size	Stroke	L	DB
O.ZO	range	_	
	30, 50	67.5	
25	100, 150	100.5	12
	200, 250, 300	138	
	30, 50	74	
32	100, 150	107	16
	200, 250, 300	144	

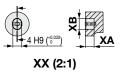
EQYG□L (Ball bushing bearing) [mm]

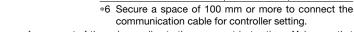
Size	Stroke	1	DB
OIZE	range	_	טט
	30, 50, 100	91	
25	150	115	10
	200, 250, 300	133	
	30, 50, 100	97.5	
32	150	116.5	13
	200, 250, 300	134	

EQYG□M. EQYG□L Common



4 x øG through





- *1 The range of movement of the rod according to the movement instructions. Make sure that workpieces mounted on the rod do not interfere with other workpieces or the facilities around the rod.
- *2 Indicates the factory default origin position (0 mm)
- *3 [] refers to when the rotation direction reference is changed.

thread depth NC

- The amount of space required to connect the various cables and mount the product Provide this amount of space for cable handling.
- *5 A female dustproof cap comes with the setup communication connector (M12).

_ ~	G∟IVI, L	=QTGL		mmon)														[mm]
Size	Stroke	A		В	С	CL	CV	DA	ЕВ	EH	EV	FA	FB	FC	G	GA	Н	J	К
OIZO	range	Without lock	With lock		•	OL	•					1.7			5	G,	••	, o	1
	30	254.5	294.5	103	50														
25	50, 100	254.5	294.5	103	67.5	57.8	66.3	20	85	103	52.3	11	14.5	12.5	5.4	40.3	73.4	30.8	29
23 1	150, 200	279.5	319.5	128	84.5	37.6	00.3	20	00	103	52.5		14.5	12.5	5.4	40.3	73.4	30.6	29
2	250, 300	219.5	319.5	120	102														
	30	270	315	116.5	55														
32	50, 100	2/0	315	110.5	68	69.8	83.5	25	101	123	63.8	12	18.5	16.5	5.4	50.3	91.1	38.3	30
32 1	150, 200	300	345	146.5	85	09.6	65.5	25	101	123	03.0	12	10.5	10.5	5.4	50.5	91.1	36.3	30
2	250, 300	300	345	140.5	102														

Size	Stroke range	NA	NC	OA	ОВ	Р	Q	S	Т	U	WA	WB	wc	Х	X Without lock		ΧA	ХВ	Υ	z
	30										35	26	70							
25	50,100	M5 x 0.8	6.5	M6 x 1.0	12	80	18	30	95	6.8	50	33.5	70	54	126	166	4	5	32.2	8.5
25	150, 200	IVIO X U.O	0.5	IVIO X 1.0	12	00	10	30	95	0.6	70	43.5	95	34	120	100	4	5	32.2	0.5
	250, 300										85	51	95							
	30										40	28.5	75							
32	50, 100	M6 x 1.0	8.5	M6 x 1.0	12	95	28	40	117	7.3	50	33.5	75	64	123	168	5	6	39.1	8.5
32	150, 200	IVIO X 1.0	0.5	IVIO X 1.0	12	95	20	40	117	1.3	70	43.5	105	04	123	100	S	0	39.1	0.5
	250, 300										85	51	105							

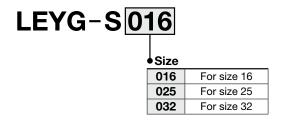


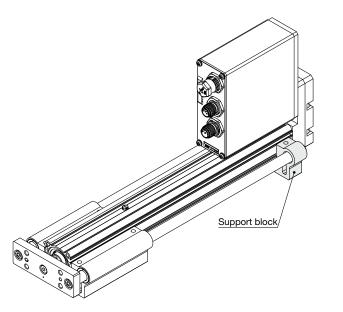
Support Block

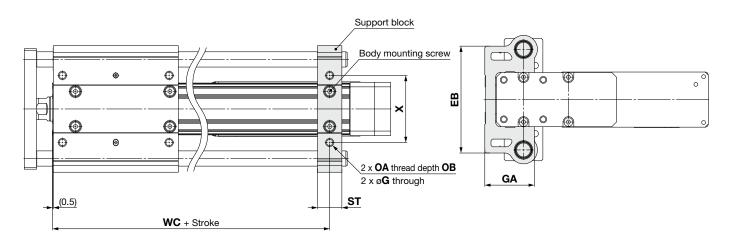
Guide for support block application

When the stroke exceeds 100 mm and the mounting orientation is horizontal, the body will be bent. Mounting the support block is recommended. (Please order it separately from the models shown below.)

Support Block Model







⚠ Caution

Do not install the body using only a support block. The support block should be used only for support.

										[mm]
Size	Model	Stroke range	EB	G	GA	OA	ОВ	ST	wc	X
16	LEYG-S016	Up to 100	69	4.3	31.8	M5 x 0.8	10	16	55	44
10	16 LETG-3016	105 to 200	09	4.3	31.0	1VIS X 0.0	10	10	75	44
25	LEYG-S025	Up to 100	85	5.4	40.3	M6 x 1.0	12	20	70	54
25	LE1G-3025	105 to 300	65	3.4	40.3	IVIO X 1.0	12	20	95	54
32	LEYG-S032	Up to 100	101	(5.4)	(50.3)	M6 x 1.0	12	22	75	64
32 LETG-3032	105 to 300	101	(3.4)	(30.3)	IVIO X 1.0	12	22	105	64	

* Two body mounting screws are included with the support block.

* The through holes of the LEYG-S025 and LEYG-S032 cannot be used for the top side parallel motor type. Use taps on the bottom.

Options

78

Slider Type		
<i>EQFS</i> □ <i>l</i>	H/EQY \Box F	H/EQYG□H Series
e -Actu	iator Fl	ectric Specifications
	autoi Ei	

Compatible motor	-	Step motor 24 VDC			
Power supply		24 VDC ±10%			
Compatible encoder	•	Battery-less absolute			
_ Number of inputs		3 inputs (Non-insulated)			
Parallel input specifications Input voltage		24 VDC ±10%			
specifications	Input current	5 mA/circuit			
	Number of outputs	4 outputs (Non-insulated)			
Parallel output specifications Load voltage		24 VDC ±10%			
Max. load current 40 mA/point		40 mA/point			
LED		PWR (Green), ALM (Red), OVL (Orange)			

The initial setting of the e-Actuator at the time of shipment from the factory is the closed center mode.

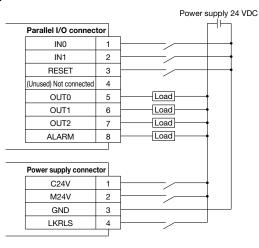
To switch the setting to single or double solenoid mode, switch the mode by using the e-Actuator setup software.

Slider Type Rod Type Guide Rod Type EQFS H/EQY H/EQYGH Series Wiring Examples

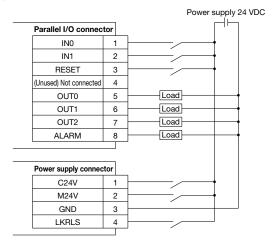
- * The wiring examples are shown below. Refer to the EQFS/EQY/EQYG operation manual for details.
- * Use the I/O cable (JX-CI□-E-□-S) for connecting a PLC with the parallel I/O connector.
- * Wiring depends on the parallel input/output type (NPN or PNP).
- * The parallel I/O is of non-insulated specification.

The ground connection of the connected PLC and other equipment uses a common GND with the GND of the power supply connector.

Wiring diagram (NPN)



Wiring diagram (PNP)



Input Signal

Name	Details			
IN0*1	Movement signal for origin end			
IN1*1	N1*1 Movement signal for opposite end			
RESET	RESET Reset alarms			

^{*1} In single solenoid mode, turning ON of IN1 input gives an opposite end operation instruction, turning OFF of IN1 input gives an origin end operation instruction, and IN0 is not used.

Output Signal

Name	Details		
OUT0	Origin end position detection		
OUT1	Opposite end position detection		
OUT2	Midpoint position detection		
*ALARM*1	OFF when alarm is generated		

- *1 Signal of negative-logic circuit
- Check the catalog and operation manual of each actuator model which is capable of performing pushing operations.

The "Specifications" table for models which are capable of performing pushing operations includes an item for the pushing force.

Slider Type Rod Type Guide Rod Type EQFS H/EQY H/EQYGH Series Options

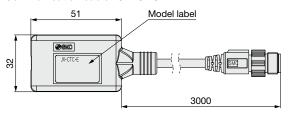
■ Communication cable for controller setting

Controller setting kit JX-CT-E

A set which includes a communication cable (JX-CTC-E) and a USB cable (LEC-W2-U)

It is possible to individually purchase the communication cable and USB cable.

Communication cable JX-CTC-E



USB cable LEC-W2-U



<Controller setting software/USB driver>

- · Controller setting software
- · USB driver (For JXC-CT□-E)

Download from SMC's website:

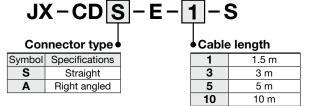
https://www.smcworld.com

Hardware Requirements

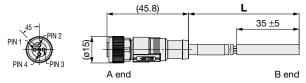
os	Windows®10 (64 bit), Windows®11 (64 bit)
Communication interface	USB 2.0 port
Display	1366 x 768 or more

* Windows®10 and Windows®11 are registered trademarks of Microsoft Corporation in the United States.

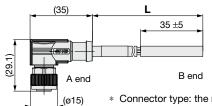
■ Power supply cable



● Connector type: Straight

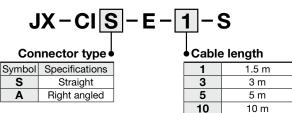


Connector type: Right angled

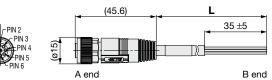


 Connector type: the right angled type cannot be used for the parallel mounting type.

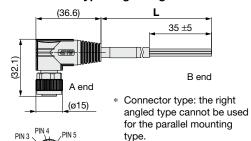
■ Parallel I/O cable



Connector type: Straight



● Connector type: Right angled



Pin no.	Wire color	Signal
1	White	IN0
2	Brown	IN1
3	Green	RESET
4	Yellow	_
5	Gray	OUT0
6	Pink	OUT1
7	Blue	OUT2
8	Red	ALARM

Part no.	Weight [g]
JX-CIS-E-1-S	88
JX-CIS-E-3-S	164
JX-CIS-E-5-S	265
JX-CIS-E-10-S	517
JX-CIA-E-1-S	88
JX-CIA-E-3-S	164
JX-CIA-E-5-S	265
JX-CIA-E-10-S	517

Pin no.	Wire color	Signal
1	Brown	C24V
2	White	M24V
3	Blue	0V
4	Black	LK RLS

Part no.	Weight [g]
JX-CDS-E-1-S	68
JX-CDS-E-3-S	125
JX-CDS-E-5-S	200
JX-CDS-E-10-S	387
JX-CDA-E-1-S	68
JX-CDA-E-3-S	125
JX-CDA-E-5-S	200
JX-CDA-E-10-S	387

CE/UKCA/UL-compliance List

 $\ast\,$ For CE, UKCA, and UL-compliant products, refer to the table below.

As of September 2024

■Compliance List "○": Compliant "×": Not applicable "—": No setting

Series	C.€	c Su'us Compliance Certification No. (File No.)	
		Compliance	Certification No. (File No.)
EQFS	0	O*1	E339743
EQY	0	O*1	E339743
EQYG	0	×	_

^{*1} Size 16 is not applicable.



⚠ Safety Instructions

These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of "Caution," "Warning" or "Danger." They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC)*1), and other safety regulations.

⚠ Danger: Danger indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.

⚠ Warning: Warning indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.

⚠ Caution: Caution indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.

*1) ISO 4414: Pneumatic fluid power - General rules and safety requirements for systems and their components ISO 4413: Hydraulic fluid power - General rules and safety requirements for systems and their components IEC 60204-1: Safety of machinery - Electrical equipment of machines - Part 1: General requirements ISO 10218-1: Robots and robotic devices - Safety requirements for industrial robots - Part 1:Robots

⚠Warning

1. The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.

Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalog information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.

2. Only personnel with appropriate training should operate machinery and equipment.

The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.

- 3. Do not service or attempt to remove product and machinery/ equipment until safety is confirmed.
 - 1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
 - 2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
 - 3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.
- 4. SMC products cannot be used beyond their specifications. They are not developed, designed, and manufactured to be used under the following conditions or environments. Use under such conditions or environments is not allowed.
 - 1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
 - 2. Use for nuclear power, railways, aviation, space equipment, ships, vehicles, military application, equipment affecting human life, body, and property, combustion equipment, entertainment equipment, emergency shut-off circuits, press clutches, brake circuits, safety equipment, etc., and use for applications that do not conform to standard specifications such as catalogs and operation manuals.
 - 3. Use for interlock circuits, except for use with double interlock such as installing a mechanical protection function in case of failure. Please periodically inspect the product to confirm that the product is operating properly.

⚠ Caution

SMC develops, designs, and manufactures products to be used for automatic control equipment, and provides them for peaceful use in manufacturing industries.

Use in non-manufacturing industries is not allowed.

Products SMC manufactures and sells cannot be used for the purpose of transactions or certification specified in the Measurement Act of each country. The new Measurement Act prohibits use of any unit other than SI units in

Limited warranty and Disclaimer/ Compliance Requirements

The product used is subject to the following "Limited warranty and Disclaimer" and "Compliance Requirements".

Read and accept them before using the product.

Limited warranty and Disclaimer

- 1. The warranty period of the product is 1 year in service or 1.5 years after the product is delivered, whichever is first.*2) Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.
- 2. For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided. This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
- 3. Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalog for the particular products.
 - *2) Vacuum pads are excluded from this 1 year warranty.

A vacuum pad is a consumable part, so it is warranted for a year after it is delivered. Also, even within the warranty period, the wear of a product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not allowed by the limited warranty.

Compliance Requirements

- 1. The use of SMC products with production equipment for the manufacture of weapons of mass destruction (WMD) or any other weapon is strictly prohibited.
- 2. The exports of SMC products or technology from one country to another are governed by the relevant security laws and regulations of the countries involved in the transaction. Prior to the shipment of a SMC product to another country, assure that all local rules governing that export are known and followed.

Revision History

- Edition B * EQFS16H and EQY16H have been added.
 - * Errors in text have been corrected.
 - * The number of pages has been increased from 60 to 68.

- Edition C * A guide rod type (EQYG□H series) has been added.
 - * The number of pages has been increased from 68 to 84.

↑ Safety Instructions Be sure to read the "Handling Precautions for SMC Products" (M-E03-3) and "Operation Manual" before use.

SMC Corporation

Akihabara UDX 15F,

4-14-1, Sotokanda, Chiyoda-ku, Tokyo 101-0021, JAPAN

Phone: 03-5207-8249 Fax: 03-5298-5362

https://www.smcworld.com

© 2024 SMC Corporation All Rights Reserved