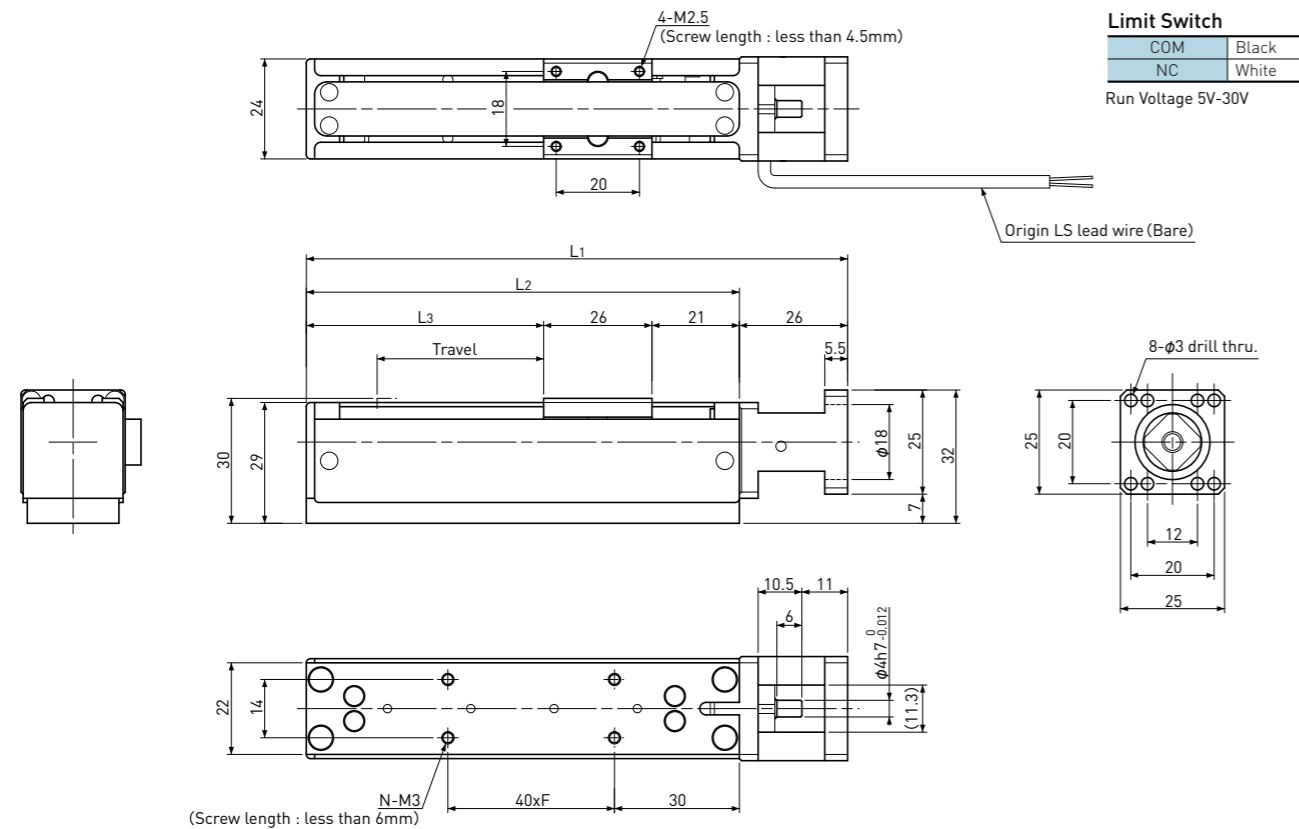


Flex Actuator

Motor-less type (Standard) Precision Ball Screw type Actuator



Note

- 1) There should be no condensation when using.
- 2) Permissible Moment is the number when no load in other direction.
- 3) Please consider Torque as reference number.
- 4) In case of Motor-less type, Repeatability & Lost motion are reference number.
- 5) In case of Motor-less type, Permissible speed & Load Capacity are recommended number.
- 6) Required Torque is under maximum vertical Load Capacity.
- 7) Recommended Coupling
 - SAKAI SEISAKUSYO : LAS-12C-4 × (3 or 4 or 5)
 - NBK : MWS-12C-4 × (4 or 5)
 - NBK : MOS-12C-4 × (3 or 4 or 5)
 - MISUMI : CPSCN12-4 × (4 or 5)

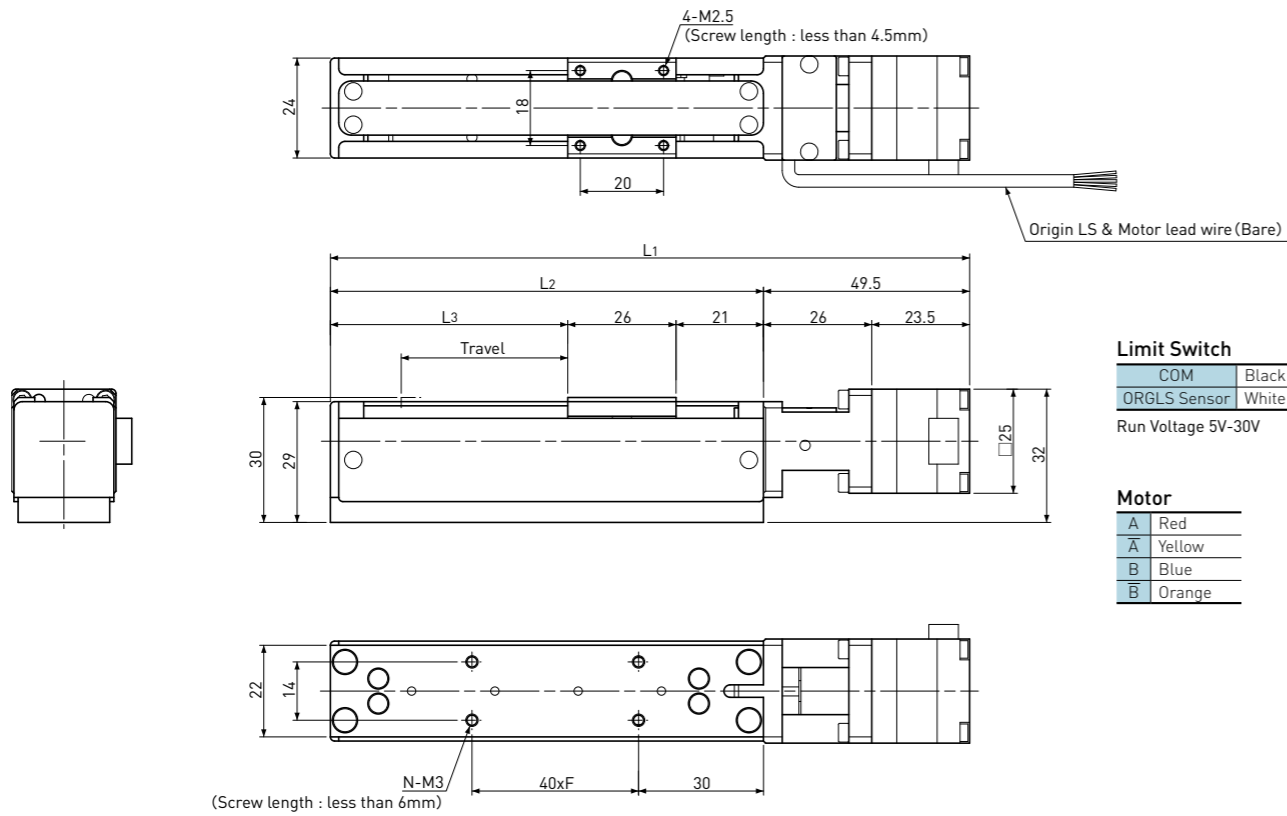
Model Number	Travel (mm)	Screw Lead (mm)	Motor Required Torque (Nm)	Length (mm)					Max. Load Capacity (N)		Permissible speed (mm / sec)	Mass (g)
				L1	L2	L3	F	N	Hor.	Vert.		
FAS-G010-020	20	1	0.009	110	84	37	1	4	29.4	19.6	0 ~ 25	160
FAS-G010-040	40	1	0.009	130	104	57	1	4	29.4	19.6	0 ~ 25	180
FAS-G020-040		2	0.011						29.4	19.6	0 ~ 50	
FAS-G060-040		6	0.017						19.6	9.8	0 ~ 150	
FAS-G100-040		10	0.015						19.6	4.9	0 ~ 250	
FAS-G010-080	80	1	0.009	170	144	97	2	6	29.4	19.6	0 ~ 25	225
FAS-G020-080		2	0.011						29.4	19.6	0 ~ 50	
FAS-G060-080		6	0.017						19.6	9.8	0 ~ 150	
FAS-G100-080		10	0.015						19.6	4.9	0 ~ 250	
FAS-G060-120	120	6	0.017	210	184	137	3	8	19.6	9.8	0 ~ 150	265
FAS-G100-120		10	0.015						19.6	4.9	0 ~ 250	
FAS-G060-160	160	6	0.017	250	224	177	4	10	19.6	9.8	0 ~ 150	310
FAS-G100-160		10	0.015						19.6	4.9	0 ~ 250	
FAS-G060-200	200	6	0.017	290	264	217	5	12	19.6	9.8	0 ~ 150	350
FAS-G100-200		10	0.015						19.6	4.9	0 ~ 250	

Please refer to Technical Description page S106 for the Datum clamp face of the Actuator.

Common Specifications	
Repeatability	Max. ±0.005mm
Lost Motion	Max. 0.005mm
Body Material	Aluminum
Sliding guide	Slide Guide rail
Sensor	Limit switch
Accuracy of Zero pt. return	Max. ±0.01mm
Permissible Moment	
Pitching Mp	0.10Nm
Yawing My	0.09Nm
Rolling Mr	0.23Nm
Lubrication	Grease MSG No.2(KSS)
Operating Temp.	0 ~ 40°C

Flex Actuator

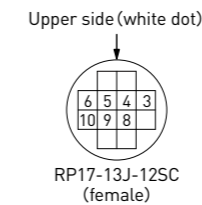
2-phase Stepping Motor (Bi-polar 0.7A / phase & □25) with Precision Ball Screw type Actuator



Motor Model : 10PM-K202B (Single shaft)
Minebea Motor
Driver recommendation : SD4030B3

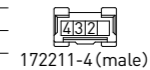
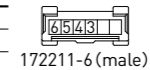
Connector choice

Please designate connector type below.
No connector if there is no designation.
1) None (Bare)
2) RP17-13J-12SC (HIROSE)
3) EI-Connector (TE connectivity)
172211-6 pins for Motor + 172211-4 pins for Sensor



HIROSE RP17 Connector

1	None
2	None
3	Stepping Motor A (Red)
4	Stepping Motor A̅ (Yellow)
5	Stepping Motor B (Blue)
6	Stepping Motor B̅ (Orange)
7	None
8	COM (Black)
9	Short circuit with No.8
10	ORGLS Sensor NC (White)
11	None
12	None



EI Connector

1	None
2	None
3	Stepping Motor A (Red)
4	Stepping Motor A̅ (Yellow)
5	Stepping Motor B (Blue)
6	Stepping Motor B̅ (Orange)
7	None
8	COM (Black)
9	Short circuit with No.8
10	ORGLS Sensor NC (White)
11	None
12	None

Note

- 1) There should be no condensation when using.
- 2) Permissible Moment is the number when no load in other direction.
- 3) Resolution represents the values for full step.
- 4) Model number is for no-connector and lead wire is set on right side on Motor.
- 5) Vibration may increase at low speed or zero return.

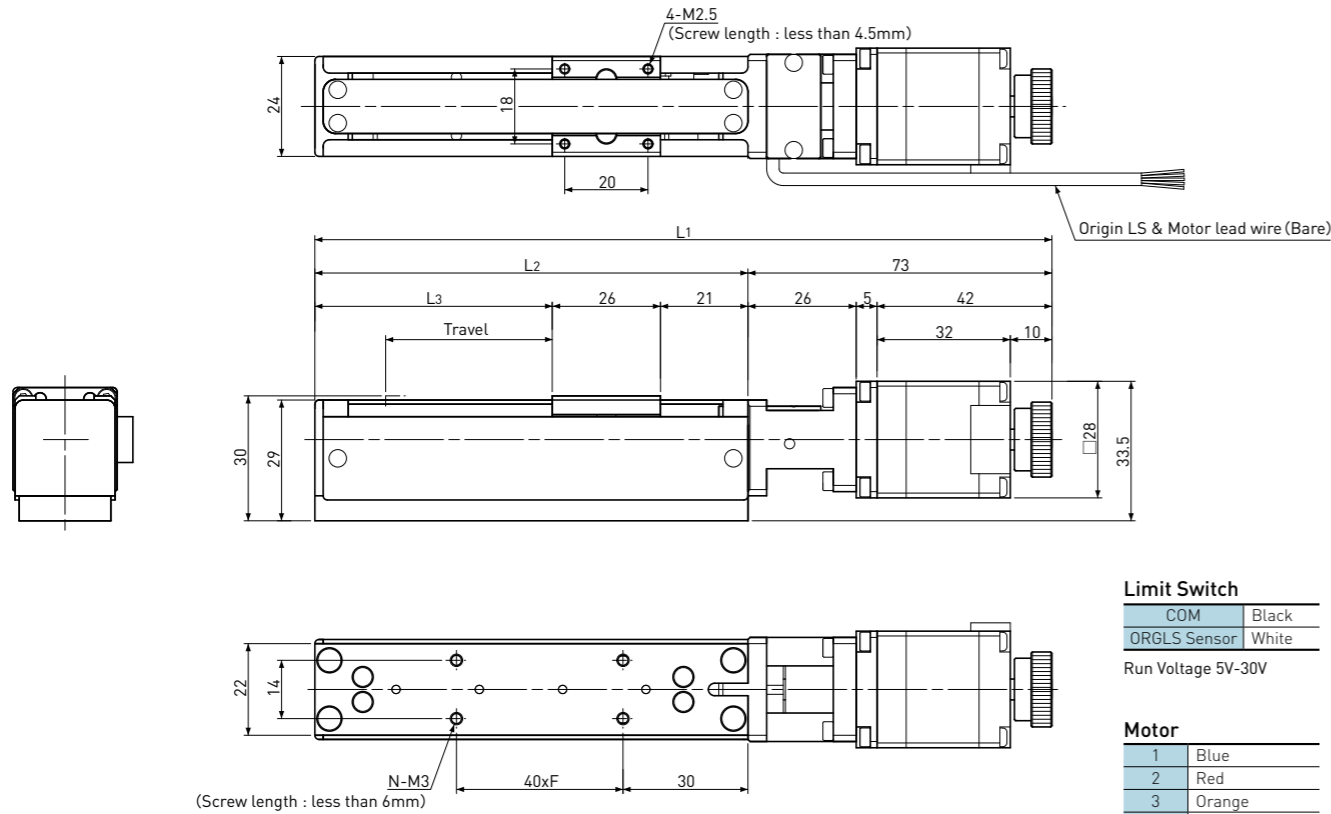
Model Number	Travel (mm)	Screw Lead (mm)	Resolution (μm)	Length (mm)					Max. Load Capacity (N)		Permissible speed (mm / sec)	Max. Acceleration (m / sec ²)	Mass (g)
				L ₁	L ₂	L ₃	F	N	Hor.	Vert.			
FAS-G010-020MNR	20	1	5	133.5	84	37	1	4	29.4	19.6	3 ~ 20	0.1	210
FAS-G010-040MNR	40	1	5	153.5	104	57	1	4	29.4	19.6	3 ~ 20	0.1	230
FAS-G020-040MNR		2	10						29.4	19.6	6 ~ 40	0.2	
FAS-G060-040MNR		6	30						19.6	2.94	18 ~ 120	0.6	
FAS-G100-040MNR		10	50						19.6	2.94	30 ~ 200	1.0	
FAS-G010-080MNR	80	1	5	193.5	144	97	2	6	29.4	19.6	3 ~ 20	0.1	275
FAS-G020-080MNR		2	10						29.4	19.6	6 ~ 40	0.2	
FAS-G060-080MNR		6	30						19.6	2.94	18 ~ 120	0.6	
FAS-G100-080MNR		10	50						19.6	2.94	30 ~ 200	1.0	
FAS-G060-120MNR	120	6	30	233.5	184	137	3	8	19.6	2.94	18 ~ 120	0.6	315
FAS-G100-120MNR		10	50						19.6	2.94	30 ~ 200	1.0	
FAS-G060-160MNR	160	6	30	273.5	224	177	4	10	19.6	2.94	18 ~ 120	0.6	360
FAS-G100-160MNR		10	50						19.6	2.94	30 ~ 200	1.0	
FAS-G060-200MNR	200	6	30	313.5	264	217	5	12	19.6	2.94	18 ~ 120	0.6	400
FAS-G100-200MNR		10	50						19.6	2.94	30 ~ 200	1.0	

Note) Refer to page Q129 for connection diagram of recommended Driver (SD4030B3).
Please refer to Technical Description page S106 for the Datum clamp face of the Actuator.

Common Specifications	
Repeatability	Max. ±0.005mm
Lost Motion	Max. 0.005 mm
Body Material	Aluminum
Sliding guide	Slide Guide rail
Sensor	Limit switch
Accuracy of Zero pt. return	Max. ±0.01mm
Permissible Moment	
Pitching Mp	0.10Nm
Yawing My	0.09Nm
Rolling Mr	0.23Nm
Lubrication	Grease MSG No.2 (KSS)
Operating Temp.	0 ~ 40°C

Flex Actuator

5-phase Stepping Motor (0.75A / phase & □28) with Precision Ball Screw type Actuator



Limit Switch

COM	Black
ORGLS Sensor	White

Run Voltage 5V-30V

Motor

1	Blue
2	Red
3	Orange
4	Green
5	Black

Motor Model : PK523HPB(Double shaft)

Oriental Motor

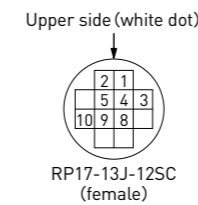
Driver recommendation : KR-A5CC KR-A55MC

Connector choice

Please designate connector type below.

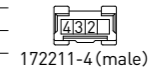
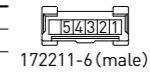
No connector if there is no designation.

- 1) None (Bare)
- 2) RP17-13J-12SC (HIROSE)
- 3) EI-Connector (TE connectivity)
172211-6 pins for Motor + 172211-4 pins for Sensor



HIROSE RP17 Connector

1	Stepping Motor (Blue)
2	Stepping Motor (Red)
3	Stepping Motor (Orange)
4	Stepping Motor (Green)
5	Stepping Motor (Black)
6	None
7	None
8	COM (Black)
9	Short circuit with No.8
10	ORGLS Sensor NC (White)
11	None
12	None



EI Connector

1	Stepping Motor (Blue)
2	Stepping Motor (Red)
3	Stepping Motor (Orange)
4	Stepping Motor (Green)
5	Stepping Motor (Black)
6	None
1	None
2	COM (Black)
3	Short circuit with No.2
4	ORGLS Sensor NC (White)

Note

- 1) There should be no condensation when using.
- 2) Permissible Moment is the number when no load in other direction.
- 3) Resolution represents the values for full step.
- 4) Model number is for no-connector and lead wire is set on right side on Motor

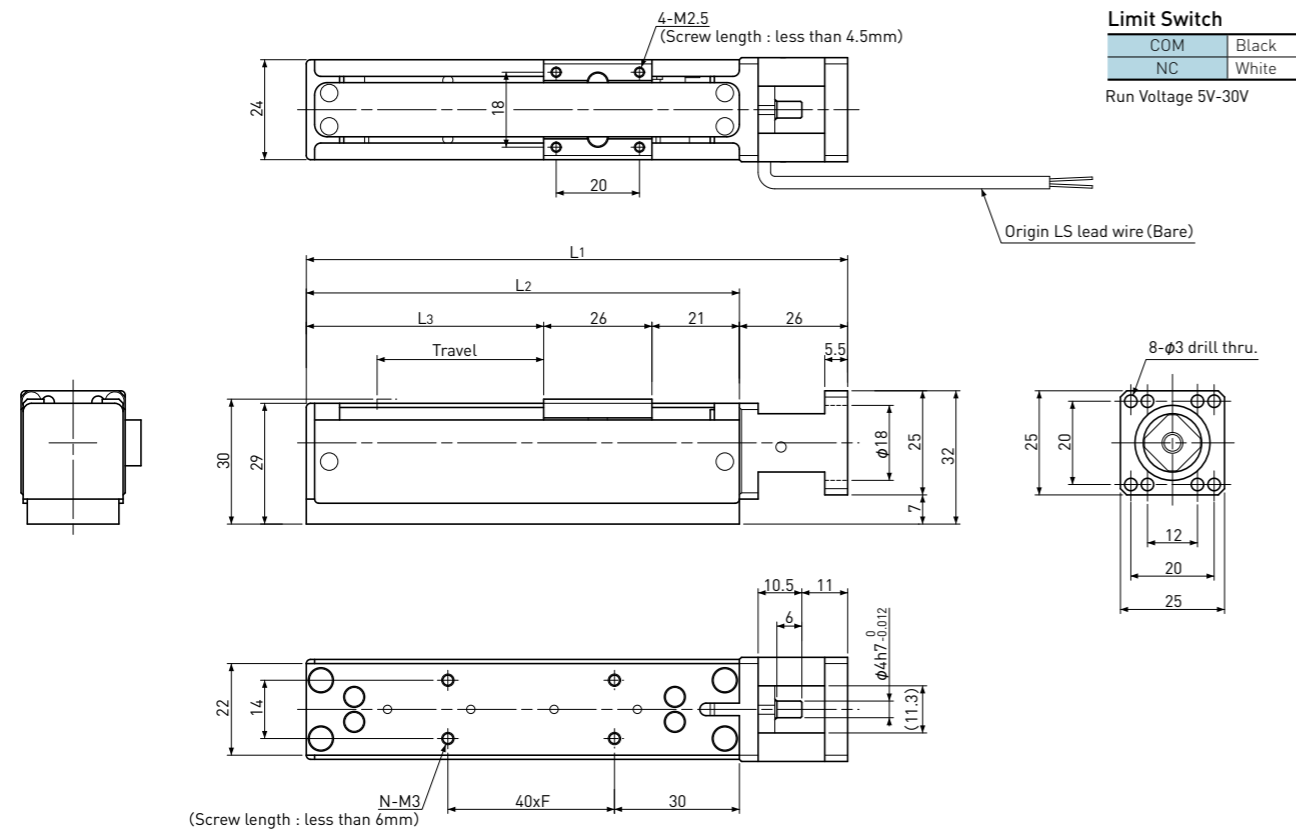
Model Number	Travel (mm)	Screw Lead (mm)	Resolution (μm)	Length (mm)					Max. Load Capacity (N)		Permissible speed (mm / sec)	Max. Acceleration (m / sec ²)	Mass (g)
				L1	L2	L3	F	N	Hor.	Vert.			
FAS-G010-020ENR	20	1	2	157	84	37	1	4	29.4	19.6	0 ~ 25	0.125	265
FAS-G010-040ENR	40	1	2	177	104	57	1	4	29.4	19.6	0 ~ 25	0.125	285
FAS-G020-040ENR		2	4						29.4	19.6	0 ~ 50	0.25	
FAS-G060-040ENR		6	12						19.6	4.9	0 ~ 150	0.75	
FAS-G100-040ENR		10	20						19.6	4.9	0 ~ 250	1.25	
FAS-G010-080ENR	80	1	2	217	144	97	2	6	29.4	19.6	0 ~ 25	0.125	330
FAS-G020-080ENR		2	4						29.4	19.6	0 ~ 50	0.25	
FAS-G060-080ENR		6	12						19.6	4.9	0 ~ 150	0.75	
FAS-G100-080ENR		10	20						19.6	4.9	0 ~ 250	1.25	
FAS-G060-120ENR	120	6	12	257	184	137	3	8	19.6	4.9	0 ~ 150	0.75	370
FAS-G100-120ENR		10	20						19.6	4.9	0 ~ 250	1.25	
FAS-G060-160ENR	160	6	12	297	224	177	4	10	19.6	4.9	0 ~ 150	0.75	415
FAS-G100-160ENR		10	20						19.6	4.9	0 ~ 250	1.25	
FAS-G060-200ENR	200	6	12	337	264	217	5	12	19.6	4.9	0 ~ 150	0.75	455
FAS-G100-200ENR		10	20						19.6	4.9	0 ~ 250	1.25	

Note) Refer to page Q129 or Q130 for connection diagrams of recommended Driver (KR-A5CC, KR-A55MC). Please refer to Technical Description page S106 for the Datum clamp face of the Actuator.

Common Specifications	
Repeatability	Max. ±0.005mm
Lost Motion	Max. 0.005mm
Body Material	Aluminum
Sliding guide	Slide Guide rail
Sensor	Limit switch
Accuracy of Zero pt. return	Max. ±0.01mm
Permissible Moment	
Pitching Mp	0.10Nm
Yawing My	0.09Nm
Rolling Mr	0.23Nm
Lubrication	Grease MSG No.2 (KSS)
Operating Temp.	0 ~ 40°C

Flex Actuator

Motor-less type (Standard) Rolled Ball Screw type Actuator



Note

- 1) There should be no condensation when using.
- 2) Permissible Moment is the number when no load in other direction.
- 3) Please consider Torque as reference number.
- 4) In case of Motor-less type, Repeatability & Lost motion are reference number.
- 5) In case of Motor-less type, Permissible speed & Load Capacity are recommended number.
- 6) Required Torque is under maximum vertical Load Capacity.
- 7) Recommended Coupling
 - SAKAI SEISAKUSYO : LAS-12C-4 × (3 or 4 or 5)
 - NBK : MWS-12C-4 × (4 or 5)
 - NBK : MOS-12C-4 × (3 or 4 or 5)
 - MISUMI : CPSCN12-4 × (4 or 5)

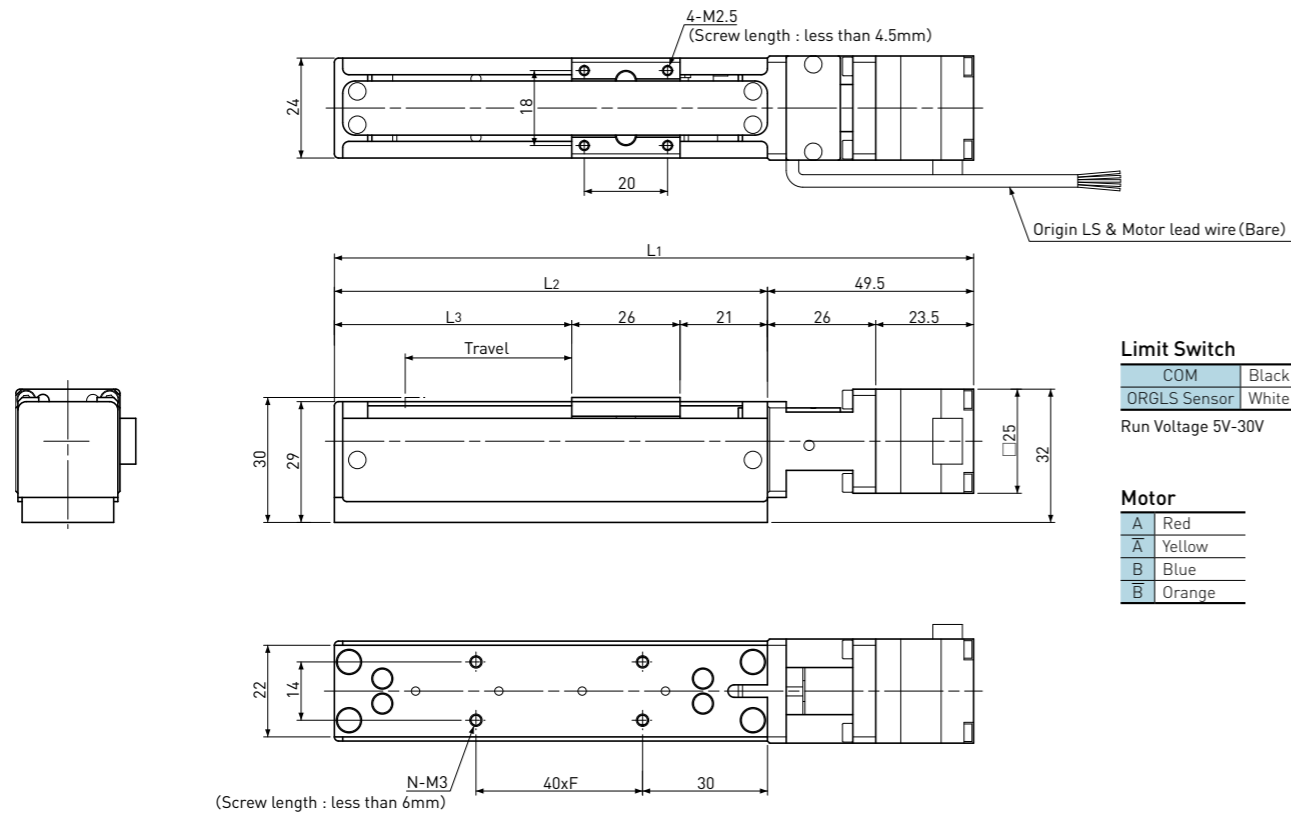
Model Number	Travel (mm)	Screw Lead (mm)	Motor Required Torque (Nm)	Length (mm)					Max. Load Capacity (N)		Permissible speed (mm / sec)	Mass (g)
				L1	L2	L3	F	N	Hor.	Vert.		
FAS-R010-020	20	1	0.009	110	84	37	1	4	29.4	19.6	0 ~ 25	160
FAS-R010-040	40	1	0.009	130	104	57	1	4	29.4	19.6	0 ~ 25	180
FAS-R020-040		2	0.011						29.4	19.6	0 ~ 50	
FAS-R060-040		6	0.017						19.6	9.8	0 ~ 150	
FAS-R100-040		10	0.015						19.6	4.9	0 ~ 250	
FAS-R010-080	80	1	0.009	170	144	97	2	6	29.4	19.6	0 ~ 25	225
FAS-R020-080		2	0.011						29.4	19.6	0 ~ 50	
FAS-R060-080		6	0.017						19.6	9.8	0 ~ 150	
FAS-R100-080		10	0.015						19.6	4.9	0 ~ 250	
FAS-R060-120	120	6	0.017	210	184	137	3	8	19.6	9.8	0 ~ 150	265
FAS-R100-120		10	0.015						19.6	4.9	0 ~ 250	
FAS-R060-160	160	6	0.017	250	224	177	4	10	19.6	9.8	0 ~ 150	310
FAS-R100-160		10	0.015						19.6	4.9	0 ~ 250	
FAS-R060-200	200	6	0.017	290	264	217	5	12	19.6	9.8	0 ~ 150	350
FAS-R100-200		10	0.015						19.6	4.9	0 ~ 250	

Please refer to Technical Description page S106 for the Datum clamp face of the Actuator.

Common Specifications	
Repeatability	Max. ±0.01mm
Lost Motion	Max. 0.01mm
Body Material	Aluminum
Sliding guide	Slide Guide rail
Sensor	Limit switch
Accuracy of Zero pt. return	Max. ±0.01mm
Permissible Moment	
Pitching Mp	0.10Nm
Yawing My	0.09Nm
Rolling Mr	0.23Nm
Lubrication	Grease MSG No.2(KSS)
Operating Temp.	0 ~ 40°C

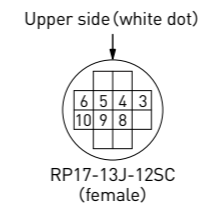
Flex Actuator

2-phase Stepping Motor (Bi-polar 0.7A / phase & □25) with Rolled Ball Screw type Actuator



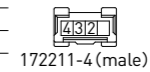
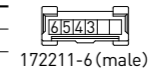
Limit Switch	
COM	Black
ORGLS Sensor	White
Run Voltage 5V-30V	

Motor	
A	Red
A̅	Yellow
B	Blue
B̅	Orange



HIROSE RP17 Connector

1	None
2	None
3	Stepping Motor A (Red)
4	Stepping Motor A̅ (Yellow)
5	Stepping Motor B (Blue)
6	Stepping Motor B̅ (Orange)
7	None
8	COM (Black)
9	Short circuit with No.8
10	ORGLS Sensor NC (White)
11	None
12	None



EI Connector

1	None
2	None
3	Stepping Motor A (Red)
4	Stepping Motor A̅ (Yellow)
5	Stepping Motor B (Blue)
6	Stepping Motor B̅ (Orange)
7	None
8	COM (Black)
9	Short circuit with No.8
10	ORGLS Sensor NC (White)
11	None
12	None

Motor Model : 10PM-K202B (Single shaft)

Minebea Motor

Driver recommendation : SD4030B3

Connector choice

Please designate connector type below.

No connector if there is no designation.

- 1) None (Bare)
- 2) RP17-13J-12SC (HIROSE)
- 3) EI-Connector (TE connectivity)
172211-6 pins for Motor + 172211-4 pins for Sensor

Note

- 1) There should be no condensation when using.
- 2) Permissible Moment is the number when no load in other direction.
- 3) Resolution represents the values for full step.
- 4) Model number is for no-connector and lead wire is set on right side on Motor.
- 5) Vibration may increase at low speed or zero return.

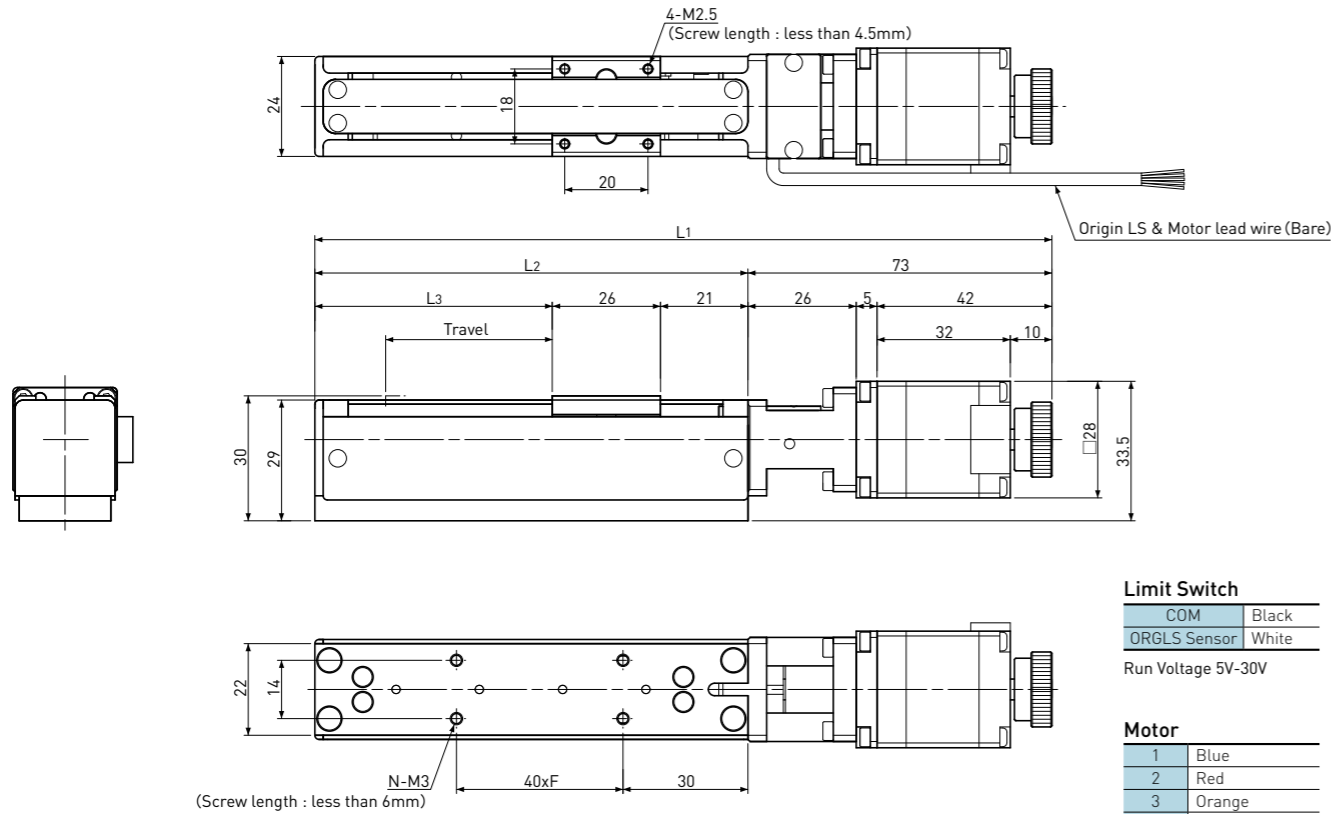
Model Number	Travel (mm)	Screw Lead (mm)	Resolution (μm)	Length (mm)					Max. Load Capacity (N)		Permissible speed (mm / sec)	Max. Acceleration (m / sec ²)	Mass (g)
				L1	L2	L3	F	N	Hor.	Vert.			
FAS-R010-020MNR	20	1	5	133.5	84	37	1	4	29.4	19.6	3 ~ 20	0.1	210
FAS-R010-040MNR	40	1	5	153.5	104	57	1	4	29.4	19.6	3 ~ 20	0.1	230
FAS-R020-040MNR		2	10						29.4	19.6	6 ~ 40	0.2	
FAS-R060-040MNR		6	30						19.6	2.94	18 ~ 120	0.6	
FAS-R100-040MNR		10	50						19.6	2.94	30 ~ 200	1.0	
FAS-R010-080MNR	80	1	5	193.5	144	97	2	6	29.4	19.6	3 ~ 20	0.1	275
FAS-R020-080MNR		2	10						29.4	19.6	6 ~ 40	0.2	
FAS-R060-080MNR		6	30						19.6	2.94	18 ~ 120	0.6	
FAS-R100-080MNR		10	50						19.6	2.94	30 ~ 200	1.0	
FAS-R060-120MNR	120	6	30	233.5	184	137	3	8	19.6	2.94	18 ~ 120	0.6	315
FAS-R100-120MNR		10	50						19.6	2.94	30 ~ 200	1.0	
FAS-R060-160MNR	160	6	30	273.5	224	177	4	10	19.6	2.94	18 ~ 120	0.6	360
FAS-R100-160MNR		10	50						19.6	2.94	30 ~ 200	1.0	
FAS-R060-200MNR	200	6	30	313.5	264	217	5	12	19.6	2.94	18 ~ 120	0.6	400
FAS-R100-200MNR		10	50						19.6	2.94	30 ~ 200	1.0	

Note) Refer to page Q129 for connection diagram of recommended Driver (SD4030B3).
Please refer to Technical Description page S106 for the Datum clamp face of the Actuator.

Common Specifications	
Repeatability	Max. ±0.01mm
Lost Motion	Max. 0.01mm
Body Material	Aluminum
Sliding guide	Slide Guide rail
Sensor	Limit switch
Accuracy of Zero pt. return	Max. ±0.01mm
Permissible Moment	
Pitching Mp	0.10Nm
Yawing My	0.09Nm
Rolling Mr	0.23Nm
Lubrication	Grease MSG No.2 (KSS)
Operating Temp.	0 ~ 40°C

Flex Actuator

5-phase Stepping Motor (0.75A / phase & □28) with Rolled Ball Screw type Actuator



Limit Switch

COM	Black
ORGLS Sensor	White

Run Voltage 5V-30V

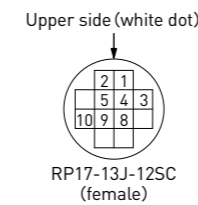
Motor

1	Blue
2	Red
3	Orange
4	Green
5	Black

Motor Model : PK523HPB(Double shaft)
Oriental Motor
Driver recommendation : KR-A5CC KR-A55MC

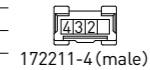
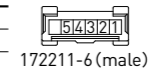
Connector choice

Please designate connector type below.
No connector if there is no designation.
1) None (Bare)
2) RP17-13J-12SC (HIROSE)
3) EI-Connector (TE connectivity)
172211-6 pins for Motor + 172211-4 pins for Sensor



HIROSE RP17 Connector

1	Stepping Motor (Blue)
2	Stepping Motor (Red)
3	Stepping Motor (Orange)
4	Stepping Motor (Green)
5	Stepping Motor (Black)
6	None
7	None
8	COM (Black)
9	Short circuit with No.8
10	ORGLS Sensor NC (White)
11	None
12	None



EI Connector

1	Stepping Motor (Blue)
2	Stepping Motor (Red)
3	Stepping Motor (Orange)
4	Stepping Motor (Green)
5	Stepping Motor (Black)
6	None
1	None
2	COM (Black)
3	Short circuit with No.2
4	ORGLS Sensor NC (White)

Note

- 1) There should be no condensation when using.
- 2) Permissible Moment is the number when no load in other direction.
- 3) Resolution represents the values for full step.
- 4) Model number is for no-connector and lead wire is set on right side on Motor

Model Number	Travel (mm)	Screw Lead (mm)	Resolution (μm)	Length (mm)					Max. Load Capacity (N)		Permissible speed (mm / sec)	Max. Acceleration (m / sec ²)	Mass (g)
				L1	L2	L3	F	N	Hor.	Vert.			
FAS-R010-020ENR	20	1	2	157	84	37	1	4	29.4	19.6	0 ~ 25	0.125	265
FAS-R010-040ENR	40	1	2	177	104	57	1	4	29.4	19.6	0 ~ 25	0.125	
FAS-R020-040ENR		2	4						29.4	19.6	0 ~ 50	0.25	
FAS-R060-040ENR		6	12						19.6	4.9	0 ~ 150	0.75	
FAS-R100-040ENR	10	20	19.6	4.9	0 ~ 250	1.25	330						
FAS-R010-080ENR	80	1	2	217	144	97		2	6	29.4	19.6	0 ~ 25	0.125
FAS-R020-080ENR		2	4							29.4	19.6	0 ~ 50	0.25
FAS-R060-080ENR		6	12							19.6	4.9	0 ~ 150	0.75
FAS-R100-080ENR	10	20	19.6	4.9	0 ~ 250	1.25	370						
FAS-R060-120ENR	120	6	12	257	184	137		3	8	19.6	4.9	0 ~ 150	0.75
FAS-R100-120ENR		10	20							19.6	4.9	0 ~ 250	1.25
FAS-R060-160ENR		6	12							297	224	177	4
FAS-R100-160ENR	10	20	19.6	4.9	0 ~ 250	1.25							
FAS-R060-200ENR	200	6	12	337	264	217	5	12	19.6	4.9	0 ~ 150	0.75	455
FAS-R100-200ENR		10	20						19.6	4.9	0 ~ 250	1.25	

Note) Refer to page Q129 or Q130 for connection diagrams of recommended Driver (KR-A5CC, KR-A55MC).
Please refer to Technical Description page S106 for the Datum clamp face of the Actuator.

Common Specifications	
Repeatability	Max. ±0.01mm
Lost Motion	Max. 0.01mm
Body Material	Aluminum
Sliding guide	Slide Guide rail
Sensor	Limit switch
Accuracy of Zero pt. return	Max. ±0.01mm
Permissible Moment	
Pitching Mp	0.10Nm
Yawing My	0.09Nm
Rolling Mr	0.23Nm
Lubrication	Grease MSG No.2 (KSS)
Operating Temp.	0 ~ 40°C