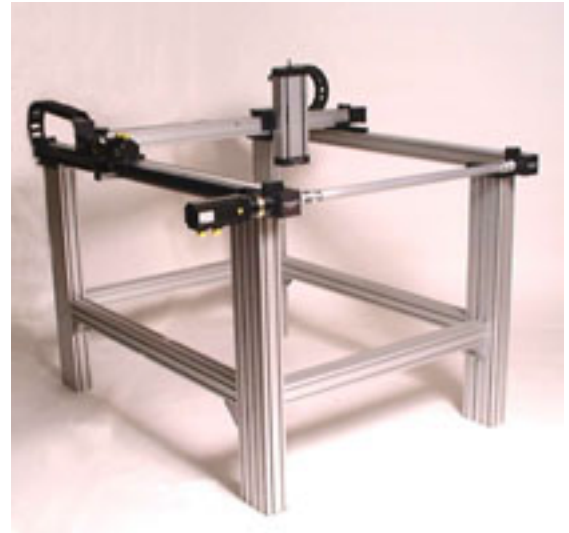




## Robotic & Linear Positioning Actuators

The following products suit many applications that include linear positioning, robotic applications, pick and place mechanisms, and XYZ axis gantry systems.

- High Strength Belt or Ballscrew Driven Linear Actuators
- Belt Driven Linear Actuator
- Ballscrew Driven Linear Actuator
- Built-in Linear Ball Rail Guide System
- High Precision Reinforced Polyurethane Belt Drive
- Ballscrew and Leadscrew Driven Actuators
- Options that include built-in low backlash planetary gear reducers, belt reduction drive systems, and custom built adapters.
- Accessories



## High Strength Belt or Ballscrew Driven Linear Actuators

### Features

- Linear velocities over 3M/sec
  - Heavy duty anodized aluminum extrusion
  - Low friction bearing guide system
  - Clamps for rigid mounting of actuators
  - Optional belt reduction drives
  - Optional linear scale feedback for high positional accuracy Built-in single point lubrication for guide system
  - Lengths to 12 meters
  - Mechanical and proximity switch ready
  - Assembled to the customer's requirements
- Optional built-in low backlash planetary gear reducer
  - Adapter plates available for easy machine assembly
  - Complete systems are available.



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## Belt Driven Linear Actuator

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### Features

- High thrust capacities
- Belt acts as cover
- Highly repeatable positioning
- Ideal for high speed applications



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## Ball screw Driven Linear Actuator

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### Features

- Precision rolled ballscrews
- Optional ground ballscrews or leadscrews
- Bellows cover to protect screw and guide system
- High accuracy applications
- High thrust capacity

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## Built-in Linear Ball Rail Guide System

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### Features

- Smooth operation with high stiffness and excellent moment capacity
- Low friction
- Supports high loads in most mounting configurations



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## High Precision Re-inforced Polyurethane Belt Drive

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### Features

- New arc-power design belt
- Reduced noise
- Zero backlash meshing of belts and pulleys
- Less vibration
- Self tracking
- Increased thrust power
- Improved linear repeatability



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## Ballscrew and Leadscrew Driven Actuators

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### Features

- Precision rolled and ground ballscrews are available in 5, 10, 20, and 25 mm leads
- ACME leadscrews can be provided at lower cost for less demanding applications
- Several ball nut options for low or zero backlash requirements



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## Options

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### Built-in Low Backlash Planetary Gear Reducers

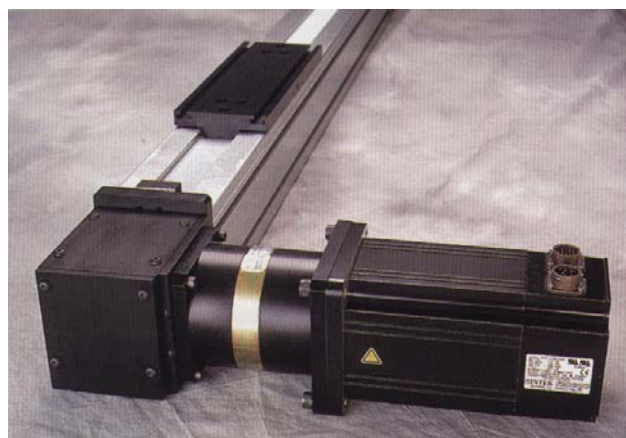
- No interface adapters required
- No shaft couplings
- Reducers can be adapted to most any motor

### Belt Reduction Drive Systems

- Space saving belt drive motor to actuator mounting
- Adapts to your motor dimensions
- Available with reduction ratios up to 3:1

### Custom Built Adapters

- Adapters for motor to actuator mounting
- Can be supplied with high-torsional servo couplings



**Built-in, Low Backlash Planetary Gear Reducers**



**Belt Reduction Drive Systems**

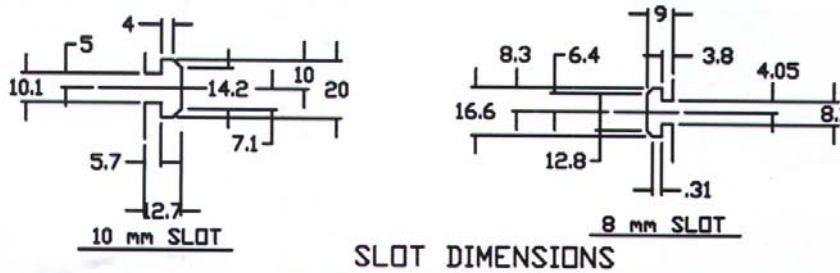


**Custom Built Adapters**

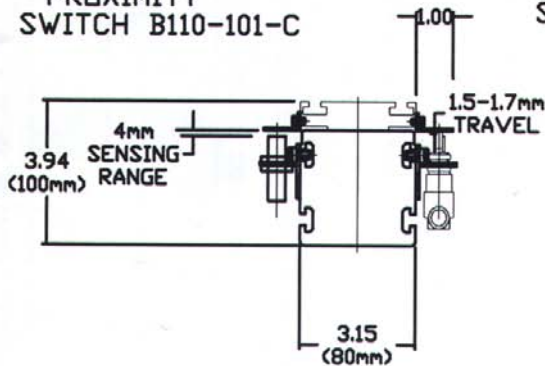
## Accessories

### Accessories

- T-slot compatible w/ Bosch aluminum extrusion hardware for mounting fasteners/connectors, electrical conduit, etc.
- Clamps are available for secure mounting of the actuators to machine frames
- Mechanical and proximity limit switches
- Linear scale feedback
- Custom length torque tubes for dual-axis gantry style applications
- Motor couplings
- Cable carriers
- Adapter plates for creating most any XYZ configuration.

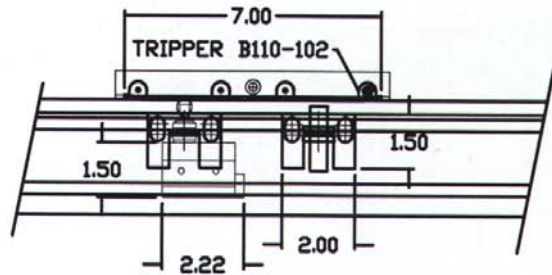


PROXIMITY SWITCH B110-101-C



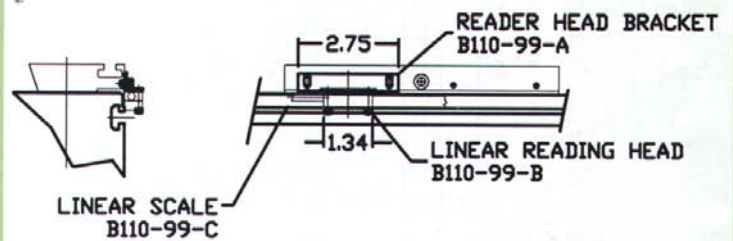
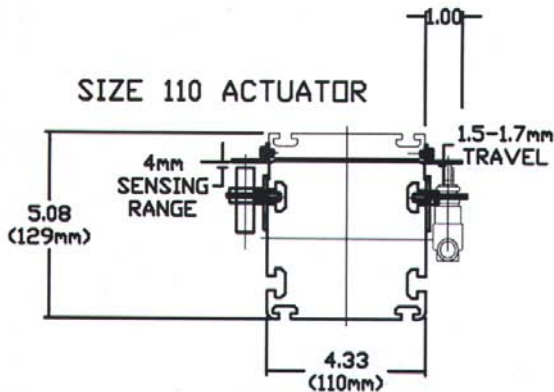
SIZE 80 ACTUATOR

MECHANICAL SWITCH B110-101-B



MECHANICAL and PROXIMITY SWITCH DIMENSIONS

SIZE 110 ACTUATOR



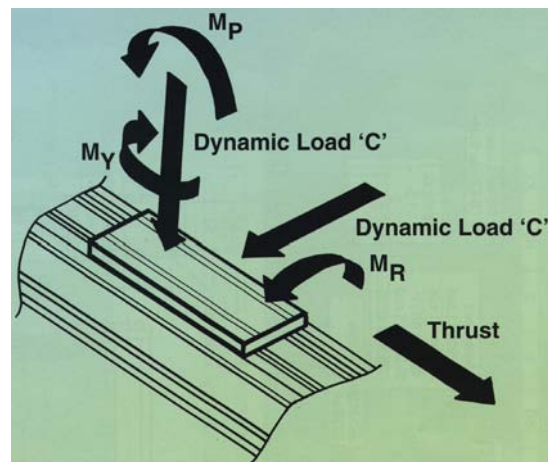
LINEAR SCALE DIMENSIONS

## Performance Specifications

### Extrusion

Model	Moment of Inertia	
	I <sub>x</sub> (cm <sup>4</sup> )	I <sub>y</sub> (cm <sup>4</sup> )
B80	200	55
B110	270	120

**Notes:** Straightness 0.0125"/ft./length  
Twist ¼"/ft, 3" max./6m length



### Belt Drive

Model	Lead Constant (mm/rev.)	Max. Input Torque (N-M)	Belt		
			Maximum Force N (lbs)	Elastic Limit N (lbs)	Type
B80	200	90	3750 (843)	7500 (1686)	BAT10
B80	200	55	1750 (393)	3500 (787)	AT5
B110	270	120	3750 (843)	7500 (1686)	BAT10
Model	Carriage Length (mm)	Dynamic Load Capacity C (N)	Dynamic Moment Capacity		
			ROLL M <sub>R</sub> (NM)	PITCH M <sub>P</sub> (NM)	YAW M <sub>Y</sub> (NM)
B80	190	23640	457	365	365
	260	47280	731	1900	1900
	400	70920	1097	3400	3400
	500	94560	1460	5500	5500
B80 AT5 Series	190	15206	282	207	207
	260	30412	600	1400	1400
	400	45618	770	2380	2380
	500	60824	1025	3850	3850
B110	210	23640	457	365	365
	305	47280	731	2200	2200
	425	70920	1097	3900	3900
	508	94560	1460	5900	5900

### Ballscrew

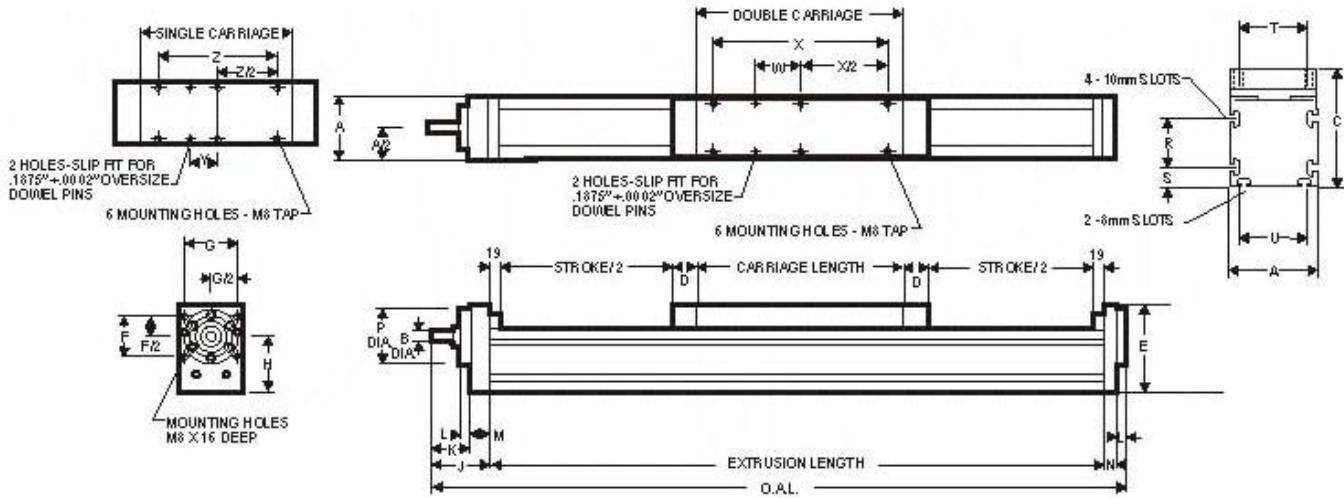
Model	Lead Constant (mm/rev.)	End Bearing		Screw	
		Dynamic Load N (lbs)	Static Load N (lbs)	Dynamic Load Kg (lbs)	Static Load Kg (lbs)
S80	5	21200 (4770)	13400 (3010)	1519 (3350)	3464 (7638)
	10			539 (1188)	1039 (2290)
	20			719 (1585)	1280 (2822)
S110	5	26000 (5850)	16600 (3730)	1078 (2377)	2594 (5720)
	10			1858 (4097)	3853 (8496)
	25			804 (1773)	1624 (3581)
Model	Carriage Length (mm)	Dynamic Load Capacity C (N)	Dynamic Moment Capacity		
			ROLL M <sub>R</sub> (NM)	PITCH M <sub>P</sub> (NM)	YAW M <sub>Y</sub> (NM)
B80	190	15206	282	207	207
	260	30412	600	1400	1400
B110	210	23640	457	365	365
	305	47280	731	2200	2200

# Dimensions & Ordering Information

## Ordering Codes – Ballscrew Driven Linear Actuator:

Style	Module	Carriage	Stroke	Drive	Lead	Ratio	Scale	Special
S	110	B	828	SD	5	0	NS	XX
Screw		80 110	xxxx (mm)	5 - 5 mm Lead 10 - 10 mm Lead 20 - 20 mm Lead 25 - 25 mm Lead		NS-No Scale LS-Linear Scale		
		A B	SD-Standard Drive BD-Belt Drive		Ratio's xx: 1, 1.5, 2, 2.5, 3			
Carriage Type	Number Of Bearing Blocks	Carriage B80	Length B110					
A	1	190	210					
B	2	260	305					

## Dimensions – Ballscrew Driven Linear Actuator:



ACTUATOR	DIMENSIONS																				CARRIAGE LENGTH			
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	U	W	X	Y	Z	SINGLE	DOUBLE
S80	80	12	108.3	31.8	109	50	66	70	73	48	11.5	25	16	69.8	45	18	65	35	53.29	220	34.24	150	190	260
S110	110	15	137	38.1	134	70	70	90	75	50	11.5	25	16	76.2	60	25	91.7	85	50.8	203.2	50.8	132	210	305

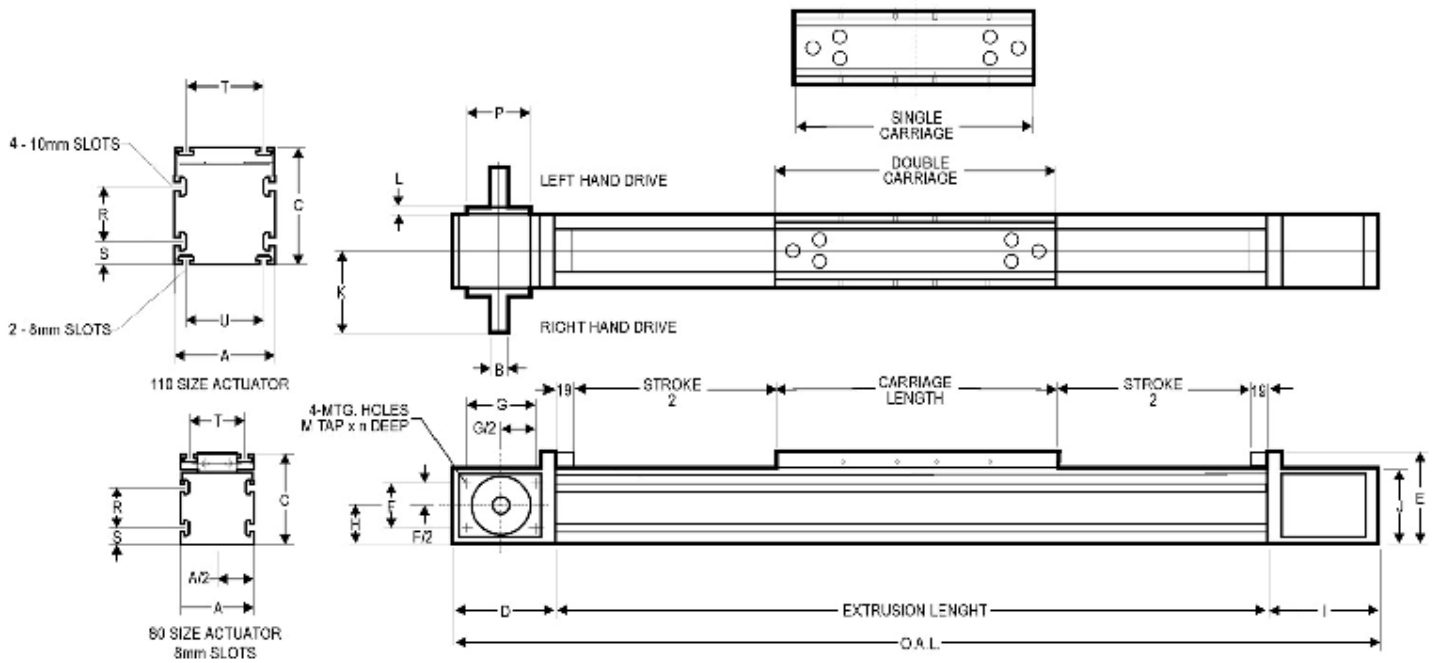
O.A.L. = "J" + "N" + "L" + (2 X "D") + 38 + STROKE + CARRIAGE LENGTH

# Dimensions & Ordering Information *Cont'd*

## Ordering Codes – Belt Driven Actuator:

Style	Module	Carriage	Stroke	Drive	Hand	Ratio	Scale	Special
<b>B</b>	<b>110</b>	<b>B</b>	<b>828</b>	<b>SD</b>	<b>L</b>	<b>0</b>	<b>NS</b>	<b>XX</b>
-----		-----		-----		-----		-----
Belt		80 110	xxxx (mm)	L - Left Hand R - Right Hand		NS-No Scale LS-Linear Scale		
A B C D				SD-Single Shaft DD-Double Shaft RD-Reducer		Ratio's xx:1 3, 4, 5.5, 7, 10, 16, 22, 28, 40		
Number Of Bearing Blocks		Carriage	Length					
Carriage Type		B110	B80					
A	1	210	190					
B	2	305	260					

## Dimensions – Belt Driven Actuator:



ACTUATOR	DIMENSIONS																			CARRIAGE LENGTH	
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	R	S	T	U	SINGLE	DOUBLE
B80	80	19	100	111	102	31.75	69.85	43	121	82.5	90.25	9.5	M6	8	66.68	45	18	55	-	190	260
B110	110	20	129	150	127	38	101.6	57.5	160	114.3	111.8	9.3	M8	12	88.9	60	25	85	85	210	305

O.A.L. = "D" + "I" + 38(mm) + STROKE(mm) + CARRIAGE LENGTH

NOTE: 8mm SLOTS IN CARRIAGE