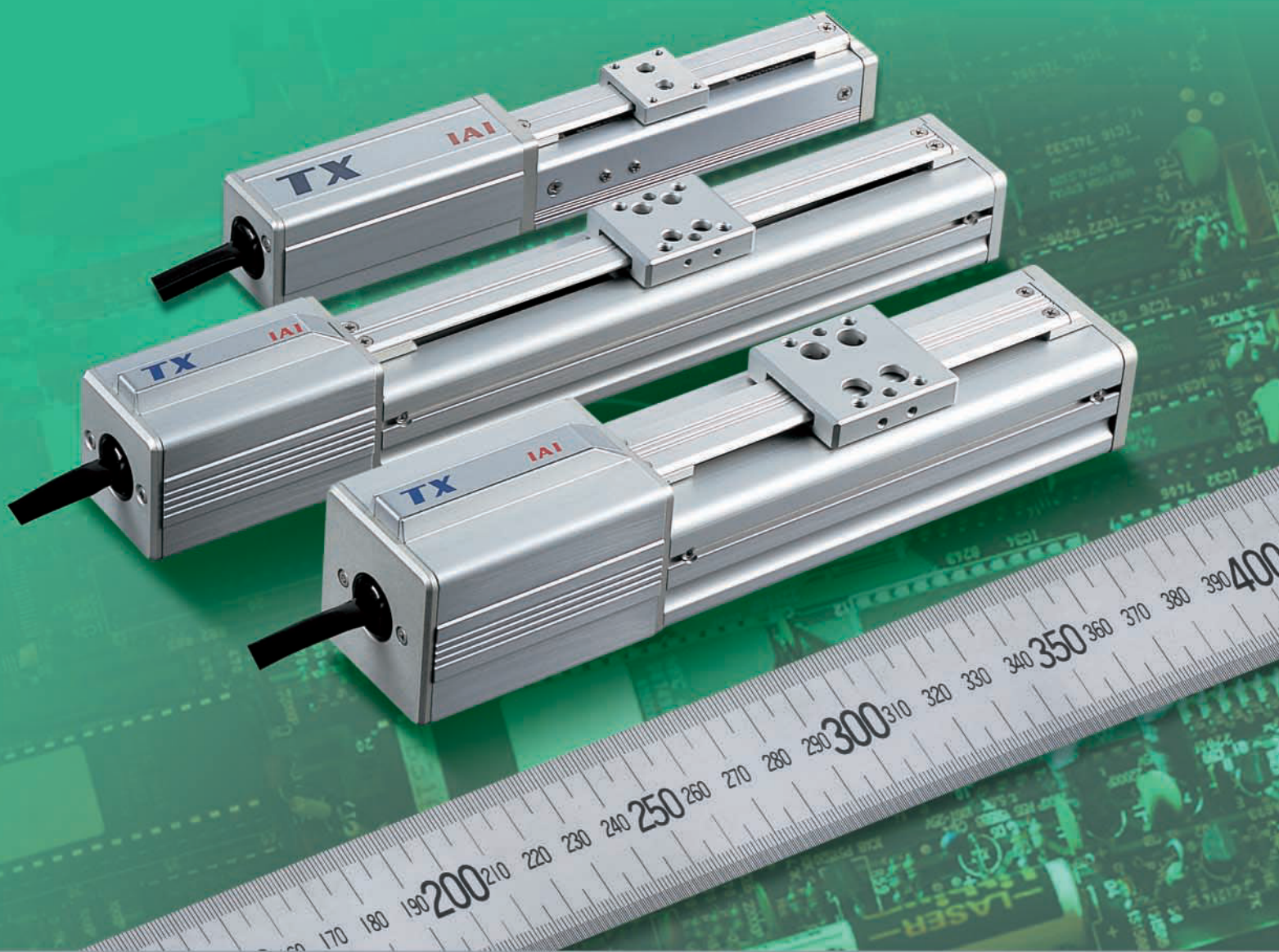




The Solution: Schlüter

TX
Tiny Actuator

Introducing a palm-size, ultra compact ballscrew actuator with conventional stepper motor!

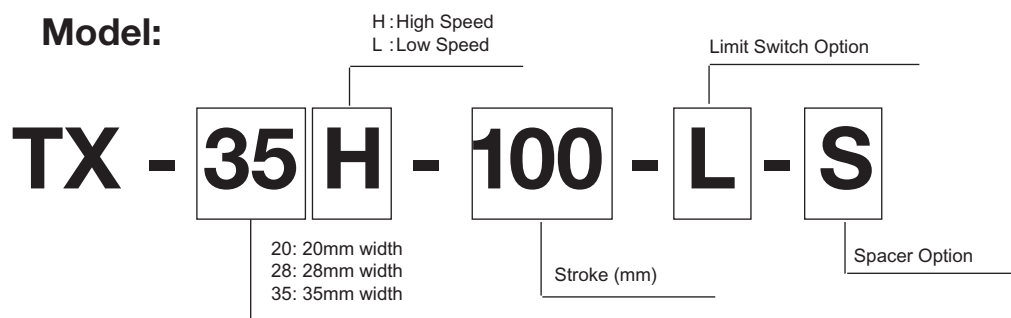
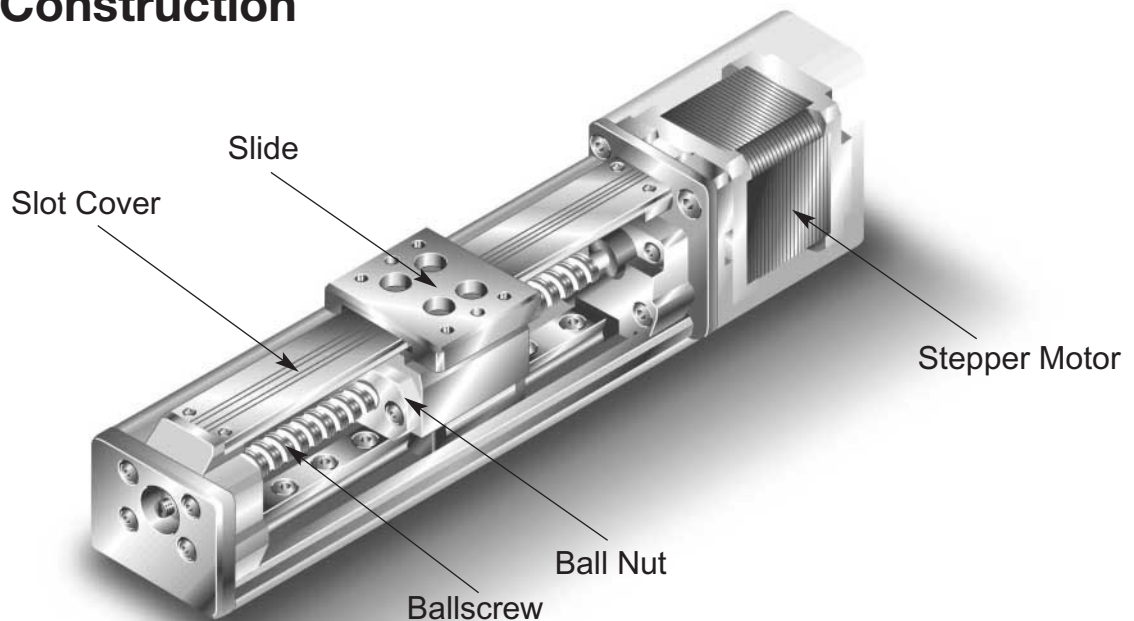
TX-20/28/35

Tiny Actuator

Features

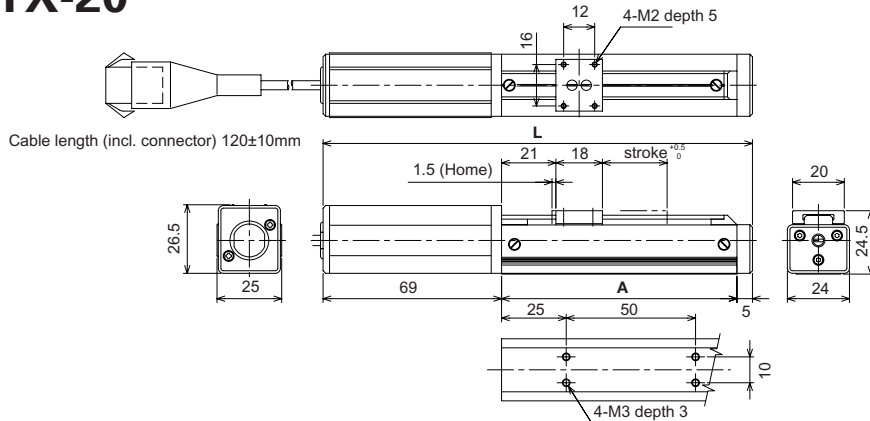
- Micro-sized component design excels in space efficiency and mounting possibilities
- High performance at an affordable price
- Built-in precision linear guide allows the ability for the unit to take high moment loads.
- Conventional 2-phase stepper motor for various drivers

Actuator Construction



Dimensions

TX-20

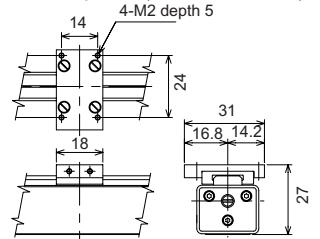


stroke (mm)	25	50
L	165	190
A	91	116
Weight(kg)	0.20	0.23

Sensor Specification

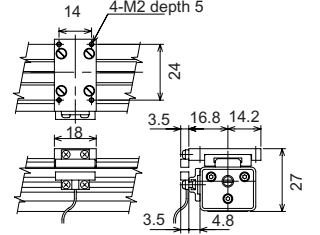
Switch	Proximity Switch, N/O
Max. Switching Capacity	10W/0.3A
Max. Voltage	AC125V
Min. Applicable Load	10μA 10μV
Length of lead	10cm

Slide Spacer (Model TXA-101)



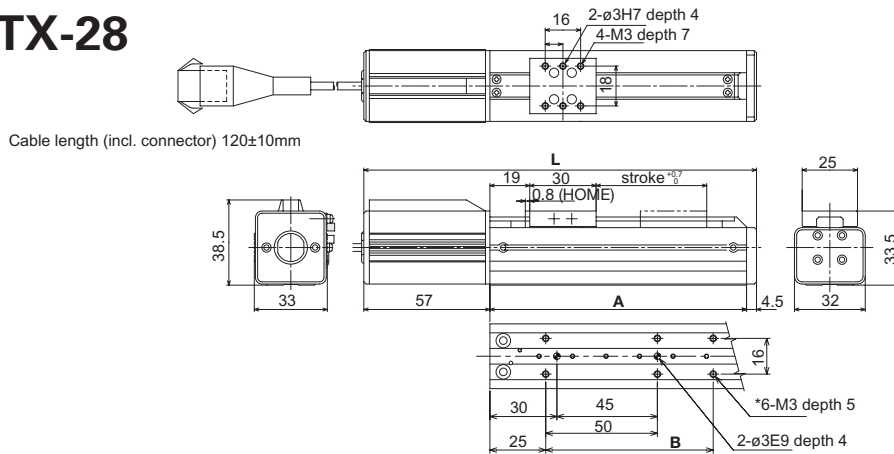
(Note) Uses same mounting plate for the sensor unit.

Sensor Unit (Model TXS-002/003)



(Note) Uses same mounting plate for the sensor unit.

TX-28

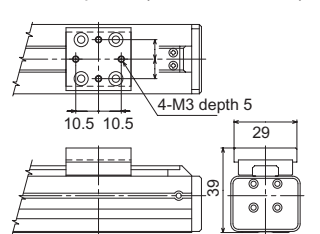


stroke (mm)	25	50	75	100
L	152.5	177.5	202.5	227.5
A	91	116	141	156
B	50	50	75	100
Weight(kg)	0.36	0.38	0.41	0.44

Sensor Specification

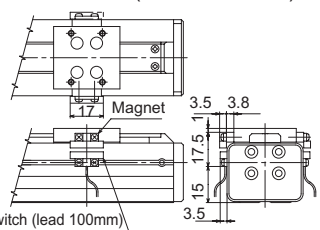
Switch	Proximity Switch, N/O
Max. Switching Capacity	10W/0.3A
Max. Voltage	AC125V
Min. Applicable Load	10μA 10μV
Length of lead	10cm

Slide Spacer (Model TXA-201)



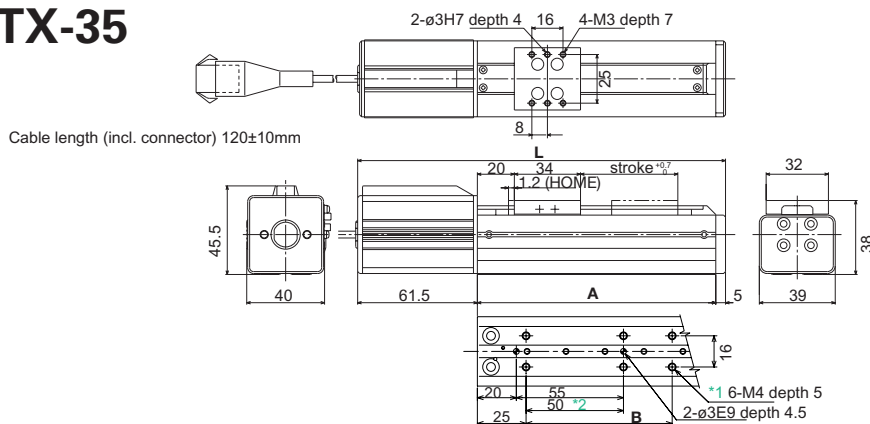
(Note) Uses same mounting plate for the sensor unit.

Sensor Unit (Model TXS-001)



(Note) Uses same mounting plate for the sensor unit.

TX-35

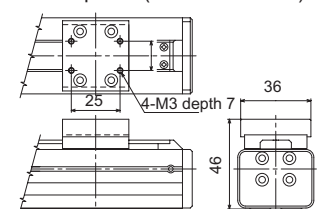


stroke (mm)	50	75	100	125	150	200	250	300
L	189	214	239	264	289	339	389	439
A	122.5	147.5	172.5	197.5	222.5	272.5	322.5	372.5
B	50	75	100	125	150	200	250	300
Weight(kg)	0.55	0.58	0.62	0.67	0.71	0.80	0.88	0.96

Sensor Specification

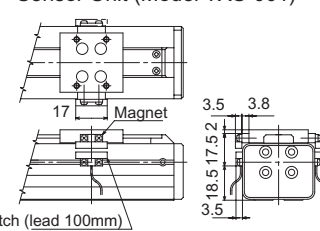
Switch	Proximity Switch, N/O
Max. Switching Capacity	10W/0.3A
Max. Voltage	AC125V
Min. Applicable Load	10μA 10μV
Length of lead	10cm

Slide Spacer (Model TXA-301)



(Note) Uses same mounting plate for the sensor unit.

Sensor Unit (Model TXS-001)



(Note) Uses same mounting plate for the sensor unit.

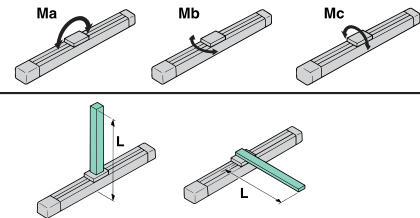
*1 50mm stroke has a total of 4 M4 holes for frame mounting. 250 and 300mm strokes are with 6-M4 depth 3.
*2 50 and 300mm strokes have no mounting holes in this position.

Actuator Specifications

Type	TX-20L			TX-28L<H>				TX-35L<H>							
Encoder Type	Incremental														
Screw Lead (mm)	2			2<6>											
Stroke (mm)	25	50	25	50	75	100	50	75	100	125	150	200	250	300	
Maximum Speed (mm/sec)	50			50<150>											
Payload	0.5kg Horizontal, 0.25kg Vertical			1.5<0.6>kg Horizontal, 0.7<0.3>kg Vertical				3.0<1.5>kg Horizontal, 1.5<0.7>kg Vertical							
Thrust (N)	25			65<22>				158<53>							
Repeatability (mm)	±0.02			±0.02<±0.05>											
Homing Accuracy (mm)	±0.02			±0.02<±0.06>											
Ballscrew	ø6mm Rolled														
Backlash	0.05mm or less														
Guide	Linear Guide														
Load Moment	Ma:0.11Nm, Mb:0.12Nm, Mc:0.14Nm			Ma:0.25Nm, Mb:0.25Nm, Mc:0.5Nm				Ma:0.5Nm, Mb:0.5Nm, Mc:1.0Nm							
Overhang Load Length	Ma: 40mm or less, Mb•Mc: 12mm or less			Ma: 60mm or less, Mb•Mc: 50mm or less				Ma: 75mm or less, Mb•Mc: 60mm or less							
Base		Exclusive Aluminium Extrusion(A6N01S-T5 equivalent), White Alumite Treatment													
Option	Motor Robot Cable (5m)	CB-TX-MA050-RB													
	Sensor Unit	TXS-003	TXS-002		TXS-001										
	Slide Spacer	TXA-101			TXA-201				TXA-301						

Notes

Payload	Maximum payload will take 0.1sec to reach the maximum speed. Load uniformly distributed on the slide. Base affixed to a flat, strong frame.
Maximum Thrust	Maximum value on the centre of the ballscrew.
Moment	Ma, Mb, Mc moments must be at or below the specification values.
Overhang Load Length	The centre of gravity exists at the halfway point of the overhang load length.



Motor Specifications

Type		TX-20	TX-28	TX-35
Electrical	Fundamental Step Angle	1.8°		
	Driving Method	Unipolar 4-2 Phase On		
	Motor Rated Voltage	DC7.0V	DC1.0V	DC2.64V
	Motor Rated Current	DC0.35A	DC1.5A	DC1.6A
	Winding Resistance	20Ω±10%	0.7Ω±15%	1.65Ω±10%
	Winding Inductance	4.3mH±20% (1V 1kHz)	0.35mH±30% (1V 1kHz)	0.83mH±20% (1V 1kHz)
	Insulation Class	Class B (excluding lead wire)	Class E	Class B (excluding lead wire)
Dielectric Strength		500V AC 1 Min.		
Performance	Positional Accuracy	1.8°±5%		
	Step Position Accuracy	1.8°±5%		
	Motor Holding Torque	0.02Nm min. at 2 phase on 3.5A/phase	0.04Nm min. at 2 phase on 1.5A/phase	0.118Nm min. at 2 phase on 1.6A/phase
	Detent Torque	0.118x10-2 ² Nm Min.	0.025x10 ⁻¹ Nm Min.	0.353x10 ⁻² Nm Min.
	Max Starting Pulse Rate		2 Phase 1400pps / 1-2Phase 3000pps NOM.	2 Phase 1800pps / 1-2Phase 3800pps NOM
Temperature Rise		80°C Max.	60°C Max. at 10000PPS	80°C Max. at 2 phase on DC2.54V
Mechanical	Rotar Inertia	4x10 ⁻⁷ kg-m ²	8x10 ⁻⁷ kg-m ²	20x10 ⁻⁷ kg-m ²
	Shaft Runout	0.05mm T.I.R. Max.	0.025mm T.I.R. Max.	
	Radial Play	0.03mm Max. / 4.904N Load	0.025mm Max. / 4.9N Load	0.02mm Max. / 4.904N Load
	Thrust Play	0.075mm Max. / 9.807N Load	0.075mm Max. / 9.8N Load	0.02mm Max. / 8.826N Load
	Weight	0.085kg	0.15kg	0.25kg
Enviro- ment	Operating Temp. Range	-20°C ~ +50°C	-20°C ~ +40°C	-20°C ~ +50°C
	Operating Humidity Range	5%RH ~ 95%RH		
	Storage Temp. Range	-40°C ~ +70°C		



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