

CAT.ES100-154C



e-Actuator

Battery-less Absolute (Step Motor 24 VDC)



Set the speed, acceleration, and deceleration.



Setting complete

Step 2

Test operation is possible immediately after setting up.



KAN Just press the forward/backward button.



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



Battery-less Absolute (Step Motor 24 VDC)



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E-Actuator Easy to Operate Integrated Controller EQFS H/EQY H/EQYG H Series Battery-less Absolute (Step Motor 24 VDC)

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) for single solenoid mode (2-position)/ double solenoid mode (2-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.







Battery-less Absolute (Step Motor 24 VDC)

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





* The numerical values vary depending on the operating conditions.

LEDs indicate the load condition.

Increased metal connector strength



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

Restart from the last stop position is possible.

Easy operation restart after recovery of the power supply

The position information is held by the encoder even when the power supply is turned off. A return to origin operation is not necessary when the power supply is recovered.

Does not require the use of batteries. **Reduced maintenance**

Batteries are not used to store the position information. Therefore, there is no need to store spare batteries or replace dead batteries.

Battery-less Absolute (Step Motor 24 VDC)

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



Detection of table stop position by means of an auto switch is possible. **D29**

2-color indicator solid state auto switch (D-M9 series) Accurate setting of the mounting position can be performed without mistakes.

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



For checking the limit and the

For the rod type/guide rod type



For the slider type

Allows for position detection of

the table throughout the stroke



System Construction/General Purpose I/O





Battery-less Absolute (Step Motor 24 VDC)

Variations

| Typ | ۵ | | Slider type | Bod type | Guide rod type |
|-----------------------------|---------------------------|--------------------------|--|---|---|
| Serie | e 95 | | EQFS H | EQYDH | EQYGDH |
| Actuation | n type | | 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 | * ¹ [mm/s | 6] | 1200 | 900 | 900 |
| Positioning repe | atability | [mm] | ±0.02 | ±0.02 | ±0.02 |
| Drive motor | Battery-les (Step moto | s absolute or 24 VDC) | • | • | • |
| Power s | upply | | | 24 VDC ±10% | |
| I/O sig | gnal | | | Parallel input: 3 inputs Parallel output: 4 outputs | |
| Operatior | n mode | | Positioning operation | Positioning operation Pushing operation (Excludes intermediate points) | Positioning operation Pushing operation (Excludes intermediate points) |
| | | 16 | • | | • |
| 0: | | 25 | • | • | • |
| Size | | 32 | • | • | • |
| | | 40 | • | _ | _ |
| | | 16 | 18 (12) | 40 (10) | 40 (10) |
| Max. work load [kg] | 0: | 25 | 40 (15) | 70 (30) | 70 (29) |
| for when mounted vertically | Size | 32 | 68 (20) | 100 (46) | 100 (44) |
| ion monimouniou rontouny | | 40 | 80 (40) | - | - |
| | | 16 | _ | 154 | 154 |
| Max. pushing force | 0: | 25 | _ | 511 | 511 |
| [N] | Size | 32 | _ | 796 | 796 |
| | | 40 | - | - | - |
| Max. strok | ke [mm] | | 1200 | 500 | 300 |
| Auto switch | mountin | g | • | | • |

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



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Battery-less Absolute (Step Motor 24 VDC)



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Battery-less Absolute (Step Motor 24 VDC)



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Battery-less Absolute (Step Motor 24 VDC)



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e-Actuator

Easy to Operate Integrated Controller / Slider Type



Options





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

200

0 Λ

5 10 15 20 25 30 35 40 Work load [kg]

e-Actuator Easy to Operate Model Selection EQFS

Battery-less Absolute (Step Motor 24 VDC)

Series

Model Selection

EQFS H Series

EQY Theres

Speed–Work Load Graph (Guide)

EQFS16 HA/Ball Screw Drive



EQFS16 HB/Ball Screw Drive



EQFS16 HC/Ball Screw Drive

Horizontal/Lead 2.5



Vertical/Lead 2.5 13 12 10 98 7 65 4 32 1 3000 mm/s² Work load: W [kg] 5000 mm/s²⁻ ο Ο 50 100 150 200 250 Speed: V [mm/s]

Options

10

Speed–Work Load Graph (Guide)

EQFS25 HH/Ball Screw Drive





Vertical/Lead 6

EQFS25 HB/Ball Screw Drive

Horizontal/Lead 6



EQFS25 HC/Ball Screw Drive

Horizontal/Lead 3



25 20 Work load: W [kg] 15 3000 mm/s² 10 5 5000 mm/s² 0 ∟ 0 50 100 200 300 350 400 150 250 Speed: V [mm/s]

700

800



Model Selection **Battery-less** Absolute (Step Motor 24 VDC)

Speed–Work Load Graph (Guide)

EQFS32 HH/Ball Screw Drive





EQFS32 HA/Ball Screw Drive





EQFS32 HB/Ball Screw Drive

Horizontal/Lead 8



EQFS32 HC/Ball Screw Drive

Horizontal/Lead 4













EQY□H Series

Speed–Work Load Graph (Guide)

EQFS40 HH/Ball Screw Drive





EQFS40 HB/Ball Screw Drive

Horizontal/Lead 10



EQFS40 HC/Ball Screw Drive

Horizontal/Lead 5



Static Allowable Moment*1

| | | | | [N·m] |
|---------|------|----------|--------|---------|
| Model | Size | Pitching | Yawing | Rolling |
| | 16 | 10.0 | 10.0 | 20.0 |
| | 25 | 27.0 | 27.0 | 52.0 |
| EQFOLIN | 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.



Calculation of Guide Load Factor

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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
- Select the target graph while referencing the model, size, and mounting orientation.
 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.
- $\alpha \mathbf{x} = \mathbf{X}\mathbf{c}/\mathbf{L}\mathbf{x}, \ \alpha \mathbf{y} = \mathbf{Y}\mathbf{c}/\mathbf{L}\mathbf{y}, \ \alpha \mathbf{z} = \mathbf{Z}\mathbf{c}/\mathbf{L}\mathbf{z}$
- 5. Confirm the total of αx , αy , and αz 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









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

- 4. The load factor for each direction can be found as follows. $\alpha \mathbf{x} = \mathbf{0}/\mathbf{350} = \mathbf{0}$
 - $\alpha \mathbf{y} = 50/250 = 0.2$
 - $\alpha z = 200/1000 = 0.2$
- 5. $\alpha x + \alpha y + \alpha z = 0.4 \le 1$





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 | | | | | | | | |
| EQFS32 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)



Overhang Displacement Due to Table Clearance (Initial Reference Value)

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Auto Switch

Electric Specifications

Wiring Examples

Options

Battery-less Absolute (Step Motor 24 VDC)



| Sizo | | | | | | | | | | | 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 | - | - | | | | • | | | | | | | | • | | | | | | | | • |
| 4 - | | | | | | | | | | | | | | | | | | | | | | |

SMC

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

Specifications

| | | Model | | EG | FS16 | H | | EQFS | 25⊟H | | | EQFS | 32⊟H | | | EQFS | 40⊟H | |
|---|-------------|-------------------------|---------------------------|-----------|----------|----------|------------|-----------|----------|----------|------------|-----------|----------|----------|------------|------------|-----------|----------|
| | Stroke [mr | n] *1 | | 5 | 0 to 50 | 0 | | 50 to | 800 | | | 50 to | 1000 | | | 150 to | 1200 כ | |
| | Work load | [ka]*2 | Horizontal | 10 | 15 | 18 | 15 | 26 | 40 | 40 | 39.5 | 50 | 68 | 68 | 26 | 60 | 75 | 80 |
| | WORK IDau | [rg] | 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 |
| | [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 |
| | | | 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 |
| | | | 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 |
| | | | 1001 to 1100 | - | _ | - | _ | - | - | — | - | - | - | - | 30 to 660 | 20 to 440 | 10 to 220 | 5 to 110 |
| | | | 1101 to 1200 | - | - | - | _ | - | - | - | - | - | - | - | 30 to 570 | 20 to 380 | 10 to 190 | 5 to 95 |
| | Max. acce | leration/ | Horizontal | | | | | | | | 10000 | | | | | | | |
| | deceleratio | on [mm/s ²] | Vertical | | | | | | | | 5000 | | | | | | | |
| | Positioning | g repeatabil | ity [mm] | | | | | | | | ±0.02 | | | | | | | |
| | Lost motio | 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/Vibr | ration resista | nce [m/s ²]*4 | | | | | | | | 50/20 | | | | | | | |
| | Actuation | type | | | | | | Ball scr | ew (EQ | -S⊟H), | Ball sci | rew + B | elt (EQF | S□ĽH) | | | | |
| | Guide type | | | | | | | | | Lir | near gui | de | | | | | | |
| | Operating | temperature | e range [°C] | | | | | | | | 5 to 40 | | | | | | | |
| | Operating | humidity ra | nge [%RH] | | | | | | 90 | or less | (No con | densati | on) | | | | | |
| | Enclosure | | | | | | 1 | | 40 | | IP30 | | | | | | | |
| | Motor size | | | | ⊔28 | | | | 42 | | L | | | | 6.4 | | | |
| | Motor type |) | | | | | | Ва | ttery-le | ss abso | iute (Ste | ep moto | or 24 VE | UC) | | | | |
| | Encoder | | | | | | | | | Battery | -less al | osolute | | | | | | |
| 2 | Power sup | ply voltage | [V] | | | | [| | | 24 | VDC ±1 | 0% | | | | | | |
| 2 | Power [W] | *3 *7 | | Max | . powe | r 61 | | Max. po | ower 89 | N | | viax. po | wer 116 |) | ľ | viax. po | wer 110 | 5 |
| | | | | | 50 | 110 | | 50 | 100 | Non-ma | agnetizi | ng lock | 457 | 100 | | | 0.45 | |
| 5 | Holding to | | | 29 | 59 | 118 | 20 | 59 | 123 | 147 | 39 | 98 | 157 | 196 | 44 | 44 | 245 | 392 |
| | Power [W] | */ D/2 | | | 2.9 | | | { |) | ~ ~ ~ | | |) | | | | 2 | |
| ń | Rated volta | age [V] | | | | | | | | 24 | VDC ±1 | 0% | | | | | | |

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.

Auto Switch

Options

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 | | | | | | | | | | | | | | |
| | r | | | | | | | | | | | | | | | | 1 | | | |
| 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 | - | | | | | | | | |
| | r | | | | | | | | | | | | | | | | | | | |
| 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 | | | | | | | | | | | | | | |
| | r | | | | | | | | P | | | | | | | | 1 | | | |
| Series | | | | | | | | EQF | S25 | | | | | | | | | | | |
| Stroke [mm] | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800 | | | | |
| Product weight [kg] | 1.75 | 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 | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | r | | | | | | | | | | o o o P | | | | | | | | | |
| Series | | | | | | | | | | EQF | S32 [₽] | | | | | | | | | |
| Series Stroke [mm] | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | EQF 500 | S32^R 550 | 600 | 650 | 700 | 750 | 800 | 850 | 900 | 950 | 1000 |
| Series Stroke [mm] Product weight [kg] | 50 3.09 | 100 3.29 | 150 3.49 | 200 3.69 | 250 3.89 | 300 4.09 | 350 4.29 | 400 4.49 | 450 4.69 | EQF 500 4.89 | 550 5.09 | 600 5.29 | 650 5.49 | 700 5.69 | 750 5.89 | 800 6.09 | 850 6.29 | 900 6.49 | 950 6.69 | 1000 6.89 |
| Series Stroke [mm] Product weight [kg] Additional weight with lock [kg] | 50 3.09 | 100 3.29 | 150 3.49 | 200 3.69 | 250 3.89 | 300 4.09 | 350 4.29 | 400 4.49 | 450 4.69 | EQF 500 4.89 | S32^R 550 5.09 | 600 5.29 | 650 5.49 | 700 5.69 | 750 5.89 | 800 6.09 | 850 6.29 | 900 6.49 | 950 6.69 | 1000 6.89 |
| Series Stroke [mm] Product weight [kg] Additional weight with lock [kg] | 50 3.09 | 100 3.29 | 150 3.49 | 200 3.69 | 250 3.89 | 300 4.09 | 350 4.29 | 400 4.49 | 450 4.69 | EQF 500 4.89 0.5 | S32 ^R 550 5.09 58 | 600 5.29 | 650 5.49 | 700 5.69 | 750 5.89 | 800 6.09 | 850 6.29 | 900 6.49 | 950 6.69 | 1000 6.89 |
| Series Stroke [mm] Product weight [kg] Additional weight with lock [kg] Series | 50 3.09 | 100 3.29 | 150 3.49 | 200 3.69 | 250 3.89 | 300 4.09 | 350 4.29 | 400 4.49 | 450 4.69 | EQF 500 4.89 0.5 EQF | S32 ^R 550 5.09 58 S40 ^R | 600 5.29 | 650 5.49 | 700 5.69 | 750 5.89 | 800 6.09 | 850 6.29 | 900 6.49 | 950 6.69 | 1000 |
| Series Stroke [mm] Product weight [kg] Additional weight with lock [kg] Series Stroke [mm] | 50 3.09 | 100 3.29 200 | 150 3.49 250 | 200 3.69 300 | 250 3.89 350 | 300 4.09 400 | 350 4.29 450 | 400 4.49 500 | 450 4.69 550 | EQF 500 4.89 0.5 EQF 600 | S32 ^R 550 5.09 58 S40 ^R 650 | 600 5.29 700 | 650 5.49 750 | 700 5.69 800 | 750 5.89 850 | 800 6.09 900 | 850 6.29 950 | 900 6.49 1000 | 950 6.69 1100 | 1000 6.89 1200 |
| Series Stroke [mm] Product weight [kg] Additional weight with lock [kg] Series Stroke [mm] Product weight [kg] | 50 3.09 | 100 3.29 200 5.43 | 150 3.49 250 5.71 | 200 3.69 300 5.99 | 250 3.89 350 6.27 | 300 4.09 400 6.55 | 350 4.29 450 6.93 | 400 4.49 500 7.11 | 450 4.69 550 7.39 | EQF 500 4.89 0.3 EQF 600 7.67 | S32 ^R 550 5.09 58 S40 ^R 650 7.95 | 600 5.29 700 8.23 | 650 5.49 750 8.51 | 700 5.69 800 8.79 | 750 5.89 850 9.07 | 800 6.09 900 9.35 | 850 6.29 950 9.63 | 900 6.49 1000 9.91 | 950 6.69 1100 10.47 | 1000 6.89 1200 11.03 |

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

| Table Spacer Weight | [g |
|---------------------|-----|
| EQFS16 ^R | 5 |
| EQFS25 ^R | 95 |
| EQFS32 ^R | 125 |
| EQFS40 ^R | 30 |



Construction

In-line motor



Component Parts

| 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 | ج ا |
|-------|-----------------------------|------------------------|----------|--------------|
| 24 | Return plate | Aluminum alloy | Coating | j j |
| 25 | Cover plate | Aluminum alloy | Anodized | Š |
| 26 | Table spacer | Aluminum alloy | Anodized | 육 |
| 27 | Belt | — | | ¥ |
| Repla | cement Parts (Right/Left si | de parallel only)/Belt | | suc |
| No. | Size | Order no. | | <u>fi</u> c. |
| | 16 | LE-D-6-5 | | fice |
| 07 | 25 | LE-D-15-1 | | Sci Ele |
| 21 | 32 | LE-D-19-1 | | Sp. |
| | 40 | | | |

LE-D-19-2

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

| No. | Size | Order no. |
|-----|------|-----------|
| | 16 | LE-D-6-5 |
| 07 | 25 | LE-D-15-1 |
| 21 | 00 | |

Replacement Parts/Grease Pack

40

SMC

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

Wiring Examples

Options



Dimensions: In-line Motor



*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 applicable auto switch (D-M9^[]) should be ordered separately. *5
- *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.
- The amount of space required to connect the various cables and mount the product *7
- 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 | Е | F | G | н |
| 50 | | | | | 4 | | | 15 | 00 | 25 |
| 100, 150 | | | | | 4 | _ | _ | | 00 | |
| 200, 250 | 014 | 075 | 6 | 00 | 6 | 2 | 200 | | 180 | |
| 300, 350 | 214 | 215 | 0 | 00 | 8 | 3 | 300 | 40 | 280 | 50 |
| 400, 450 | | | | | 10 | 4 | 400 | | 380 | |
| 500 | | | | | 12 | 5 | 500 | | 480 | |

C





Dimensions: In-line Motor



*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.

SMC

- *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.
- * When using the positioning pin holes on the bottom, use either the one on the body side or the one on the housing side.

| etup communication l be ordered separe e bottom, use either mensions | on connector ately. er the one or | (M12). In the body | side or t | he one o | n the ho | using sic | le. | | | [mm] | ī | | | | | | | | | |
|---|---|-----------------------|-----------|----------|----------|-----------|-------|-------|-----|------|-----|---|---|-----|---|-----|---|-----|--|--|
| Stroke [mm] | Without lock | With lock | Α | В | n | D | Е | F | G | н | | | | | | | | | | |
| 50 | | | | | 4 | | | 20 | 100 | 30 | | | | | | | | | | |
| 100, 150 | | 010.4 | | | 4 | _ | _ | | 100 | | Ι. | | | | | | | | | |
| 200, 250 | | | 210.4 | 210 / | | | 6 | 2 | 240 | | 220 | | | | | | | | | |
| 300, 350, 400 | 070.4 | | | | 210 / | 210 / | 210 / | 218 / | 6 | 110 | 110 | 8 | 3 | 360 |] | 340 | 1 | | | |
| 450, 500 | 270.4 | 310.4 | 0 | 110 | 10 | 4 | 480 | 35 | 460 | 45 | | | | | | | | | | |
| 550, 600, 650 | | | | | 12 | 5 | 600 | 1 | 580 | 1 | Ē | | | | | | | | | |
| 700, 750 | | | | | | | | | | | | | | 14 | 6 | 720 | 1 | 700 | | |
| 000 | | | | | 16 | 7 | 840 | 1 | 820 | 1 | | | | | | | | | | |

22 A

Auto Switch



Dimensions: In-line Motor



- *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.

[mm]

G

130

280

430

580

730

880

1030

Е

300

450

600

750

900

1050

- *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-M9D) should be ordered sep

| ordered s | eparately. | Dimensions | | | | | | |
|---|---|---------------|--------------|----------------|---|-----|----|---|
| *6 The amou cables and Provide th | nt of space required to connect the various mount the product s amount of space for cable handling. Order | Stroke [mm] | Without lock | L With lock | Α | В | n | D |
| the cable s | eparately. | 50, 100, 150 | | | | | 4 | _ |
| *7 A female | dustproof cap comes with the setup | 200, 250, 300 | | | | | 6 | 2 |
| communi | cation connector (M12). | 350, 400, 450 | | | | | 8 | 3 |
| * A switch s | pacer (BMY3-016) is required to secure | 500, 550, 600 | 314.9 | 359.9 | 6 | 130 | 10 | 4 |
| * When using | the positioning pin holes on the bottom | 650, 700, 750 |] | | | | 12 | 5 |
| use either | the one on the body side or the one on | 800, 850, 900 | | | | | 14 | 6 |
| the housing | j side. | 950, 1000 |] | | | | 16 | 7 |
| | | | | | | | | |



e-Actuator Easy to Operate

Battery-less Absolute (Step Motor 24 VDC)

H Series





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.

SMC

- *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.

| ent o r | t instructions not interfere with other wo | orkpieces o | or the facili | ties arou | nd the ta | able. | | | | tions | | | | | | | | | |
|------------|---|--------------|---------------|-----------|-----------|-------|-------|-------|---------|----------|-------|-------|--------|-----|----|---|-----|-----|------|
| ch | anged. | | | | | | | | | ectri | | | | | | | | | |
| | Dimensions | | | | | | | | [mm] | Dec El | | | | | | | | | |
| | Stroke [mm] | Without lock | With lock | Α | В | n | D | E | G | | | | | | | | | | |
| | 150 | | | | | 4 | - | _ | 130 | s | | | | | | | | | |
| | 200, 250, 300 | | | | | 6 | 2 | 300 | 280 | l g g | | | | | | | | | |
| | 350, 400, 450 | | 411.8 | 411.8 | 411.8 | 411.8 | | | 8 | 3 | 450 | 430 | a liri | | | | | | |
| | 500, 550, 600 | 266.9 | | | | | 411.8 | 111 0 | 111 0 | 411.0 | 111 0 | 111 0 | 6 | 170 | 10 | 4 | 600 | 580 | ≤ xĭ |
| | 650, 700, 750 | 300.0 | | | | | | 0 | 5 178 | 12 | 5 | 750 | 730 | - | | | | | |
| | 800, 850, 900 | | | | | 14 | 6 | 900 | 880 | <u> </u> | | | | | | | | | |
| | 950, 1000 | | | | | 16 | 7 | 1050 | 1030 | | | | | | | | | | |
| | 1100, 1200 | | | | | 18 | 8 | 1200 | 1180 | s | | | | | | | | | |
| | | | | | | | | | | Optior | | | | | | | | | |





- *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.

SMC

- *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 | А | fema | le d | ustproo | f cap | comes | with | the | setup | comm | unication | connect | tor (l | M12) |
|----|---|------|------|---------|-------|-------|------|-----|-------|------|-----------|---------|--------|------|
| | | | | | | | | | | | | | | |

| Dimensions | | | | | | | | | [mm] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------|-------|---|----|----|----|-----|----|-----|------|----|----|----|----|----|----|-----|----|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|---|-----|----|-----|----|
| Stroke [mm] | L | Α | В | n | D | E | F | G | н | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 50 | | | | 4 | | | 15 | 00 | 25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 100, 150 | | 0 | | 4 | _ | - | | 80 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 200, 250 | 1177 | | 00 | 6 | 2 | 200 | | 180 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 300, 350 | 117.7 | 0 | 90 | 90 | 50 | 50 | 90 | 90 | 90 | 30 | 30 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 8 | 3 | 300 | 40 | 280 | 50 |
| 400, 450 | | | | | | | | | | | | | | 10 | 4 | 400 | | 380 | | | | | | | | | | | | | | | | | | | | |
| 500 | | | | 12 | 5 | 500 | | 480 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |





*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)

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- *7 The applicable auto switch (D-M9^[]) should be ordered separately.
- *8 When using the positioning pin holes on the bottom, use either the one on the body side or the one on the housing side.
- *9 The table spacer is shipped together with the product but does not come assembled.

| Dimensions [mm] | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------|-------|---|-----|----|---|-----|----|-----|----|----------------|--|--|--|--|--|--|--|----|---|-----|---|-----|--|-----|
| Stroke [mm] | L | A | В | n | D | E | F | G | н | Nir | | | | | | | | | | | | | | |
| 50 | | | | 4 | | | 20 | 100 | 30 | [−] ŵ | | | | | | | | | | | | | | |
| 100, 150 | | | | 4 | - | _ | | 100 | | | | | | | | | | | | | | | | |
| 200, 250 | | | | 6 | 2 | 240 |] | 220 | | | | | | | | | | | | | | | | |
| 300, 350, 400 | 150 / | 6 | 110 | 8 | 3 | 360 |] | 340 | | s | | | | | | | | | | | | | | |
| 450, 500 | 159.4 | 0 | | 10 | 4 | 480 | 35 | 460 | 45 | l o | | | | | | | | | | | | | | |
| 550, 600, 650 | | | | | | | | | | | | | | | | | | 12 | 5 | 600 |] | 580 | | pti |
| 700, 750 | | | | | | | | | | | | | | | | | | | | | | | | |
| 800 | | | | 16 | 7 | 840 |] | 820 | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | |



Auto Switch

Specifications

ŝ

Electric





*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)

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- *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).
- *8 When using the positioning pin holes on the bottom, use either the one on the body side or the one on the housing side.
- *9 The table spacer is shipped together with the product but does not come assembled.
- * A switch spacer (BMY3-016) is required to secure auto switches. Please order it separately.

| Dimensions | | | | | | | [mm] |
|---------------|-------|---|-----|----|---|------|------|
| Stroke [mm] | L | Α | В | n | D | E | G |
| 50, 100, 150 | | | | 4 | — | — | 130 |
| 200, 250, 300 | | | | 6 | 2 | 300 | 280 |
| 350, 400, 450 | | | | 8 | 3 | 450 | 430 |
| 500, 550, 600 | 195.6 | 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 |







- 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.
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- * A switch spacer (BMY3-016) is required to secure auto switches. Please order it separately.

Dimensions

| Dimensions | | | | | | | [mm] |
|---------------|-------|-------|-----|----|---|------|------|
| Stroke [mm] | L | Α | В | n | D | E | G |
| 150 | | | | 4 | — | — | 130 |
| 200, 250, 300 | | 056.9 | | 6 | 2 | 300 | 280 |
| 350, 400, 450 | | | | 8 | 3 | 450 | 430 |
| 500, 550, 600 | 256.0 | | 170 | 10 | 4 | 600 | 580 |
| 650, 700, 750 | 200.0 | 0 | 1/0 | 12 | 5 | 750 | 730 |
| 800, 850, 900 | | | | 14 | 6 | 900 | 880 |
| 950, 1000 | | | | 16 | 7 | 1050 | 1030 |
| 1100, 1200 | | | | 18 | 8 | 1200 | 1180 |



Specifications

Wiring Examples

Options

Electric

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



| | | | [mm] |
|------|------|------|-----------------|
| Size | Α | 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 |

The operating range is a guideline including hysteresis, not meant to be guaranteed. There may be large variations depending on the ambient environment.
 Adjust the auto switch after confirming the operating conditions in the actual setting.

Auto Switch Mounting



| Tightening Torque for Auto Sv | vitch Mounting Screw | [N·m |
|-------------------------------|----------------------|------|
| Auto switch model | Tightening torqu | e |
| | 0 1 to 0 15 | |

D-M9 W
 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.



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

Auto switch model

Electrical entry direction

Wiring type

Output type

Applicable load

Power supply voltage

Current consumption

Internal voltage drop

Leakage current

Auto switch model

Min. bending radius [mm] (Reference values)

Auto switch model

Outside diameter [mm]

Number of cores

Outside diameter [mm]

Effective area [mm²]

Strand diameter [mm]

Refer to the Web Catalog for lead wire lengths.

0.5 m (Nil)

1 m (**M**)

3 m (L)

5 m (**Z**)

Indicator light

Sheath

Insulator

Conductor

Weight

Lead wire length

Standard

Load voltage

Load current

CEUK Rohs

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

D-M9 (With indicator light)

D-M9N

NPN

28 VDC or less

Oilproof Flexible Heavy-duty Lead Wire Specifications

Refer to the Web Catalog for solid state auto switch common specifications.

D-M9N

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

PLC: Programmable Logic Controller

D-M9B

2-wire

24 VDC relay, PLC

24 VDC (10 to 28 VDC)

2.5 to 40 mA

4 V or less

0.8 mA or less

D-M9B

2 cores (Brown/Blue)

D-M9P

In-line

PNP

Red LED illuminates when turned ON.

CE/UKCA marking

3 cores (Brown/Blue/Black)

8

14

41

68

D-M9P

ø2.6

ø0.88

0.15

ø0.05

17

D-M9P

3-wire

IC circuit, Relay, PLC

5, 12, 24 VDC (4.5 to 28 V) 10 mA or less

40 mA or less

0.8 V or less at 10 mA (2 V or less at 40 mA)

100 µA or less at 24 VDC

D-M9N

[g]

Auto Switch

Electric Specifications

| 38 | | |
|----|--|--|
| 63 | | |
| | | |
| | | |

D-M9B

7

13

Dimensions

D-M9□



⊘SMC

30

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-v | vire | | 2-v | vire | |
| Output type | N | 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 | 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 | 0.8 V or less at 10 mA (2 V or less at 40 mA) | | | 4 V or 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/UKC/ | A 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 | | | |
| Inculator | Number of cores | 3 cores (Brow | 2 cores (Brown/Blue) | | |
| Outside diameter | | ø0.88 | | | |
| Conductor | Effective area [mm ²] | 2] 0.15 | | | |
| Conductor | Strand diameter [mm] | | | | |
| 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 |
| | 1 m (M)*1 | 14 | | 13 |
| Lead wire length | 3 m (L) | 41 | | 38 |
| | 5 m (Z)*1 | 68 | | 63 |
| | | | | |

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

Dimensions





[g]

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

RoHS

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 \rightarrow Green \leftarrow Red)



▲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.

| D-M9 [_] W (With indicator light) | | | | | | | |
|--|--------------------------------------|---|-------------------|--|--|--|--|
| Auto switch model | D-M9NW | D-M9PW | D-M9BW | | | | |
| 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 | - | | | | | |
| Current consumption | 10 mA | or less | — | | | | |
| Load voltage | 28 VDC or less | 28 VDC or less – | | | | | |
| 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 | Operating range Red LED illuminates. | | | | | | |
| indicator light | Proper operat | Proper operating range Green LED illuminates. | | | | | |
| Standard | | CE/UKCA marking | | | | | |

Oilproof Flexible Heavy-duty Lead Wire Specifications

| Auto switch model | | D-M9NW | D-M9BW | | |
|------------------------|-----------------------------------|---------------|----------------------|--|--|
| Sheath | Outside diameter [mm] | ø2.6 | | | |
| Inculator | Number of cores | 3 cores (Brow | 2 cores (Brown/Blue) | | |
| insulator | Outside diameter [mm] | ø0.88 | | | |
| Conductor | Effective area [mm ²] | 0.15 | | | |
| Conductor | Strand diameter [mm] | n] ø0.05 | | | |
| Min. bending radius [r | mm] (Reference values) | is) 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 | D-M9PW | D-M9BW |
|-------------------|----------------------|--------|--------|--------|
| | 0.5 m (Nil) | | 8 | 7 |
| | 1 m (M) | 14 | | 13 |
| Lead wire length | 3 m (L) | 2 | 11 | 38 |
| | 5 m (Z) | 6 | 68 | 63 |

Specifications Electric

Wiring Examples

Options

[mm]

D-M9



SMC

EQY⊟H Series

e-Actuator

Easy to Operate Integrated Controller / Rod Type



Auto Switch

Electric Specifications

Wiring Examples

Options



Based on the above calculation result, the EQY25HB-200 should be selected.

SMC
e-Actuator Easy to Operate Model Selection EQY H Series Battery-less Absolute (Step Motor 24 VDC)

Selection Procedure



Speed–Work Load Graph (Guide)

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

EQY16 HA



Horizontal/Lead 5



EQY16 HC

Horizontal/Lead 2.5



Vertical/Lead 5







3000 mm/s²

400

Speed: V [mm/s]

500

600

700

800

5000 mm/s

200

300

Speed–Work Load Graph (Guide)

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

EQY25 HH



Horizontal/Lead 12



EQY25 HB



EQY25 HC

Horizontal/Lead 3





Speed–Work Load Graph (Guide)

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

EQY32 HH



Horizontal/Lead 16



EQY32 HB





EQY32 HC

Horizontal/Lead 4



Vertical/Lead 4



700

800

400

Model Selection Easy to Operate Battery-less Absolute (Step Motor 24 VDC)

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

Workpiece

Center of gravity

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



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 |

φ

* The values without a load are shown.

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 200 Lead 2.5: EQY16HC Lead 5: EQY16HB 150 Lead 10: EQY16HA Force [N] 100 50 Min. 25% Max. 45% 0 ⊑ 20 25 30 35 40 45 50 Pushing force set value [%] Ambient temperature Pushing force set value [%] Duty ratio [%] Continuous pushing time [min] 40°C or less 100 45 or less 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 | | | | EQ | Y25 | | 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% | | | |

Model Selection

Wiring Examples

Battery-less Absolute (Step Motor 24 VDC)

e-Actuator Easy to Operate **Integrated Controller / Rod Type EQY H** Series EQY16, 25, 32 Excludes size 16 How to Order





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

Left side

Right side

Top side

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

Direction

Top side

Right side

Left side

Motor mounting position: Parallel

Size

25/32

16

Size

16/25/32

Symbol Motor cover direction*1

D D1

D2

D3

D4

Symbol

Nil

R

L

- **3** Motor type
 - Battery-less absolute н (Step motor 24 VDC)

| 4 Lea | Eead [mm] Symbol EQY16 EQY25 EQY32 H - 20 24 | | | | | | | | | | | |
|--------|--|-------|-------|--|--|--|--|--|--|--|--|--|
| Symbol | EQY16 | EQY25 | EQY32 | | | | | | | | | |
| н | _ | 20 | 24 | | | | | | | | | |
| Δ | 10 | 12 | 16 | | | | | | | | | |

5

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

EQY16 Motor cover direction



Motor mounting position: Parallel



5 Stroke [mm]

| 30 | 30 |
|-----|-----|
| to | to |
| 500 | 500 |

* For details, refer to the applicable stroke table below.

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

Integrated controller В

Parallel input

| 5 | NPN |
|---|-----|
| 6 | PNP |

Applicable Stroke Table

8 Mounting*2

| | | | M | 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

| Sizo | | Stroke [mm] | | | | | | | | | | | |
|------|----|-------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------------------------|--------------------------------------|
| | 30 | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | Manufacturable stroke range | |
| 16 | • | • | • | • | • | • | • | - | - | - | - | 10 to 300 | The power cable and the parallel I/O |
| 25 | • | • | • | | • | • | • | • | • | - | - | 15 to 400 | cable need to be ordered separately. |
| 32 | • | • | • | • | • | • | • | • | • | • | • | 20 to 500 | Refer to page 80 for details. |

SMC

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



Specifications

| | | | | | | | | | | | | | | | <u></u> |
|----------------|---------------------------|-------------------|------------|--|-------------|-----------|-----------|------------|------------|------------|-----------|-----------|------------|------------|---------|
| | | Model | | E | QY16⊡I | Н | | EQY2 | 25⊟H | | | EQY3 | B2⊟H | | |
| | Stroke [mm] | | | | 30 to 300 | | | 30 to | 400 | | | 30 to | 500 | | |
| | Work lood [ka]* | :1 | Horizontal | 17 | 25 | 40 | 8 | 26 | 40 | 70 | 30 | 50 | 90 | 100 | |
| | work load [kg] | Nork load [kg] | | 3 | 6 | 10 | 2 | 8 | 16 | 30 | 3 | 13 | 26 | 46 | 3 |
| | 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 | 2 |
| | | <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 | \int |
| s | Speed [mm/s] | Stroke | 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 | |
| o | | range | 450 to 500 | - | _ | — | _ | — | _ | _ | 30 to 900 | 24 to 640 | 12 to 320 | 6 to 160 | |
| cat | Max. accelera | tion/ | Horizontal | | | | | | 10000*1 | | | | | | |
| cifi | deceleration [| mm/s²] | Vertical | | | | | | 5000*1 | | | | | | 1 |
| be | Pushing speed | d [mm/s]*5 | | | 25 | | | 3 | 5 | | | 3 | 0 | | ∣≓ |
| r s | Positioning re | peatability [| mm] | | ±0.02 | | | | | | | | | | |
| latc | Lost motion [n | nm]* ⁶ | | | 0.1 or less | | | | | | | | | | |
| ctr | Lead [mm] | | | 10 | 5 | 2.5 | 20 | 12 | 6 | 3 | 24 | 16 | 8 | 4 | 1 |
| ◄ | Impact/Vibrati | 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 conc | lensation) | | | | | |
| | Enclosure | | | | | | | | IP40 | | | | | | • |
| ions | Motor size | | | | □28 | | | | 42 | | | □5 | 6.4 | | |
| ficat | Motor type | | | | | | Battery | /-less abs | olute (Ste | p motor 2 | 4 VDC) | | | | |
| speci | Encoder | | | | | | | Batter | y-less ab | solute | | | | | |
| tric : | Power supply | voltage [V] | | | | | | 24 | VDC ±10 | % | | | | | |
| Elec | Power [W]*8 *9 |) | | Ma | ax. power | 82 | | Max. po | ower 86 | | | Max. po | wer 109 | | ì |
| t ons | Type ^{*10} | | | | | | | Non-n | nagnetizin | ig lock | | | | | |
| c uni catic | Holding force | [N] | | 29 | 59 | 98 | 20 | 78 | 157 | 294 | 29 | 127 | 255 | 451 | |
| -och | Power [W] ^{*9} | | | | 2.9 | | | Ę | 5 | | | 5 | 5 | | |
| ape I | Power supply | voltage [V] | | | | | | 24 | VDC ±10 | 1% | | | | | |

*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

EQYG H Series

Auto Switch

Specifications

Wiring Examples

Options

Electric

Weight

Top/Right/Left Side Parallel Motor

| Series | | EQY16 | | | | | | | | | |
|---------------------|------|-------|------|------|------|------|------|--|--|--|--|
| 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 | | | | E | EQY2 | 5 | | | | 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 | | | | E | | 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 Wei | ght | | | [kg] | | | | | |
|------------------------------|---------------------------------------|------|------|------|--|--|--|--|--|
| | Size | 16 | 25 | 32 | | | | | |
| Lock/Motor cover | Lock/Motor cover | | | | | | | | |
| 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) | 0.12 | 0.17 | 0.00 | | | | | |
| Head flange (includ | lead flange (including mounting bolt) | | | | | | | | |
| Double clevis (including pin | 0.08 | 0.16 | 0.22 | | | | | | |



Construction



Component 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 |
| 22 | Socket (Male thread) | Free cutting | Nickel plating/ |
| 23 | Socket (wale thread) | carbon steel | Rod end male thread |
| 24 | Hexagon nut | — | Rod end male thread |
| | | | |

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

| No. | Description | Material | Note | U |
|-----|--------------|---------------------|---------|---|
| 25 | Return box | Aluminum die-casted | Coating | Г |
| 26 | Return plate | Aluminum die-casted | Coating | |
| 27 | Belt | — | | |
| | | | | |

Replacement Parts (Top/Right/Left side parallel only)/BeltNo.SizeOrder no.

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

Replacement Parts/Grease Pack

| Applied portion | Order no. |
|-----------------|-----------------|
| Biston rod | GR-S-010 (10 G) |
| FISIOITIO | GR-S-020 (20 G) |

Auto Switch

27



Dimensions: Top Side Parallel 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.
- *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 | | | | | [mm] |
|-------------------|-----|-------|----|------|------|
| Stroke range [mm] | Α | В | MC | MD | ML |
| 10 to 39 | 105 | 04.5 | 17 | 23.5 | 40 |
| 40 to 100 | 105 | 94.5 | 32 | 31 | 40 |
| 101 to 300 | 125 | 114.5 | 62 | 46 | 60 |
| | | | | | |



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

Dimensions: Top Side Parallel 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.

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

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

*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

| Size | Stroke range [mm] | Α | в | С | cv | D | EH | EV | н | J | κ | L | М | 01 | R | RA | s | S2 | Т | T2 | U | V | X Without lock | 2 With lock | Υ |
|------|----------------------|-------|-------|----|------|----|----|------|-------------|----|----|------|----|------------|----|-------|----|------|-----|-------|----|------|-------------------|----------------|------|
| | 15 to 29 | | | | | | | | | | | | | | | - | | | | | | | | | |
| 25 | 30 to 39 | 136.2 | 121.7 | 12 | 66.2 | 20 | 11 | 15 5 | M0 v 1 05 | 24 | 17 | 115 | 24 | M5 v 0 9 | 0 | 74.5 | 16 | 50 1 | 115 | 1126 | -1 | 57 0 | 111 | 10/ | 22.2 |
| 25 | 40 to 100 | | | 13 | 00.5 | 20 | 44 | 45.5 | IVIO X 1.23 | 24 | 17 | 14.5 | 34 | IVIJ X U.O | 0 | 79.5 | 40 | 50.1 | 115 | 113.0 | | 57.0 | 144 | 104 | 32.2 |
| | 101 to 400 | 161.2 | 146.7 | | | | | | | | | | | | | 104.5 | | | | | | | | | |
| | 20 to 49 | 152.6 | 125 1 | | | | | | | | | | | | | — | | | | | | | | | |
| 32 | 50 to 100 | 155.0 | 135.1 | 13 | 83.5 | 25 | 51 | 56.5 | M8 x 1.25 | 31 | 22 | 18.5 | 40 | M6 x 1 | 10 | 86 | 60 | 70.8 | 142 | 140.3 | 2 | 69.8 | 144 | 189 | 39.1 |
| | 101 to 500 | 183.6 | 165.1 | | | | | | | | | | | | | 116 | | | | | | | | | |

Body Bottom Tapped

| Boo | y Bottor | n Tapp | ed | | | | | | | [mm] |
|------|----------------------|--------|----|------|----|----|----------|-----|----|------|
| Size | Stroke range [mm] | MA | МС | MD | мн | ML | мо | MR | ХА | ХВ |
| | 15 to 39 | | 24 | 32 | | 50 | | | | |
| | 40 to 100 | | 40 | 44 | | 50 | | 6.5 | 4 | 5 |
| 25 | 101 to 124 | 20 | 42 | 41 | 29 | | M5 x 0.8 | | | |
| | 125 to 200 | | 59 | 49.5 | | 75 | | | | |
| | 201 to 400 | | 76 | 58 | 1 | | | | | |
| | 20 to 39 | | 22 | 36 | | 50 | | | | |
| | 40 to 100 | | 26 | 12 | | 50 | | | | |
| 32 | 101 to 124 | 25 | 30 | 43 | 30 | | M6 x 1 | 8.5 | 5 | 6 |
| | 125 to 200 | | 53 | 51.5 | | 80 | | | | |
| | 201 to 500 | | 70 | 60 | | | | | | |

Auto Switch

Electric Specifications

Wiring Examples

Options

[mm]

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

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.

- *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 | Dimensions [mr | | | | | | | | | | | | | |
|-------------------|----------------|-----------------------|-------|----|------|----|--|--|--|--|--|--|--|--|
| Stroke range [mm] | Without lock | A With lock | В | мс | MD | ML | | | | | | | | |
| 10 to 39 | 100 | 051 | 76 F | 17 | 23.5 | 40 | | | | | | | | |
| 40 to 100 | 190 | 201 | 70.5 | 32 | 31 | 40 | | | | | | | | |
| 101 to 300 | 215 | 276 | 100.6 | 62 | 46 | 60 | | | | | | | | |



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

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.
- *2 Indicates the factory default origin position (0 mm)
- *3 [] refers to when the rotation direction reference is changed.
- *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

| ••0 A | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------|----------------------|-------------------|-----------------------|-------|---------|------|----|----|---------|----------------|--------|---------|------|----|----------|---------|-------|----|----------|-----|------|-------------------|----------------|------------|--|--|--|--|
| Dim | Dimensions [mm] | | | | | | | | | | | | wite | | | | | | | | | | | | | | | |
| Size | Stroke range [mm] | Without lock | A With lock | В | С | с٧ | D | EH | EV | н | J | к | L | М | 01 | R | RA | s | т | U | V | X Without lock | 2 With lock | uto S | | | | |
| | 15 to 29 | | | | | | | | | 45.5 M8 x 1.25 | | 4 17 14 | | | | | | | | | | | | ∣◄ | | | | |
| 25 | 30 to 39 | 243.4 | 283.4 | 102.9 | 13 | 66.3 | 20 | 11 | 15.5 | | 24 | | 1/ 5 | 3/ | M5 v 0 8 | ß | 74.5 | 15 | 16 5 | 15 | 57.8 | 126 | 166 | | | | | |
| 25 | 40 to 100 | | | | 10 | 00.0 | 20 | | | | .20 24 | | | 94 | | × 0.0 0 | 79.5 | -5 | 0 40.0 1 | 1.5 | 57.0 | 5 126 | 100 | | | | | |
| | 101 to 400 | 268.4 | 308.4 | 127.9 | | | | | | | | | | | | | 104.5 | | | | | | | <u>.</u> | | | | |
| | 20 to 49 | 257.0 | 202.0 | 116.2 | | | | | | | | | | | | | | | | | | | | <u>5</u> 8 | | | | |
| 32 | 50 to 100 | 00 257.8 302.8 11 | .8 302.8 116.3 13 | | 13 83.5 | | 25 | 51 | 51 56.5 | 56.5 M8 x 1.25 | 31 | 22 | 18.5 | 40 | M6 x 1 | 10 | 86 | 60 | 61 | 1 | 69.8 | 123 | 168 | l e i | | | | |
| | 101 to 500 | 287.8 | 332.8 | 146.3 | | 00.0 | | | | | 00.0 | | | | | | | | | | | 116 | 1 | | | | | |

SMC

Body Bottom Tapped

| Body Bottom Tapped [mm] | | | | | | | | | | | |
|-------------------------|----------------------|----|------|------|----|----|----------|-----|----|----|--|
| Size | Stroke range [mm] | MA | мс | MD | МН | ML | мо | MR | ХА | ХВ | |
| | 15 to 39 | | 24 | 32 | | 50 | | 6.5 | 4 | 5 | |
| 25 | 40 to 100 | | 10 | 11 | | 50 | | | | | |
| | 101 to 124 | 20 | 42 | 41 | 29 | | M5 x 0.8 | | | | |
| | 125 to 200 | | 59 | 49.5 | | 75 | | | | | |
| | 201 to 400 | | 76 | 58 | | | | | | | |
| | 20 to 39 | | 22 | 36 | | 50 | | | | | |
| | 40 to 100 | | 36 | 13 | | 50 | | | | | |
| 32 | 101 to 124 | 25 | - 50 | 40 | 30 | | M6 x 1 | 8.5 | 5 | 6 | |
| | 125 to 200 | | 53 | 51.5 | | 80 | | | | | |
| | 201 to 500 | | 70 | 60 | | | | | | | |

Wiring Examples

Dimensions



| | Size | Bı | C 1 | øD | Hı | к | Lı | L2 | 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 | | | | | | |
| Ì | 32 | 22 | 20.5 | 25 | 8 | 22 | 42 | 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.



-00**L**







Foot Bracket

| Size | Stroke range [mm] | Α | LS | LS₁ | LL | LD | LG | LH | LT | LX | LY | LZ | х | Y |
|------|----------------------|-------|-------|------|------|-----|-----|----|--------|----|------|----|------|------------|
| 16 | 30 to 100 | 106.5 | 77.1 | 16.1 | 5.4 | 66 | 2.8 | 24 | 2.3 | 48 | 40.3 | 62 | 0.2 | Б 0 |
| | 101 to 300 | 126.5 | 97.1 | 10.1 | | 0.0 | | | | | | | 5.2 | 5.0 |
| 25 | 30 to 100 | 142.3 | 104.5 | 19.8 | 8.4 | 66 | 2.5 | 20 | 26 | 57 | 51 5 | 71 | 11 2 | 50 |
| 25 | 101 to 400 | 167.3 | 129.5 | | | 0.0 | 3.5 | 30 | 2.0 | 57 | 51.5 | | 11.2 | 5.6 |
| 32 | 30 to 100 | 160.8 | 119.1 | 19.2 | 11.2 | 6.6 | 4 | 26 | 36 3.2 | 76 | 61.5 | 90 | 11.0 | 7 |
| | 101 to 500 | 190.8 | 149.1 | | 11.5 | | 4 | 36 | | | | | 11.2 | ' |

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.

- * 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.

LG



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

Dimensions



simple joint bracket, refer to the Web Catalog for the LEY series.

| 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 |
| 25 | 30 to 100 | 166.2 | 156.2 | | - 10 | 5 | 1/ | 20 | 18 | 36 | 14.5 | 10 |
| 25 | 101 to 200 | 191.2 | 181.2 | | | 5 | 14 | 20 | 10 | 30 | | |
| 32 | 30 to 100 | 185.6 | 175.6 | | 10 | 6 | 1/ | 22 | 18 | 36 | 18.5 | 10 |
| | 101 to 200 | 215.6 | 205.6 | | 10 | 0 | 14 | 22 | 10 | 30 | 10.5 | 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.



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Rod Type/EQY I H Series Auto Switch Mounting

Auto Switch Proper Mounting Position

Applicable auto switch: D-M9^(V), D-M9^(V), D-M9^(V), D-M9^(A)



| | | | | | | | [mm] | |
|------|--------------|----------|------------|-----------|------------------|-----------------|-----------------|--|
| | Stroke range | | Auto swite | | Return to origin | Operating range | | |
| Size | | Leftward | mounting | Rightward | I mounting | distance | Operating range | |
| | | Α | В | C | D | E | — | |
| 16 | 30 to 100 | 21.5 | 46.5 | 33.5 | 24 5 | (2) | 2.9 | |
| 10 | 105 to 300 | 41.5 | 40.5 | 53.5 | 34.5 | | | |
| 05 | 30 to 100 | 27 | CO F | 39 | 50 F | (0) | 4.0 | |
| 25 | 105 to 400 | 52 | 02.5 | 64 | 50.5 | (2) | 4.2 | |
| 20 | 30 to 100 | 30.5 | CE E | 42.5 | E0 E | (2) | 4.0 | |
| 32 | 105 to 500 | 60.5 | 65.5 | 72.5 | - 53.5 | | 4.9 | |

* 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 [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)

RoHS

Grommet

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



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

Model Selection

EQFS H Series

| 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 Perpendicula | | | | | |
| Wiring type | | 3-v | /ire | | 2-wire | | | | | |
| Output type | N | PN | PI | NP | _ | | | | | |
| 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 c | or less | | | | |
| Leakage current | | 100 µA or les | 0.8 mA or less | | | | | | | |
| Indicator light | Red LED illuminates when turned ON. | | | | | | | | | |
| Standard | | | CE/UKC/ | A marking | | | | | | |

Oilproof Flexible Heavy-duty Lead Wire Specifications

| Auto swit | tch model | D-M9N(V) | D-M9P(V) | D-M9B(V) | | | | | | |
|------------------------|-----------------------------------|---------------|----------------------|----------|--|--|--|--|--|--|
| Sheath | Outside diameter [mm] | ø2.6 | | | | | | | | |
| Inculator | Number of cores | 3 cores (Brow | 2 cores (Brown/Blue) | | | | | | | |
| insulator | Outside diameter [mm] | | | | | | | | | |
| Conductor | Effective area [mm ²] | 0.15 | | | | | | | | |
| Conductor | Strand diameter [mm] | | ø0.05 | | | | | | | |
| Min. bending radius [r | 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(V) | D-M9B(V) | |
|-------------------|----------------------|----------|----------|----|
| | 0.5 m (Nil) | 8 | 7 | |
| Lood wire longth | 1 m (M) | 1 | 4 | 13 |
| Lead wire length | 3 m (L) | 4 | 1 | 38 |
| | 5 m (Z) | 6 | 8 | 63 |

Dimensions



SMC

[g]

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EQY⊟H Series

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

CEUK RoHS

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.

PL

| c. | Programmable | | Controller |
|----|--------------|-------|------------|
| υ. | 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 Perpendicula | | | | | |
| Wiring type | | 3-v | vire | | 2-wire | | | | | |
| Output type | N | PN | PI | NP | _ | | | | | |
| Applicable load | | IC circuit, I | C circuit, Relay, PLC 24 VDC relay, PLC | | | | | | | |
| Power supply voltage | | 5, 12, 24 VDC | C (4.5 to 28 V |) | _ | | | | | |
| Current consumption | | 10 mA | or less | | - | _ | | | | |
| Load voltage | 28 VDC | 28 VDC or less – | | _ | | to 28 VDC) | | | | |
| Load current | | 40 mA or less | | | | 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 L | ED illuminate | es when turne | ned 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(V) | |
|---|-----------------------------------|---------------|----------------|----------------------|--|
| Sheath | Outside diameter [mm] | | ø2.6 | | |
| Inculator | Number of cores | 3 cores (Brow | /n/Blue/Black) | 2 cores (Brown/Blue) | |
| Insulator | Outside diameter [mm] | ø0.88 | | | |
| Conductor | Effective area [mm ²] | 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 swit | ch model | D-M9NE(V) | D-M9PE(V) | D-M9BE(V) |
|------------------|----------------------|-----------|-----------|-----------|
| | 0.5 m (Nil) | 8 | 7 | |
| Lood wire longth | 1 m (M)*1 | 1, | 13 | |
| Lead wire length | 3 m (L) | 4 | 38 | |
| | 5 m (Z)*1 | 6 | 63 | |
| | | | | |

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

Dimensions







SMC

[g]

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

Auto switch model

Electrical entry direction

Wiring type

Output type

Applicable load

Power supply voltage

Current consumption

Internal voltage drop

Leakage current

Auto switch model

Min. bending radius [mm] (Reference values)

Auto switch model

Outside diameter [mm]

Number of cores

Outside diameter [mm]

Effective area [mm²]

Strand diameter [mm]

Refer to the Web Catalog for lead wire lengths.

0.5 m (Nil)

1 m (**M**)

3 m (L)

5 m (Z)

Indicator light

Sheath

Insulator

Conductor

Weight

Lead wire length

Standard

Load voltage

Load current

RoHS Refer to the SMC website for details

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 \rightarrow Green \leftarrow 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.

Auto Switch Specifications

D-M9 W, D-M9 WV (With indicator light)

NPN

28 VDC or less

Oilproof Flexible Heavy-duty Lead Wire Specifications

Refer to the Web Catalog for solid state auto switch common specifications.

D-M9NW(V)

Perpendicular

In-line

on products that are compliant with international standards.

PLC: Programmable Logic Controller

In-line

2-wire

24 VDC relay, PLC

24 VDC (10 to 28 VDC)

2.5 to 40 mA

4 V or less

0.8 mA or less

D-M9BW(V)

2 cores (Brown/Blue)

D-M9BW(V)

7

13

38

63

Perpendicular

D-M9NW D-M9NWV D-M9PW D-M9PWV D-M9BW D-M9BWV

PNP

Perpendicular

In-line

3-wire

IC circuit, Relay, PLC

5, 12, 24 VDC (4.5 to 28 V)

10 mA or less

40 mA or less 0.8 V or less at 10 mA (2 V or less at 40 mA)

100 μ A or less at 24 VDC

D-M9NW(V)

Operating range Red LED illuminates.

3 cores (Brown/Blue/Black)

8

14

41

68

Proper operating range Green LED illuminates.

CE/UKCA marking

D-M9PW(V)

ø2.6

ø0.88

0.15

ø0.05

17

D-M9PW(V)

| Series |
|---------|
| FS H |

Ш

EQY H Series



Options



[mm]

[g]

Dimensions



SMC

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e-Actuator

Easy to Operate Integrated Controller / Guide Rod Type



Auto Switch

Electric Specifications

Wiring Examples





Moment Load Graph

Selection conditions



*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 "lead" and "spee Check the "Speed–Work Load Graph" on pages 59 to 64.

2 Over 75 mm stroke



* The limit of vertical load mass varies depending on the lead

and transfer speed. Check the "Speed-Work Load Graph."

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.



Model Selection **EQYG**

H Series Battery-less Absolute (Step Motor 24 VDC)

e-Actuator Easy to Operate

Moment Load Graph



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Speed–Work Load Graph (Guide)

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

EQYG16LHA



EQYG16LHB



EQYG16LHC







Speed–Work Load Graph (Guide)

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

EQYG16MHA



Horizontal/Lead 5



EQYG16MHC





Vertical/Lead 5





EQY Theres

E-Actuator Easy to Operate **EQYG H** Series 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.

3000 mm/s²

400

Speed [mm/s]

500

600

700

800

.5000 mm/s

200

300

EQYG25LHH



Vertical/Lead 12

9 8

7

6

5

4

3

2

1

0

100

Work load: W [kg]

Horizontal/Lead 12



EQYG25LHB



EQYG25LHC

Horizontal/Lead 3





SMC



Speed–Work Load Graph (Guide)

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

EQYG25MHH





EQYG25MHB



EQYG25MHC

Horizontal/Lead 3



Vertical/Lead 3



Auto Switch

Specifications

Electric

e-Actuator Easy to Operate H Series 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.

3000 mm/s

400

500

600

700

300

Speed [mm/s]

EQYG32LHH



Horizontal/Lead 16



EQYG32LHB



EQYG32LHC

Horizontal/Lead 4



Vertical/Lead 4 50 45 40 Work load: W [kg] 35 30 25 20 3000 mm/s²-15 5000 mm/s² 10 5 ٥ ل 0 20 180 40 60 80 100 120 140 160 Speed [mm/s]



3000 mm/s²

400

500

600

700

Speed–Work Load Graph (Guide)

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

5000 mm/s

300

Speed [mm/s]

200

EQYG32MHH



Horizontal/Lead 16



EQYG32MHB



EQYG32MHC

Horizontal/Lead 4



Vertical/Lead 4



EQY□H Series

EQYG⊟H Series



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: $\boldsymbol{\theta}$



| Sizo | Non-rotating accuracy θ | | | |
|------|--------------------------------|--------|--|--|
| 3120 | EQYG□M | EQYG□L | | |
| 16 | 0.060 | 0.05° | | |
| 25 | 0.06* | 0.040 | | |
| 32 | 0.05° | 0.04 | | |

Plate Displacement: δ



| | | | | | [mm] |
|---------|-------|-------|-------------|-------|-------|
| Madal | | | Stroke [mm] | | |
| woder | 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.

Model Selection **EQYG**



Force Conversion Graph (Guide)



EQYG25



EQYG32 H



SMC

<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 | / G16 | SL□ | E | QYG | 25 L | | E | QYG | 32 L | |
|----------------|-----|--------------|-----|-----|-----|------|---|-----|-----|------|----|
| Lead | Α | В | С | н | Α | В | С | Н | Α | В | С |
| 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 | % | |

Battery-less Absolute (Step Motor 24 VDC)

CACTUATOR Easy to Operate Integrated Controller / Guide Rod Type EQYG H Series EQYG16, 25, 32 (E LA ROHS)

How to Order





2 Bearing type

MSliding bearingLBall 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 | 10 |
| D4 | | Bottom side | |
| | | | |

4 Motor type

| (|
|---|
|---|

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 table below.

| 7 Mo | tor option |
|------|----------------|
| Nil | Without option |
| В | With lock |

Applicable Stroke Table

| | | | | Stroke | e [mm] | | |
|----|--------------|---|---|---|--|---|--|
| 30 | 50 | 100 | 150 | 200 | 250 | 300 | Manufacturable stroke range |
| • | • | • | • | • | _ | _ | 10 to 200 |
| • | | | • | • | • | • | 15 to 300 |
| | | | • | • | | ٠ | 20 to 300 |
| | 30 ● ● | 30 50 ● ● ● ● ● ● | 30 50 100 • • • • • • • • • • • • • • • | 30 50 100 150 • • • • • • • • • • • • • • • • • • • • • • • | Stroke 30 50 100 150 200 • • • • • • • • • • • • • • • • • • • • • • | Stroke [mm] 30 50 100 150 200 250 • • • • • - • • • • • - • • • • • • • • • • • • | Stroke Imm 30 50 100 150 200 250 300 4 4 4 4 4 4 4 4 4 |

| 8 Co | ntroller position |
|-------------|-----------------------|
| В | Integrated controller |

| 🤊 Pai | rallel input | | |
|-------|--------------|-----|---|
| 5 | | NPN | |
| 6 | | PNP | _ |

- *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.

SMC

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.

Wiring Examples

Options

Model Selection

EQFS H Series

EQY⊟H Series

EQYG H Series



Specifications

| | | | | | | | | | | 1 | | | | | | |
|--------------------------|---------------------------------------|------------|---|----------------------|-----------|-----------|-------------|--------------------|------------|------------------------|-----------|------------|------------|--|--|--|
| | Model | | EC | QYG16 ^M □ | H | | EQYG2 | 25 ^M □H | | EQYG32 ^M □H | | | | | | |
| Stroke [mm] | | | | 30 to 200 | | | 30 to | 300 | | 30 to 300 | | | | | | |
| | Stroke [mm] Work load [kg]*1 Vertical | | 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 135 | 132 to 265 | 255 to 511 | 60 to 140 | 90 to 209 | 176 to 411 | 341 to 796 | | | |
| s | Speed [mm/s] | | 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 200 | | | |
| ion | Max. acceleration/ | Horizontal | | | | | | 10000 | | | | | | | | |
| cat | deceleration [mm/s ²] | Vertical | 5000 | | | | | | | | | | | | | |
| cifi | Pushing speed [mm/s ²]*5 | | | 25 | | | 3 | 5 | | | 3 | 0 | | | | |
| be | Positioning repeatability [r | nm] | | | | | | ±0.02 | | | | | | | | |
| or s | Lost motion [mm]*6 | | 0.1 or less | | | | | | | | | | | | | |
| lato | Lead [mm] | | 10 | 5 | 2.5 | 20 | 12 | 6 | 3 | 24 | 16 | 8 | 4 | | | |
| vct t | Impact/Vibration resistance | e [m/s²]*7 | 50/20 | | | | | | | | | | | | | |
| ٩ | Actuation type | | Ball screw + Belt (EQYGDDH), Ball screw (EQYGDDH) | | | | | | | | | | | | | |
| | Guide type | | | | Slidin | g bearing | (EQYG⊟N | /I), Ball bu | Ishing bea | aring (EQY | ′G⊟L) | | | | | |
| | Operating temperature ran | ige [°C] | 5 to 40 | | | | | | | | | | | | | |
| | Operating humidity range | [%RH] | 90 or less (No condensation) | | | | | | | | | | | | | |
| | Enclosure | | | | | | | IP40 | | | | | | | | |
| tions | Motor size | | | □28 | | | <u> </u> | 42 | | | □5 | 6.4 | | | | |
| ificat | Motor type | | | | | Battery | -less abs | olute (Ste | p motor 2 | 4 VDC) | | | | | | |
| spec | Encoder | | | | | E | Battery-les | ss absolut | e encode | er | | | | | | |
| tric | Power supply voltage [V] | | | | | | 24 | VDC ±10 | % | | | | | | | |
| Elec | Power [W] ^{*8 *9} | | Ma | ax. power | 82 | | Max. po | ower 86 | | Max. power 109 | | | | | | |
| it ons | Type ^{*10} | | | | | | Non-m | nagnetizin | g lock | | | | | | | |
| cati | Holding force [N] | | 25 | 54 | 98 | 10 | 69 | 147 | 284 | 10 | 108 | 235 | 431 | | | |
| Loch | Power [W]*9 | | | 2.9 | | | 5 | 5 | | | ! | 5 | | | | |
| - ds | 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/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 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

Integrated Controller / Guide Rod Type EQYG



Weight

Top Side Parallel Motor

| Top Side Parallel | Mote | or | | | | | | | | | | | | | | | | | | | |
|----------------------------------|-----------|------|-------|------|------|------|-----------|------|------|------|------|------|------|-----------|------|------|------|------|------|--|--|
| Series | EQYG16M□H | | | | | | EQYG25M□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] | 1.10 | 1.23 | 1.48 | 1.79 | 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 | 6.53 | | |
| Additional 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 | 3.56 | 3.83 | 4.22 | 4.77 | 5.31 | 5.82 | 6.21 | | |
| Additional weight with lock [kg] | | | 0.19 | | | | 0.31 | | | | | | | 0.58 | | | | | | | |

In-line Motor

| Series | EQYG16M□H | | | | | | EQYG25M□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] | 1.09 | 1.21 | 1.46 | 1.77 | 2.01 | 2.09 | 2.28 | 2.60 | 3.02 | 3.36 | 3.70 | 3.96 | 3.37 | 3.63 | 4.18 | 4.74 | 5.41 | 5.90 | 6.34 | |
| Additional weight with lock [kg] | | | 0.19 | | | | | | 0.31 | | | | 0.58 | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | = | | | |
| Series | | EQ | /G16L | . H | | | | EQ | G25L | . □ H | | | | | EQ | /G32L | . _ H | | | |
| Series Stroke [mm] | 30 | EQ 50 | /G16L 100 | .□H 150 | 200 | 30 | 50 | EQ 100 | ′G25L 150 | . □H 200 | 250 | 300 | 30 | 50 | EQ 100 | /G32L 150 | .□ H 200 | 250 | 300 | |
| Series Stroke [mm] Product weight [kg] | 30 1.10 | EQ 50 1.21 | /G16L 100 1.40 | .□ H 150 1.71 | 200 1.93 | 30 2.10 | 50 2.31 | EQ 100 2.55 | /G25L 150 2.98 | .□ H 200 3.24 | 250 3.56 | 300 3.80 | 30 3.37 | 50 3.64 | EQ 100 4.03 | /G32L 150 4.58 | .□ H 200 5.12 | 250 5.63 | 300 6.02 | |

Model Selection

EQFS H Series



Construction

Top side parallel motor







A-A

In-line motor




Construction

EQYG□M



EQYG



EQYG M: 50st or less



EQYG M: Over 50st



EQYG16L: 30st or less EQYG ²⁵₃₂L: 100st or less



EQYG16L: Over 30st, 100st or less



EQYG L: Over 100st



| 0011 | | | |
|------|------------------------|---------------------------|-----------------------|
| 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 allov | 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

SMC

| Applied portion | Order no. |
|-----------------|-----------------|
| Dieten ved | GR-S-010 (10 G) |
| PISION TOU | GR-S-020 (20 G) |

Model Selection

EQFS H Series

Options



Dimensions: Top Side Parallel 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.
- *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. Order the cable separately.
- *5 A female dustproof cap comes with the setup communication connector (M12).

EQYG16M, EQYG16L Common

| EQYG16M, EQY | EQYG16M, EQYG16L Common [mm] | | | | | | |
|-------------------|------------------------------|-----|----|----|------|----|--|
| Stroke range [mm] | Α | В | С | WA | WB | WC | |
| 30 to 35 | 110 5 | 05 | 37 | 25 | 19 | EE | |
| 40 to 100 | 113.5 | 95 | 52 | 40 | 26.5 | 55 | |
| 105 to 200 | 133.5 | 115 | 82 | 70 | 41.5 | 75 | |

EQYG16M (Sliding bearing) [mm] EQYG16L (Ball bushing bearing) [mm]

| | | | | ing boa | | |
|---|-------------------|------|----|-------------------|-----|----|
| I | Stroke range [mm] | L | DB | Stroke range [mm] | L | DB |
| | 30 to 60 | 51.5 | | 30 to 100 | 75 | 0 |
| | 65 to 100 | 74.5 | 10 | 105 to 200 | 105 | 0 |
| | 105 to 200 | 105 | | | | |



Dimensions: Top Side Parallel Motor



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

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.

- *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. Order the cable separately.
- *5 A female dustproof cap comes with the setup communication connector (M12).

EQYG16M, EQYG16L Common

| Stroke range [mm] | Without lock | a With lock | В | с | WA | WB | wc |
|-------------------|--------------|-----------------------|-----|----|----|------|----|
| 30 to 50 | 202 5 | 264 5 | 01 | 37 | 25 | 19 | 55 |
| 40 to 100 | 203.5 | 204.5 | 01 | 52 | 40 | 26.5 | 55 |
| 105 to 200 | 223.5 | 284.5 | 101 | 82 | 70 | 41.5 | 75 |

EQYG16M (Sliding bearing) [mm]

| | g sourn | 9 |
|-------------------|---------|----------|
| Stroke range [mm] | L | DB |
| 30 to 60 | 51.5 | |
| 65 to 100 | 74.5 | 10 |
| 105 to 200 | 105 | |
| | | |

EQYG16L (Ball bushing bearing) [mm]

| Stroke range [mm] | L | DB |
|-------------------|-----|----|
| 30 to 100 | 75 | 0 |
| 105 to 200 | 105 | 0 |
| | | |



[mm]



Dimensions: In-line Motor





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 | Х |
| 16 | | Up to 100 | 60 | 12 | 21.0 | MEVOR | 10 | 16 | 55 | 44 |
| 10 | LE1G-3010 | 105 to 200 | 09 | 4.3 | 31.0 | 1015 X 0.8 | 10 | 10 | 75 | 44 |
| 25 | | Up to 100 | 95 | 5.4 | 40.2 | M6 v 1 0 | 10 | 20 | 70 | 54 |
| 25 | LE1G-3025 | 105 to 300 | 65 | 5.4 | 40.5 | 1010 X 1.0 | 12 | 20 | 95 | 54 |
| 20 | 1 EVG_\$032 | Up to 100 | 101 | (5.4) | (50.3) | M6 x 1 0 | 10 | 22 | 75 | 64 |
| JZ LETG-S | LL1G-3032 | 105 to 300 | | (3.4) | (30.3) | (50.5) IVIO X 1.0 | 12 | 22 | 105 | 04 |

* 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.

Slider Type Rod Type Guide Rod Type EQFS H/EQY H/EQYG H Series Contractor Electric Specifications

| Compatible motor | | Step motor 24 VDC | |
|-------------------|-------------------|--------------------------------------|----------|
| Power supply | | 24 VDC ±10% | |
| Compatible encode | er | Battery-less absolute | |
| . | Number of inputs | 3 inputs (Non-insulated) | <u>C</u> |
| Parallel input | Input voltage | 24 VDC ±10% | |
| specifications | Input current | 5 mA/circuit | |
| . | Number of outputs | 4 outputs (Non-insulated) | |
| Parallel output | Load voltage | 24 VDC ±10% | |
| specifications | Max. load current | 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.

Model Selection

Options





- * The wiring examples are shown below. Refer to the EQFS/EQY/EQYG operation manual for details.
- * Use the I/O cable (JX-CID-E-D-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 | Movement signal for opposite end |
| 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

| <u> </u> | |
|----------|---------------------------------|
| Name | Details |
| OUTO | 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.



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

Power supply cable

Connector type

Straight

Right angled

Symbol Specifications

| 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.



■ Parallel I/O cable

JX-CIS-E-1-S





S

Α



A end

Connector type: Right angled

(ø15)

PIN 3



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

| - | | | | | |
|---|---|--|--|--|--|
| | B end | | | | |
| Connector typ angled type ca for the parallel type. | e: the right annot be used mounting | | | | |
| 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 | | | | |

35 ±5

B end

| | 164 | |
|---|-----|--|
| | 265 | |
| S | 517 | |
| ; | 88 | |
| ; | 164 | |
| ; | 265 | |
| S | 517 | |
| | | |

| witch | |
|-------|--|
| to S | |
| 2 | |

EQYG H Series

Model Selection

EQFS H Series

EQY⊟H Series

JX-CDA-E-10-S

387

CE/UKCA/UL-compliance List

* For CE, UKCA, and UL-compliant products, refer to the table below.

As of September 2024

Compliance List "O": Compliant "×": Not applicable "--": No setting

| Series | C€ RK | c RL us | |
|--------|----------|----------------|------------------------------|
| | | 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.

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.

*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 etc.

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 Japan.

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

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