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TECHNOLOGY GROUP

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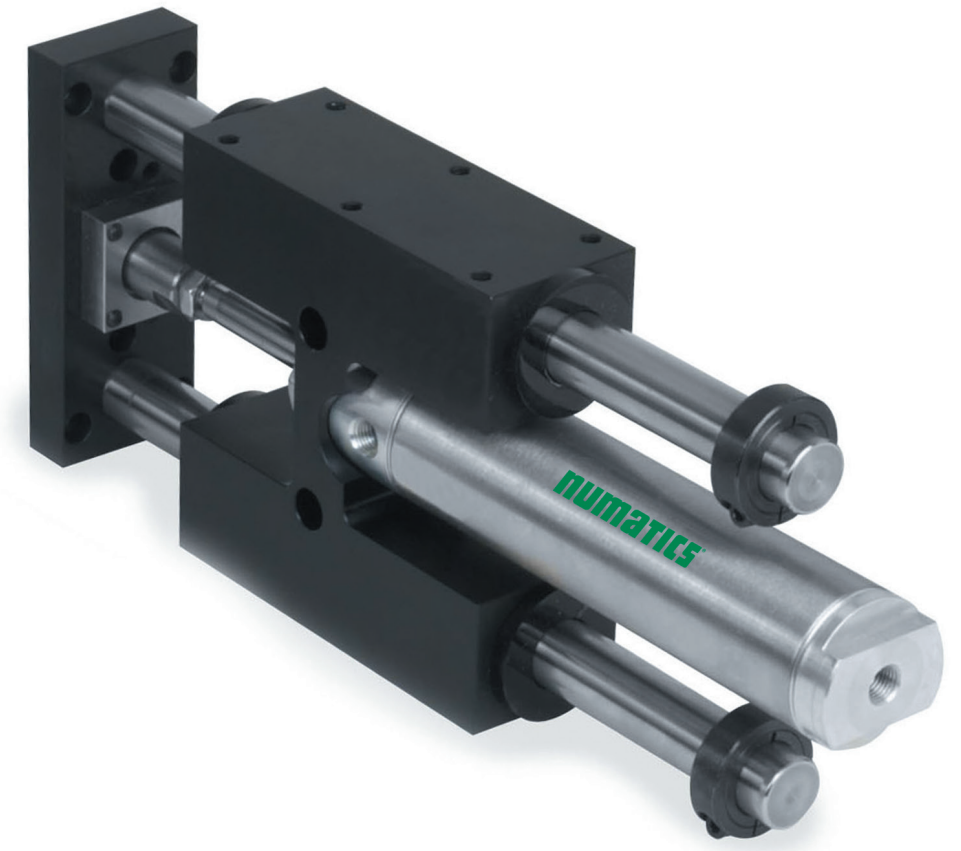
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numatics®

SH Series

Linear Slides



www.numatics.com

EMERSON™
Industrial Automation

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SH Series Linear Slides

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Our SH-Series Linear Slides are available with a wide range of options...

A. Body:

Hardcoat Anodized Aluminum(6061-T6511).....lightweight, durable, high strength to weight ratio.
Standard Dowel Location Holes.....allows precision mounting.
Multi-Surface Mounting Holes ..... flexible, easy access for mounting.

B. Air Cylinder:

Standard 440 C Stainless Steel Body and Rod..... corrosion resistant.
Standard w/ Magnetic Piston ..... sensing applications (Hall, Reed or Prox) added as required.

C. Alignment Coupler:

Isolates Piston Rod from side loading .....maximize life of cylinder, 360 degrees of float.

D. Tooling Plate:

NuMate™ Universal Mounting Pattern ..... standardized mounting system, eliminates custom transition plates.
Holes Drilled/Tapped and C'bored from the opposite side..... easy mounting.
Standard Dowel Locating Holes..... precision mounting.

E. Guide Shafts:

Hardened Steel to Rc 60 - 65 ..... long life.
Hardened Stainless Steel to Rc 50 - 55 ..... long life.
Precision Ground & Polished to 15*u*RMS ..... smooth cycling/ low breakaway.
Pilot Mounted to Tooling Plate.....maximum rigidity.
Large Diameters.....increased load capacity.

F. Bearings: (Three Choices)

Four Precision Linear Ball Bearings
Sealed with Rod Wipers..... safe guarding against dirt & contamination.
Self-Aligning .....reducing wear, maximizing both. load capacity and long life.

Four Sintered Bronze Sleeve Bearings
Oil Impregnated.....self lubricating.
High Pv Rating ..... long service life.

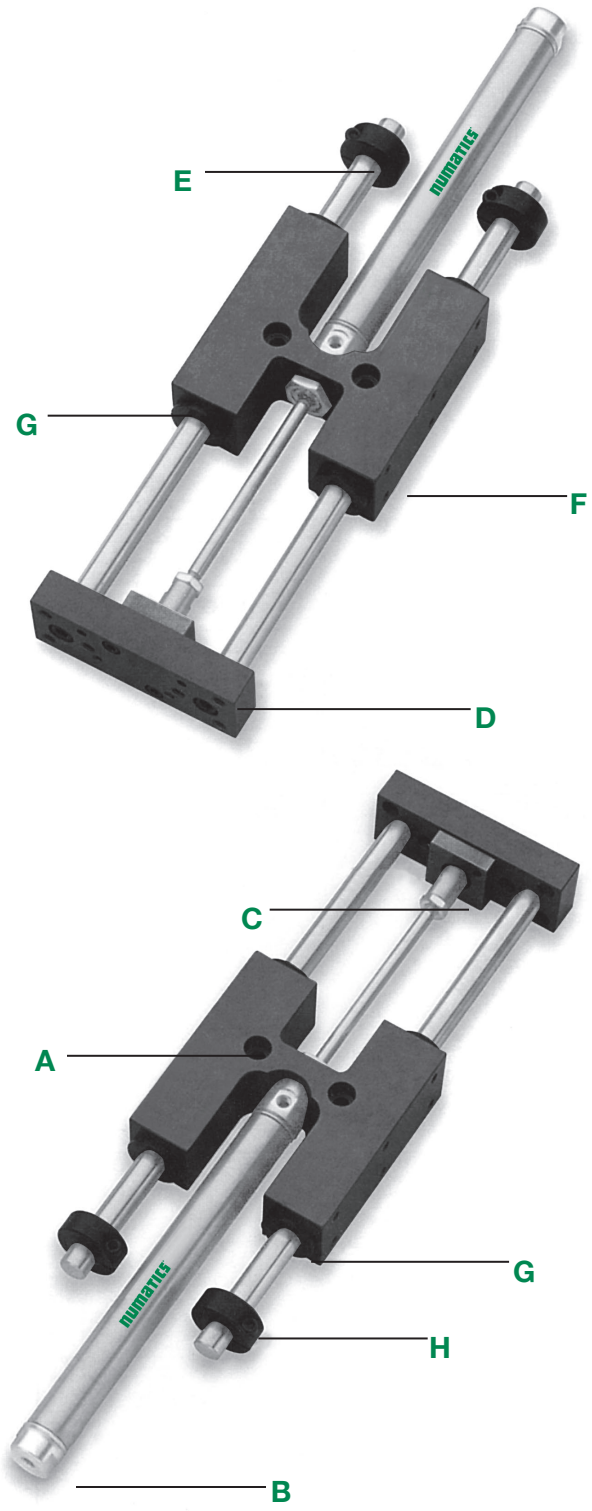
Four Frelon® Compounded PTFE
Low Friction .....longest wear life.
Maintenance Free.....self lubricating.

G. Bumpers: (Standard)

Polyurethane Material .....durable and long lasting.
Integrated into body Design .....reduces shock loading on extend & retract.
Preliminary Rod Wiper.....removes larger contamination from Guide Shafts.

H. Adjustable Shaft Collars: (Standard)

Extend Stroke Adjustment.....flexibility.



Information subject to change without notice. For ordering information or regarding your local sales office visit www.numatics.com.

How to Order

SH 075 03 LB 1 3 C S 3

Bore Size
031 = 5/16"
056 = 9/16"
075 = 3/4"
106 = 1-1/16"
150 = 1-1/2"
200 = 2"
250 = 2-1/2"
300 = 3"

Standard Stroke (inches)

X5	= 1/2"	09	= 9"
01	= 1"	10	= 10"
X9	= 1-1/2"	11	= 11"
02	= 2"	12	= 12"
03	= 3"	13	= 13"
04	= 4"	14	= 14"
05	= 5"	15	= 15"
06	= 6"	16	= 16"
07	= 7"	17	= 17"
08	= 8"	18	= 18"

Bearing Option
LB = Linear Ball
TB* = PTFE
BB = Sintered Bronze
* Supplied Standard with 440 C Stainless Steel Guide Rods, Stop Collars and Hardware.

Cylinder Type
1 = Buna-N Seals***
2 = FKM Seals (no magnet)
4 = FKM Seals with magnet***
*** Magnet not available on SH031

Shock Option
Shock Hardware Only
1 = Extend
2 = Retract
3 = Extend/Retract
4 = No Shock Hardware
Hardware & Shocks
A = Extend
B = Retract
C = Extend/Retract

Mounting Option
S = Std. Mount
B = Base Mount
A = Angle Mount

Sensing Position
A = Single Pos. Extend
B = Single Pos. Retract
C = Two position
D = No Sensing

Sensing Type
Standard Cord Set
1 = Hall Effect PNP (Sourcing)
2 = Hall Effect NPN (Sinking)
3 = Reed Switch
6 = No Sensing
7 = 8mm Threaded Barrel Prox Bracket*
Quick Disconnect Cord Set
Z = Hall Effect PNP (Sourcing)
Y = Hall Effect NPN (Sinking)
X = Reed Switch
* Bracket only - does not include switch

Ordering Example

Part Number: SH07503LB13CS3*

Part Description: 3/4 inch Bore by 3 inch stroke with Linear Ball Bearing, Standard Seals, Two Position Reed Switches, Standard Mount, Shock Hardware on Extend and Retract, Shocks not included.

*When entering an order, DO NOT use spaces or dashes. Follow example above.

Additional Sensors and Shocks

Switch Description	Standard Part No.	Quick Disconnect Part Number
Hall Effect - PNP (Sourcing)	PNP-FL2-00-U	PNP-QDS-M8-U
Hall Effect - NPN (Sinking)	NPN-FL2-00-U	NPN-QDS-M8-U
Reed Switch	REED-FL2-00	REED-QDS-M8U
90° 5 meter cable	-	PXC 90
Straight 5 meter cable	-	PXC ST

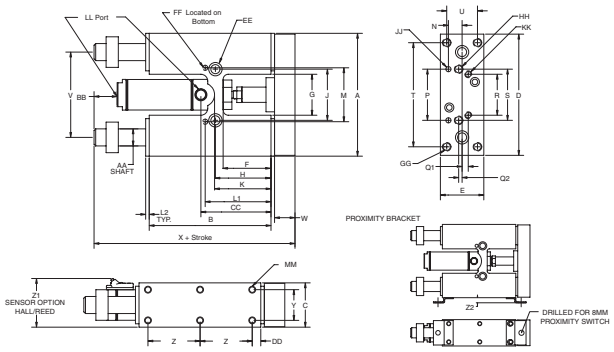
*Bands and tracks required for mounting.

Mounting Kits and Shocks

Series Slide	Base Mount	Angle Mount	Shock Absorber
SH031	MB031	AB031	-
SH056	MB056	AB056	
SH075	MB075	AB075	SK075
SH106	MB106	AB106	SK106
SH150	MB150	AB150	SK150
SH200	MB200	AB200	SK200
SH250	-	AB250	SK250
SH300	-	-	SK300

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SH031, SH056, SH075, SH106 Slides

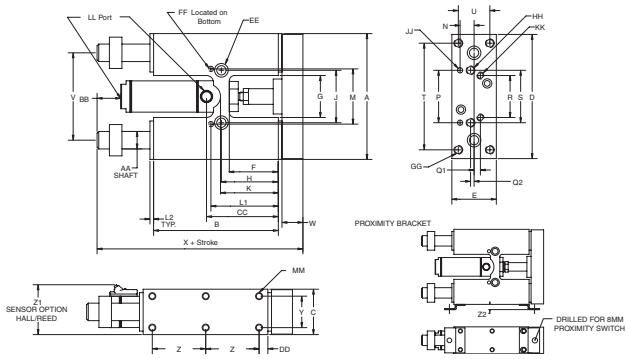


	SH031	SH056	SH075	SH106
A	2.00	2.87	4.12	4.50
B	2.00	3.00	3.97	4.45
C	0.62	1.00	1.25	1.62
D	1.95	2.81	4.06	4.44
E	0.58	0.95	1.19	1.58
F	0.75	1.00	1.31	1.75
G	0.75	1.00	1.25	1.50
H	0.90	1.25	1.59	2.03
J	1.00	1.25	1.50	1.87
K	1.06	1.50	1.66	2.31
L1	1.12	1.56	1.96	2.40
L2	0.06	0.12	0.12	0.12
M	0.999/1.001	1.373/1.375	1.881/1.813	1.873/1.875
N	0.21	0.31	0.37	0.50
P	0.999/1.001	1.373/1.375	1.881/1.813	1.873/1.875
Q1	-	0.18	0.31	0.22
Q2	Center Line	Center Line	Center Line	0.12
R	-	1.00	1.25	1.50
S	1.00	1.25	1.50	1.87
T	-	2.37	3.37	3.81
U	-	0.62	0.81	1.12
V	1.56	2.00	2.75	3.12
W	0.31	0.50	0.62	0.75
X	3.06	4.44	5.68	6.31
Y	0.43	0.62	0.81	1.12
Z	0.50	1.18	1.68	1.90
Z1	N/A	1.32	1.53	1.88
Z2	N/A	.312	.312	.312

	SH031	SH056	SH075	SH106
AA	0.250 Nom.	0.375 Nom.	0.500 Nom.	0.625 Nom.
BB	0.31	0.50	0.62	0.81
CC	1.06	1.68	2.03	2.50
DD	0.50	0.31	0.31	0.31
EE	C'Bored for #6 SHCS, Tapped # 10-32 x .28 DP From Opposite side	C'Bored for #10 SHCS, Tapped 1/4-28 x .50 DP From Opposite side	C'Bored for 1/4 SHCS, Tapped 5/16-24 x .62 DP From Opposite side	C'Bored for 5/16 SHCS, Tapped 3/8-24 x .75 DP From Opposite side
FF	0.0937/0.0947 x 0.18DP	0.125/0.126 x 0.25DP	0.1875/0.1885 x .37DP	0.1875/0.1885 x .37DP
GG	N/A	#10-32 thru, C'Bored for #6 SHCS From Opposite Side	1/4-20 thru, C'Bored for #10 SHCS From Opposite Side	5/16-18 thru, C'Bored for 1/4 SHCS From Opposite Side
HH	#6-32 thru	#10-32 thru, C'Bored For #6 SHCS From Opposite Side	1/4-20 thru, C'Bored For #10 SHCS From Opposite Side	5/16-18 thru, C'Bored For 1/4 SHCS From Opposite Side
JJ	0.0937/0.0947 x 0.18DP	0.125/0.126 x 0.25DP	0.1875/0.1885 x .37DP	0.1875/0.1885 x .37DP
KK	-	#6-32 x .25DP	#10-32 x .37DP	1/4-20 x .50DP
LL	#10-32	#10-32	1/8 NPTF	1/8 NPTF
MM	#5-40 x .18 DP*	#6-32 x .20 DP	#10-32 x .28 DP	1/4-20 x .37 DP

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SH150, SH200, SH250 Slides

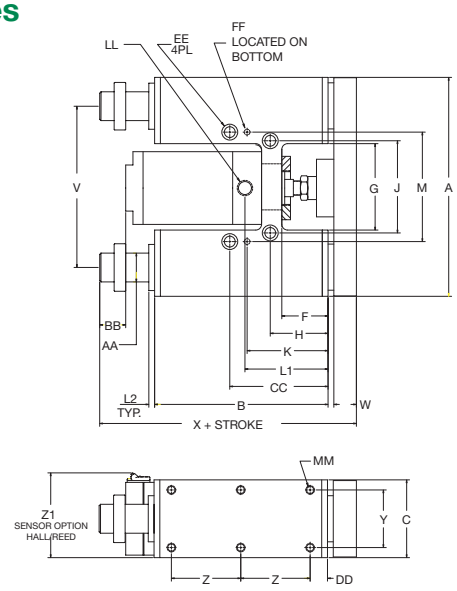


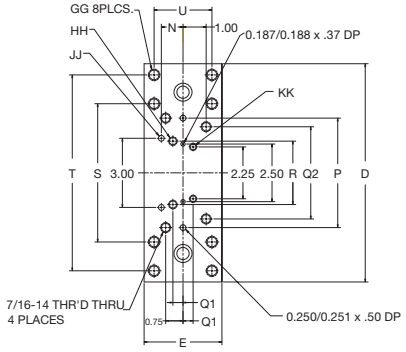
	SH150	SH200	SH250
A	5.25	6.50	6.50
B	4.95	6.50	6.50
C	2.00	2.50	2.87
D	5.18	6.44	6.44
E	1.93	2.44	2.44
F	1.93	2.50	2.50
G	2.00	2.50	2.50
H	2.25	2.87	2.81
J	2.25	2.75	2.75
K	2.68	3.37	3.37
L1	2.68	3.37	3.31
L2	0.18	0.25	0.25
M	2.499/2.501	2.99/3.001	2.999/3.001
N	0.56	0.62	0.62
P	2.499/2.501	2.999/3.001	2.999/3.001
Q1	0.31	0.37	0.37
Q2	0.12	0.12	0.12
R	1.87	2.25	2.25
S	2.25	2.75	2.75
T	4.25	5.25	5.25
U	1.43	1.87	1.87
V	3.75	4.56	4.56
W	0.81	0.87	0.87
X	7.16	8.75	8.75
Y	1.43	1.87	1.87
Z	2.12	2.62	2.62
Z1	2.25	2.75	3.21
Z2	0.312	.312	.312

	SH150	SH200	SH250
AA	0.750 Nom.	1.000 Nom.	1.000 Nom.
BB	0.87	1.00	1.00
CC	3.00	3.71	3.71
DD	0.37	0.62	0.62
EE	C'Bored for 5/16 SHCS, Tapped 3/8-24 x 0.75 DP From Opposite side	C'Bored for 3/8 SHCS, Tapped 7/16-20 x 0.875 DP From Opposite side	C'Bored for 3/8 SHCS, Tapped 7/16-20 x 0.875 DP From Opposite side
FF	0.1875/0.1885 x 0.37DP	0.250/0.251 x 0.50DP	0.250/0.251 x 0.50DP
GG	5/16-18 thru, C'Bored for 1/4 SHCS From Opposite Side	3/8-24 thru, C'Bored for 5/16 SHCS From Opposite Side	3/8-24 thru, C'Bored for 5/16 SHCS From Opposite Side
HH	5/16-18 thru, C'Bored For 1/4 SHCS From Opposite Side	3/8-24 thru, C'Bored For 5/16 SHCS From Opposite Side	3/8-24 thru, C'Bored For 5/16 SHCS From Opposite Side
JJ	0.1875/0.1885 x 0.37DP	0.250/0.251 x 0.50DP	0.250/0.251 x 0.50DP
KK	5/16-18 x 062DP	5/16-18 x 0.62DP	5/16-18 x 0.62DP
LL	1/8 NPTF	1/4 NPTF	1/4 NPTF
MM	1/4-20 x 0.37 DP	5/16-18 x 0.50 DP	5/16-18 x 0.50 DP

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SH300 Slides





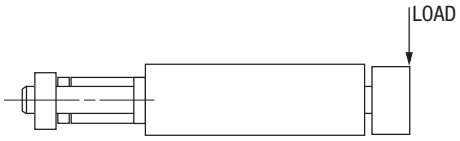
	SH300
A	9.50
B	7.50
C	3.37
D	9.44
E	3.31
F	2.00
G	3.75
H	2.50
J	4.00
K	3.50
L1	3.59
L2	0.25
M	4.749 / 4.751
N	0.94
P	4.749 / 4.751
Q1	0.43
Q2	4.00
R	2.75
S	6.00
T	8.50
U	2.50
V	7.00
W	0.97
X	10.10
Y	2.50
Z	3.00
Z1	3.73
Z2	0.312

	SH300
AA	1.250 Nom.
BB	1.12
CC	4.25
DD	0.75
EE	C'Bored for 7/16 SHCS, Tapped 1/2-20 x 0.75 DP From opposite side
FF	0.250 / 0.251 x 0.50DP
GG	1/2-13 thru, C'Bored for 3/8-16 SHCS From opposite side.
HH	1/2-13 thru, C'Bored for 3/8-16 SHCS From opposite side.
JJ	0.250 / 0.251 x 0.50DP
KK	5/16-18 x 0.50DP
LL	3/8 NPTF
MM	3/8-16 x 0.57 DP

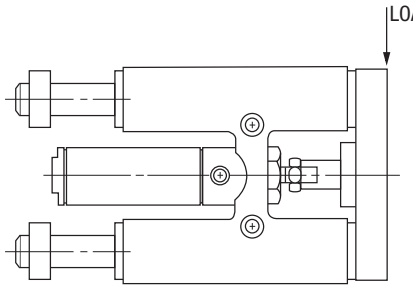
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Maximum Dynamic Load and Deflection Ratings

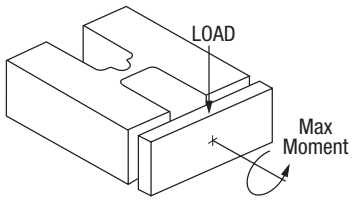
Positions A, B & C Linear Bearing Option



Position "A"



Position "B"



Position "C"

SH056					SH075				SH106			
Stroke Inches	Max. Load A&B (lbs.)	Deflection A (Inches)	Deflection B (Inches)	Max. Load C (lnlb.)	Max. Load A&B (lbs.)	Deflection A (Inches)	Deflection B (Inches)	Max. Load C (lnlb.)	Max. Load A&B (lbs.)	Deflection A (Inches)	Deflection B (Inches)	Max. Load C (lnlb.)
1	30.9	0.001	0.001	30.9	55.0	0.001	0.001	55.0	97.0	0.001	0.001	97.0
2	24.8	0.002	0.001	24.8	45.8	0.001	0.001	45.8	82.0	0.002	0.002	82.0
3	20.1	0.004	0.003	20.1	39.2	0.003	0.002	39.2	71.1	0.004	0.003	71.1
4	15.4	0.007	0.005	15.4	34.3	0.005	0.004	34.3	62.7	0.006	0.005	62.7
5	9.4	0.008	0.006	9.4	30.5	0.008	0.006	30.5	54.1	0.009	0.007	54.1
6	8.2	0.011	0.009	8.2	27.5	0.012	0.010	27.5	48.8	0.013	0.010	48.8
7	7.2	0.016	0.012	7.2	24.3	0.017	0.013	24.3	41.3	0.019	0.015	41.3
8	6.5	0.021	0.016	6.5	21.2	0.021	0.017	21.2	36.8	0.022	0.018	36.8
9	5.7	0.026	0.021	5.7	19.8	0.028	0.022	19.8	30.6	0.023	0.019	30.6
10	5.0	0.031	0.024	5.0	18.2	0.035	0.028	18.2	25.9	0.026	0.020	25.9
11	4.1	0.032	0.026	4.1	16.8	0.043	0.034	16.8	22.1	0.029	0.023	22.1
12	3.1	0.032	0.025	3.1	14.1	0.046	0.037	14.1	20.0	0.033	0.026	20.0

SH150					SH200/SH250				SH300			
Stroke Inches	Max. Load A&B (lbs.)	Deflection A (Inches)	Deflection B (Inches)	Max. Load C (lnlb.)	Max. Load A&B (lbs.)	Deflection A (Inches)	Deflection B (Inches)	Max. Load C (lnlb.)	Max. Load A&B (lbs.)	Deflection A (Inches)	Deflection B (Inches)	Max. Load C (lnlb.)
1	136.4	0.001	0.001	136.4	232.7	0.001	0.001	232.7	339.0	0.001	0.001	339.0
2	116.7	0.001	0.001	116.7	200.0	0.001	0.001	200.0	297.6	0.001	0.001	297.6
3	95.8	0.003	0.002	95.8	176.2	0.002	0.002	176.2	265.7	0.002	0.001	265.7
4	86.2	0.004	0.003	86.2	153.6	0.003	0.003	153.6	235.6	0.003	0.002	235.6
5	75.4	0.007	0.005	75.4	136.6	0.004	0.004	136.6	210.8	0.004	0.003	210.8
6	65.0	0.009	0.007	65.0	110.3	0.005	0.004	110.3	190.0	0.005	0.003	190.0
7	59.3	0.012	0.010	59.3	97.3	0.006	0.005	97.3	170.0	0.006	0.004	170.0
8	53.3	0.015	0.012	53.3	86.0	0.008	0.007	86.0	154.0	0.008	0.005	154.0
9	47.3	0.018	0.015	47.3	76.1	0.010	0.008	76.1	137.8	0.009	0.006	137.8
10	40.1	0.021	0.017	40.1	68.2	0.011	0.009	68.2	123.7	0.010	0.007	123.7
11	35.7	0.023	0.019	35.7	57.5	0.012	0.010	57.5	109.9	0.012	0.008	109.9
12	29.1	0.024	0.020	29.1	48.7	0.013	0.011	48.7	96.9	0.012	0.009	96.9
13	25.0	0.026	0.021	25.0	40.7	0.014	0.012	40.7	82.8	0.013	0.010	82.8
14	22.1	0.028	0.022	22.1	30.8	0.013	0.011	30.8	72.4	0.014	0.011	72.4
15	19.5	0.030	0.024	19.5	22.1	0.011	0.009	22.1	62.9	0.015	0.013	62.9
16	16.6	0.030	0.024	16.6	17.6	0.011	0.009	17.6	54.2	0.015	0.013	54.2
17	14.0	0.030	0.024	14.0	15.0	0.009	0.007	15.0	46.3	0.015	0.013	46.3
18	10.1	0.026	0.021	10.1	12.0	0.007	0.006	12.0	39.1	0.015	0.013	39.1

* SH031 Series not offered in Linear Ball Bearing Option.
Maximum load and deflection ratings, 100% at tool plate mounting face

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Maximum Dynamic Load and Deflection Ratings

Positions A, B & C Bronze Bearing and PTFE Bearing Options

SH031*					SH056				SH075			
Stroke Inches	Max. Load A&B (lbs.)	Deflection A (Inches)	Deflection B (Inches)	Max. Load C (lnlb.)	Max. Load A&B (lbs.)	Deflection A (Inches)	Deflection B (Inches)	Max. Load C (lnlb.)	Max. Load A&B (lbs.)	Deflection A (Inches)	Deflection B (Inches)	Max. Load C (lnlb.)
0.5	5.0	0.001	0.001	5.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1	4.5	0.001	0.001	4.5	20.1	0.001	0.001	20.1	35.7	0.001	0.001	35.7
1.5	4.0	0.001	0.001	4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2	3.5	0.001	0.001	3.5	16.1	0.001	0.001	16.1	29.8	0.001	0.001	29.8
3	2.7	0.002	0.002	2.7	13.0	0.003	0.002	13.0	25.4	0.002	0.001	25.4
4	1.9	0.004	0.003	1.9	10.1	0.004	0.003	10.1	22.3	0.003	0.003	22.3
5	1.1	0.004	0.003	1.1	6.2	0.005	0.004	6.2	19.8	0.005	0.004	19.8
6	0.5	0.004	0.003	0.5	5.3	0.007	0.006	5.3	17.8	0.008	0.006	17.8
7	N/A	N/A	N/A	N/A	4.6	0.010	0.008	4.6	15.7	0.011	0.009	15.7
8	N/A	N/A	N/A	N/A	4.2	0.013	0.011	4.2	13.7	0.014	0.011	13.7
9	N/A	N/A	N/A	N/A	3.7	0.017	0.013	3.7	12.8	0.018	0.014	12.8
10	N/A	N/A	N/A	N/A	3.2	0.020	0.016	3.2	11.8	0.023	0.018	11.8
11	N/A	N/A	N/A	N/A	2.6	0.021	0.017	2.6	10.9	0.028	0.022	10.9
12	N/A	N/A	N/A	N/A	1.9	0.020	0.016	1.9	9.1	0.030	0.024	9.1

SH106					SH150				SH200/SH250			
Stroke Inches	Max. Load A&B (lbs.)	Deflection A (Inches)	Deflection B (Inches)	Max. Load C (lnlb.)	Max. Load A&B (lbs.)	Deflection A (Inches)	Deflection B (Inches)	Max. Load C (lnlb.)	Max. Load A&B (lbs.)	Deflection A (Inches)	Deflection B (Inches)	Max. Load C (lnlb.)
1	48.5	0.001	0.001	48.5	68.2	0.001	0.001	68.2	116.3	0.001	0.001	116.3
2	41.1	0.001	0.001	41.0	58.3	0.001	0.001	58.3	100.0	0.001	0.001	100.0
3	35.5	0.002	0.002	35.5	51.0	0.001	0.001	51.0	88.1	0.001	0.001	88.1
4	31.3	0.003	0.002	31.3	43.1	0.002	0.002	43.1	76.8	0.001	0.001	76.8
5	27.0	0.005	0.003	27.0	37.7	0.003	0.003	37.7	68.3	0.002	0.002	68.3
6	24.4	0.006	0.005	24.4	32.5	0.004	0.004	32.5	55.1	0.003	0.003	55.1
7	20.6	0.008	0.006	20.6	29.6	0.006	0.005	29.6	48.6	0.003	0.003	48.6
8	18.4	0.010	0.008	18.4	26.6	0.008	0.006	26.6	43.0	0.004	0.003	43.0
9	15.3	0.012	0.009	15.3	23.6	0.009	0.007	23.6	38.0	0.005	0.004	38.0
10	12.9	0.013	0.010	12.9	20.0	0.010	0.008	20.0	34.1	0.006	0.005	34.1
11	11.0	0.014	0.011	11.0	17.8	0.012	0.009	17.8	28.7	0.006	0.005	28.7
12	10.1	0.016	0.013	10.1	14.5	0.012	0.010	14.5	24.3	0.007	0.006	24.3
13	N/A	N/A	N/A	N/A	12.5	0.013	0.010	12.5	20.3	0.007	0.006	20.3
14	N/A	N/A	N/A	N/A	11.0	0.014	0.011	11.0	15.4	0.007	0.006	15.4
15	N/A	N/A	N/A	N/A	9.7	0.015	0.012	9.7	11.0	0.006	0.005	11.0
16	N/A	N/A	N/A	N/A	8.3	0.015	0.012	8.3	8.8	0.005	0.004	8.8
17	N/A	N/A	N/A	N/A	7.0	0.015	0.012	7.0	7.5	0.004	0.003	7.5
18	N/A	N/A	N/A	N/A	5.0	0.013	0.011	5.0	6.0	0.004	0.003	6.0

SH300				
Stroke Inches	Max. Load A&B (lbs.)	Deflection A (Inches)	Deflection B (Inches)	Max. Load C (lnlb.)
1	170.5	0.001	0.001	170.5
2	149.8	0.001	0.001	149.8
3	132.5	0.001	0.001	132.5
4	117.5	0.001	0.001	117.5
5	105.0	0.002	0.001	105.0
6	95.4	0.002	0.002	95.4
7	85.2	0.003	0.002	85.2
8	77.7	0.004	0.003	77.7
9	69.0	0.005	0.004	69.0
10	62.3	0.005	0.004	62.3
11	55.1	0.006	0.005	55.1
12	48.0	0.006	0.005	48.0
13	41.7	0.007	0.006	41.7
14	36.0	0.007	0.006	36.0
15	31.5	0.008	0.007	31.5
16	27.9	0.008	0.007	27.9
17	23.0	0.009	0.008	23.0
18	19.5	0.009	0.008	19.5

* SH031 Series not offered in Linear Ball Bearing Option.
Maximum load and deflection ratings, 100% at tool plate mounting face

Information subject to change without notice. For ordering information or regarding your local sales office visit www.numatics.com.

Unit Weight Table

	SH031	SH056	SH075	SH106	SH150	SH200	SH250	SH300
Base Unit Weight (lbs.)	0.35	1.07	2.46	4.04	6.36	12.94	13.84	30.12
Adder/Inch of stroke (lbs.)	0.03	0.08	0.15	0.22	0.34	0.60	0.90	1.75

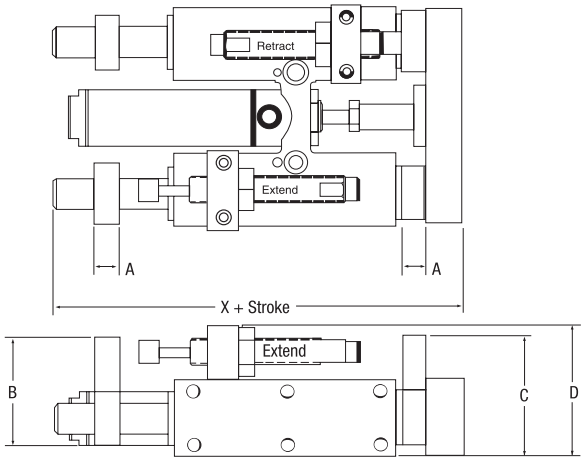
Add base weight to inch adder X stroke. Sample weight calculation: Model SH075 W/6" stroke, 2.46 + (0.15 x 6) = 3.360 lbs.

Unit Output Force Table

	SH031	SH056	SH075	SH106	SH150	SH200	SH250	SH300
Extend Force (lbs.)	0.07	0.24	0.44	0.88	1.76	3.14	4.90	7.00
Retract Force (lbs.)	0.06	0.22	0.39	0.81	1.61	2.83	4.60	6.62

Multiply force factor X input pressure in PSI. Sample output force calculation: Model SH150 extend force@ 70PSI, 1.76 x 70 = 123.2 lbs.

Shock Option



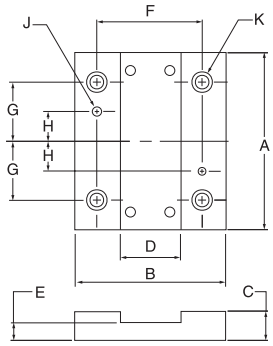
Dimensions

Dimension	SH075	SH106	SH150	SH200	SH250	SH300
A	0.44	0.50	0.50	0.50	0.50	0.50
B	2.00	2.25	2.75	3.25	3.52	5.50
C	2.13	2.50	3.13	3.75	3.93	5.75
D	2.38	2.75	3.25	3.88	4.25	5.87
X	6.68	7.31	8.13	9.75	9.75	10.10

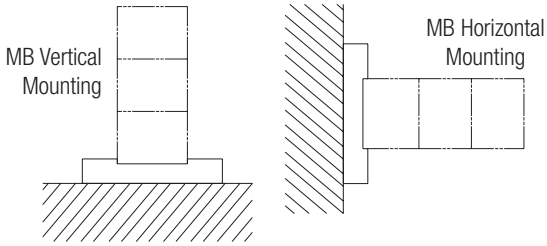
* Shock Option available on SH075 series and larger.

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MB Series Base Mounting

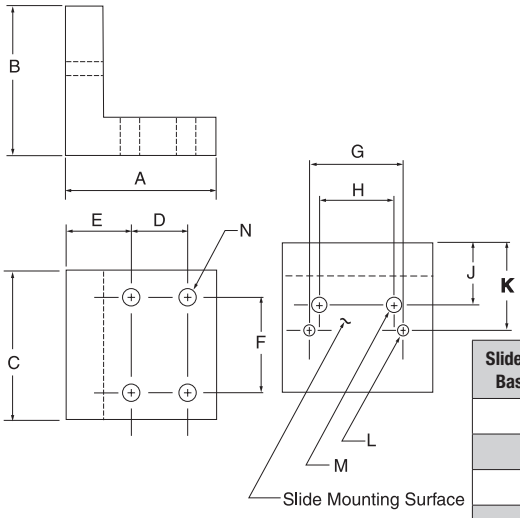


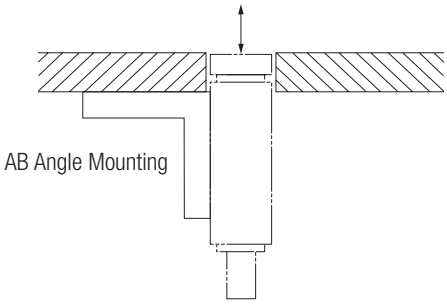
Base Mount Not Available for SH250 & SH300



Slide Series Base P/N	SH031 MB031	SH056 MB056	SH075 MB075	SH106 MB106	SH150 MB150	SH200 MB200
A	2.00	3.00	4.00	4.50	5.00	6.50
B	1.62	2.50	3.0	3.50	4.00	5.00
C	0.34	0.47	0.59	0.070	0.70	0.99
D	0.626/0.628	1.001/1.003	1.251/1.253	1.626/1.628	2.001/2.003	2.501/2.503
E	0.26	0.34	0.50	0.56	0.56	0.68
F	1.12	1.75	2.00	2.50	3.00	3.75
G	0.75	1.00	1.50	1.75	2.00	2.50
H	0.37	0.50	0.75	1.12	1.25	1.50
J	0.125/0.126	0.156/0.0157	0.156/0.157	0.188/0.189	0.188/0.189	0.250/0.251
K	Clearance for #8 SHCS	Clearance for #10 SHCS	Clearance for 1/4 SHCS	Clearance for 5/16 SHCS	Clearance for 5/16 SHCS	Clearance for 3/8 SHCS

AB Series Angle Mounting – Not Available on SH300



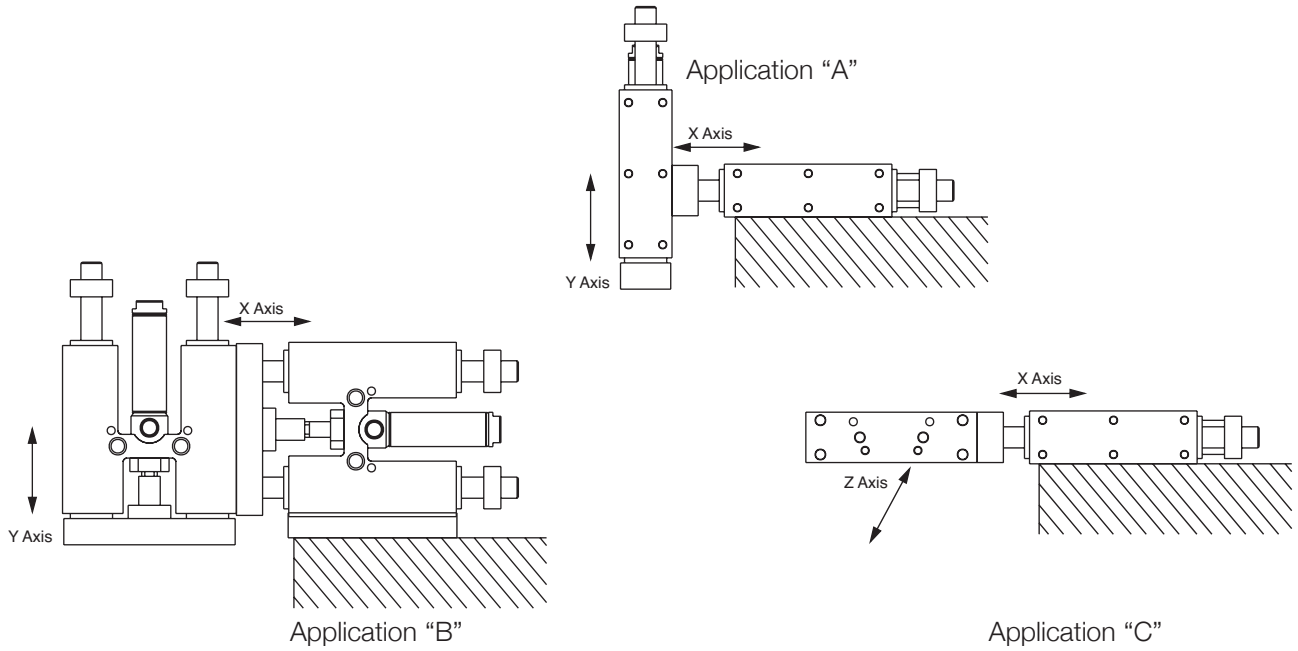


Slide Series Base P/N	SH031 AB031	SH056 AB056	SH075 AB075	SH106 AB106	SH150 AB150	SH200/SH250 AB200
A	1.25	2.00	2.50	3.00	3.50	4.00
B	1.25	2.00	2.50	3.00	3.50	4.00
C	1.75	2.25	2.75	3.25	4.00	5.00
D	0.50	0.87	1.00	1.25	1.50	2.00
E	0.50	0.62	0.75	1.12	1.25	1.37
F	1.25	1.25	1.75	2.25	3.00	4.00
G	1.00	1.37	1.81	1.87	2.50	3.00
H	1.00	1.25	1.50	1.87	2.25	2.75
J	0.75	1.00	1.31	1.78	2.00	2.37
K	0.97	1.31	1.68	2.15	2.43	2.87
L	0.94	0.125	0.187	0.187	0.187	0.250
M	For #10-32 SHCS	For 1/4-28 SHCS	For 5/16-24 SHCS	For 3/8-24 SHCS	For 3/8-24 SHCS	For 7/16-20 SHCS
N	For #10 SHCS	For 1/4 SHCS	For 5/16 SHCS	For 3/8 SHCS	For 3/8 SHCS	For 7/16 SHCS

Information subject to change without notice. For ordering information or regarding your local sales office visit www.numatics.com.

NuMate™ Direct Mount, Mounting System

The NuMate™ mounting system provides a standard series of drilled, tapped and counterbored holes allowing each slide series to mount with each other and other slide series in various combinations without the use of adapters, transition plates or other costly methods. The NuMate™ mounting system also utilizes dowel hole locations for precision mountings. The NuMate™ mounting system is the most versatile mounting method of its kind, providing customers with a cost effective method for building modular component automation. The NuMate™ mounting system is consistent across the ***Numatics*** spectrum of products for automation.



	Application A	Application B	Application C
X-Axis Slide	Mating Y Axis Slide	Mating Y Axis Slide	Mating Z Axis Slide
SH031	SH031	-	-
SH056	SH031 SH056	SH056	SH056
SH075	SH056 SH075	SH075	SH075
SH106	SH075 SH106	SH106	SH106
SH150	SH106 SH150	SH150	SH150
SH200	SH150 SH200	SH200	SH200
SH250	SH150 SH200 SH250	SH200 SH250	SH200 SH250
SH300	SH150 SH200 SH250 SH300	SH300	SH300

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How to Order

3 Position Linear Slide

MH C 02 01 A 1 1 6 D S 4

Bore Size
C = 3/4 Inch
F = 1-1/16 Inches
K = 1-1/2 Inches
L = 2 Inches

Front Cylinder (Total Stroke)
01 - 18 Inches
(Standard max stroke lengths vary by bore size, see SH Series load rating information.)

Fractional Stroke for Front Cylinder
* = 0 Inch
C = 1/4 Inch
E = 1/2 Inch
G = 3/4 Inch
*Leave blank if fractional stroke = 0.

Back Cylinder (First Stroke)
01 - 18 Inches

Fractional Stroke for Back Cylinder
A = 0 Inch
C = 1/4 Inch
E = 1/2 Inch
G = 3/4 Inch

Bearing and Guide Shaft Type

1	=	Linear Ball	Hardened Steel Shafts
2	=	Linear Ball	440 C Stainless Steel Shafts
3	=	PTFE	Hardened Steel Shafts
4	=	PTFE	440 C Stainless Steel Shafts
5	=	Sintered Bronze	Hardened Steel Shafts
6	=	Sintered Bronze	440 C Stainless Steel Shafts

Cylinder Type
1 = Buna-N Seals
2 = FKM Seals-No Magnet
3 = Buna w/Cushions Full Ext/Full Retract
4 = FKM with Magnet

Shock Absorber Option
1 = Extend
2 = Retract
3 = Extend/Retract
4 = No Shock Hardware

Hardware & Shocks
A = Extend
B = Retract
C = Extend/Retract

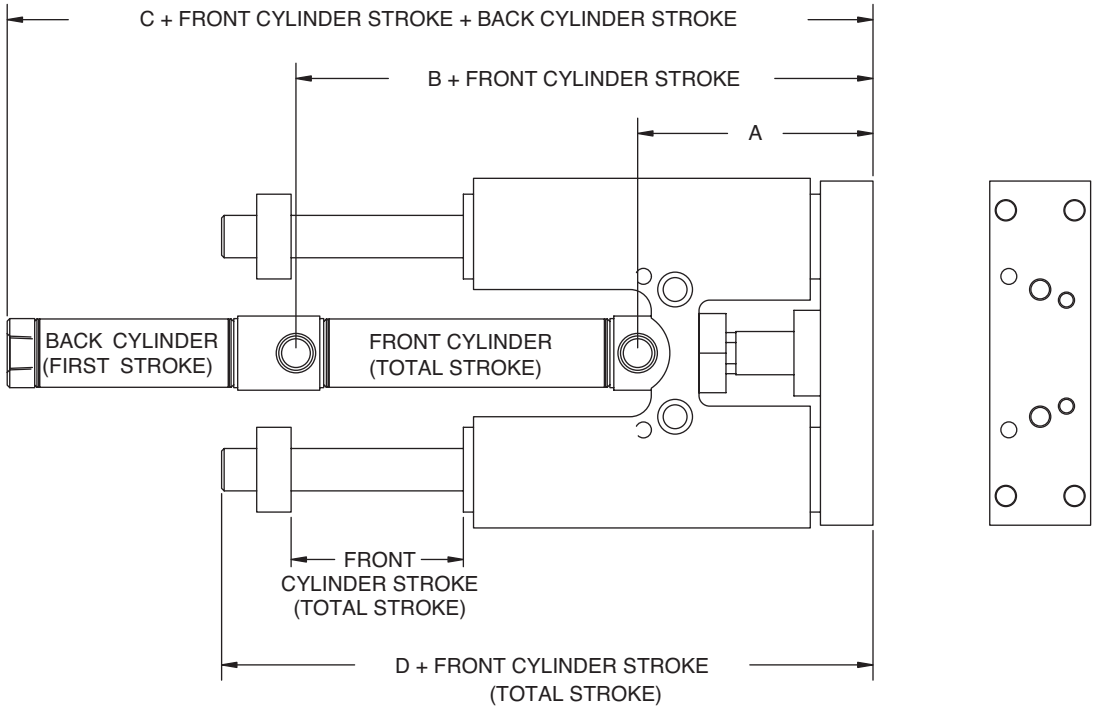
Mounting Option
S = Standard Mount
B = Base Mount
A = Angle Mount

Sensing Position
A = Single Extend
B = Single Retract
C = Two position
D = No Sensing
E = 3 Position
F = 4 Position
G = 5 Position

Sensing Type
Standard Cord Set
1 = Hall Effect PNP (Sourcing)
2 = Hall Effect NPN (Sinking)
3 = Reed Switch
4 = Prox Switch on Cylinder - PNP (Sourcing)
5 = Prox Switch on Cylinder - NPN (Sinking)
6 = No Sensing
7 = 8mm Threaded Barrel Prox Bracket (Prox Ready)*
Quick Disconnect Cord Set
Z = Hall Effect PNP (Sourcing)
Y = Hall Effect NPN (Sinking)
X = Reed Switch
W = Prox Switch - PNP (Sourcing) Straight
V = Prox Switch - NPN (Sinking) Straight
U = Prox Switch - PNP (Sourcing) 90°
T = Prox Switch - NPN (Sinking) 90°
* Bracket only - Bracket for full extend and full retract only, does not include switch See Sensor section.

Information subject to change without notice. For ordering information or regarding your local sales office visit www.numatics.com.

3 Position Linear Slide

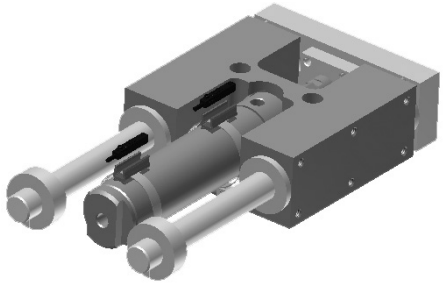


Dimensions: Inches

SH Series	A	B	C	D
SH075	2.78	4.81	7.21	5.68
SH106	3.44	5.47	8.04	6.35
SH150	3.86	5.99	8.80	7.16
SH200	4.85	7.57	11.05	8.75

SH Series Slide

Bore	Bracket P/N
SH056	N199-1054
SH075	N199-1055
SH106	N199-1056
SH150	N199-1057
SH200	N199-1058
SH250	N199-1059
SH300	N199-1060



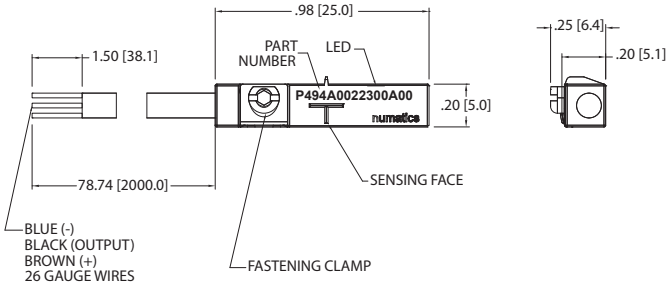
Sensor Description	Standard Cord Set	Quick Disconnect
Reed Switch	REED-FL2-00	REED-QDS-M8U
Hall PNP	PNP-FL2-00-U	PNP-QDS-M8-U
Hall NPN	NPN-FL2-00-U	NPN-QDS-M8-U

See page 15, 16, & 17 for sensor specifications

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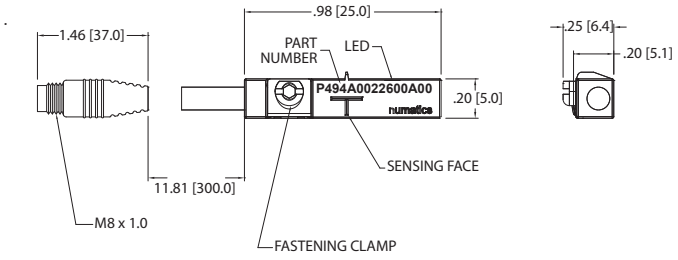
Sensing Part Numbers

PNP-FL2-00-U



ELECTRICAL DESIGN	DC PNP
OUTPUT	Normally Open
OPERATING VOLTAGE	10-30 VDC
CURRENT RATING	100 mA
SHORT-CIRCUIT PROTECTION	Yes
OVERLOAD PROTECTION	Yes
REVERSE POLARITY PROTECTION	Yes
VOLTAGE DROP	< 2.5 V
CURRENT CONSUMPTION	< 12 mA
REPEATABILITY	< .2mm
POWER-ON DELAY TIME	< 30 ms
SWITCH FREQUENCY	> 3000 Hz
AMBIENT TEMPERATURE	-25°C to 85°C
PROTECTION	IP 67, III
HYSTERESIS	1.0mm
MAGNETIC SENSITIVITY	2.0 mT
TRAVEL SPEED	> 10 m/s
HOUSING MATERIAL	PA (Polyamide) Black; Fastening Clamp: Stainless Steel
FUNCTION DISPLAY SWITCHING STATUS	Yellow LED
CONNECTION	Flying Leads, Pur Cable (2m Long, 3 x26 Gauge Wire)
REMARKS	Clamping Screw with Combined Slot/Hexagon Socket Head AF 1.5 cULus - Class 2 Source Required
ACCESSORIES	Rubber Placehold, Cable Clip, and Cut Sheet To Be Provided with Every Switch
AGENCY APPROVALS	CE c UL us RoHS

PNP-QDS-M8-U

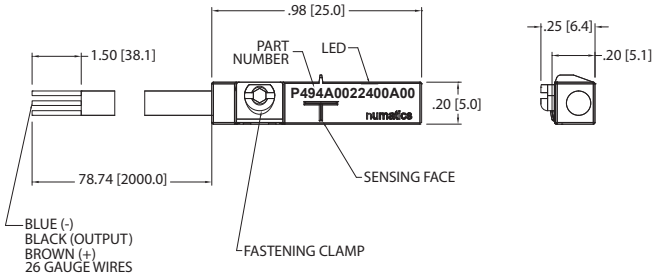


ELECTRICAL DESIGN	DC PNP
OUTPUT	Normally Open
OPERATING VOLTAGE	10-30 VDC
CURRENT RATING	100 mA
SHORT-CIRCUIT PROTECTION	Yes
OVERLOAD PROTECTION	Yes
REVERSE POLARITY PROTECTION	Yes
VOLTAGE DROP	< 2.5 V
CURRENT CONSUMPTION	< 12 mA
REPEATABILITY	< .2mm
POWER-ON DELAY TIME	< 30 ms
SWITCH FREQUENCY	> 3000 Hz
AMBIENT TEMPERATURE	-25°C to 85°C
PROTECTION	IP 67, III
HYSTERESIS	1.0mm
MAGNETIC SENSITIVITY	2.0 mT
TRAVEL SPEED	> 10 m/s
HOUSING MATERIAL	PA (Polyamide) Black; Fastening Clamp: Stainless Steel
FUNCTION DISPLAY SWITCHING STATUS	Yellow LED
CONNECTION	M8 Connector (Snap Fit) , Pur Cable (.3 m)
REMARKS	Clamping Screw with Combined Slot/Hexagon Socket Head AF 1.5 cULus - Class 2 Source Required
ACCESSORIES	Rubber Placehold, Cable Clip, and Cut Sheet To Be Provided with Every Switch
AGENCY APPROVALS	CE c UL us RoHS

*Switches are not designed for wet environments. Please see your distributor for additional information.

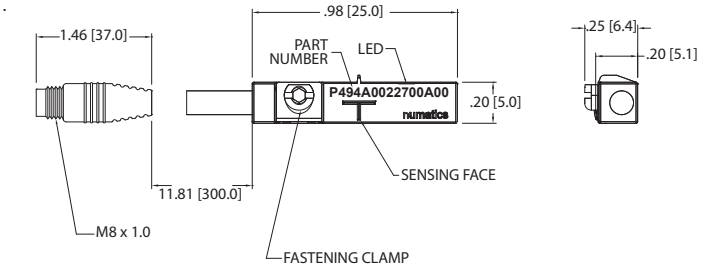
Sensing Part Numbers

NPN-FL2-00-U



ELECTRICAL DESIGN	DC NPN
OUTPUT	Normally Open
OPERATING VOLTAGE	10-30 VDC
CURRENT RATING	100 mA
SHORT-CIRCUIT PROTECTION	Yes
OVERLOAD PROTECTION	Yes
REVERSE POLARITY PROTECTION	Yes
VOLTAGE DROP	< 2.5 V
CURRENT CONSUMPTION	< 12 mA
REPEATABILITY	< .2mm
POWER-ON DELAY TIME	< 30 ms
SWITCH FREQUENCY	> 3000 Hz
AMBIENT TEMPERATURE	-25ºC to 85ºC
PROTECTION	IP 67, III
HYSTERESIS	1.0mm
MAGNETIC SENSITIVITY	2.0 mT
TRAVEL SPEED	> 10 m/s
HOUSING MATERIAL	PA (Polyamide) Black; Fastening Clamp: Stainless Steel
FUNCTION DISPLAY SWITCHING STATUS	Yellow LED
CONNECTION	Flying Leads, Pur Cable (2m Long, 3 x26 Gauge Wire)
REMARKS	Clamping Screw with Combined Slot/Hexagon Socket Head AF 1.5 cULus - Class 2 Source Required
ACCESSORIES	Rubber Placehold, Cable Clip, and Cut Sheet To Be Provided with Every Switch
AGENCY APPROVALS	CE c UL us RoHS

NPN-QDS-M8-U



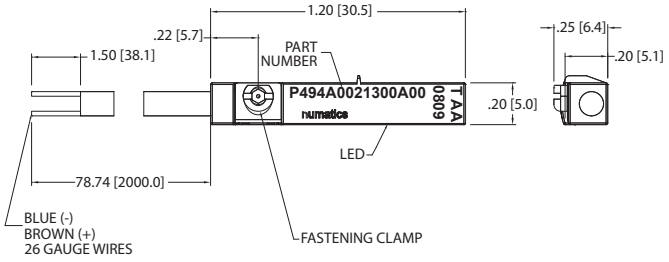
ELECTRICAL DESIGN	DC NPN
OUTPUT	Normally Open
OPERATING VOLTAGE	10-30 VDC
CURRENT RATING	100 mA
SHORT-CIRCUIT PROTECTION	Yes
OVERLOAD PROTECTION	Yes
REVERSE POLARITY PROTECTION	Yes
VOLTAGE DROP	< 2.5 V
CURRENT CONSUMPTION	< 12 mA
REPEATABILITY	< .2mm
POWER-ON DELAY TIME	< 30 ms
SWITCH FREQUENCY	> 3000 Hz
AMBIENT TEMPERATURE	-25ºC to 85ºC
PROTECTION	IP 67, III
HYSTERESIS	1.0mm
MAGNETIC SENSITIVITY	2.0 mT
TRAVEL SPEED	> 10 m/s
HOUSING MATERIAL	PA (Polyamide) Black; Fastening Clamp: Stainless Steel
FUNCTION DISPLAY SWITCHING STATUS	Yellow LED
CONNECTION	M8 Connector (Snap Fit) , Pur Cable (.3 m)
REMARKS	Clamping Screw with Combined Slot/Hexagon Socket Head AF 1.5 cULus - Class 2 Source Required
ACCESSORIES	Rubber Placehold, Cable Clip, and Cut Sheet To Be Provided with Every Switch
AGENCY APPROVALS	CE c UL us RoHS

*Switches are not designed for wet environments. Please see your distributor for additional information.

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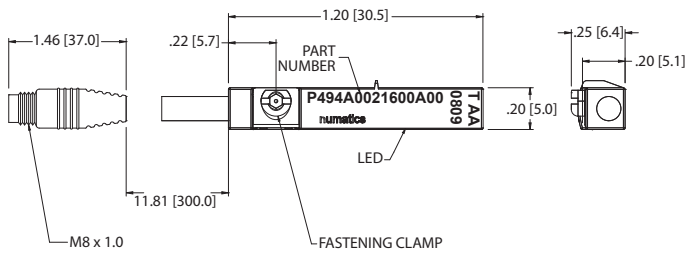
Sensing Part Numbers

REED-FL2-00



ELECTRICAL DESIGN	AC/DC REED
OUTPUT	Normally Open
OPERATING VOLTAGE	5-120 VAC/DC
CURRENT RATING	100 mA*
SHORT-CIRCUIT PROTECTION	No
OVERLOAD PROTECTION	No
REVERSE POLARITY PROTECTION	Yes
VOLTAGE DROP	< 5 V
REPEATABILITY	± .2mm
MAKETIME INCLUDING BOUNCE	< .6 ms
BREAKTIME	< .1 ms
SWITCHING POWER (MAX)	5 W
SWITCH FREQUENCY	1000 Hz
AMBIENT TEMPERATURE	-25ºC to 70ºC
PROTECTION	IP 67, II
HYSTERESIS	.9mm
HOUSING MATERIAL	PA (Polyamide) Black; Fastening Clamp: Stainless Steel
FUNCTION DISPLAY SWITCHING STATUS	Yellow LED
CONNECTION	Flying Leads, Pur Cable (2m Long, 2 x26 Gauge Wire)
REMARKS	*External Protective Circuit for Inductive Load (Valve, Contactor, Etc..) Necessary. Conforms to 2008 NEC Section 725 III, Class 2 Circuits Clamping Screw with Combined Slot/Hexagon Socket Head AF 1.5. No LED Function in case of Polarity in DC Operation
ACCESSORIES	Rubber Placehold, Cable Clip, and Cut Sheet To Be Provided with Every Switch
AGENCY APPROVALS	CE RoHS

REED-QDS-M8U

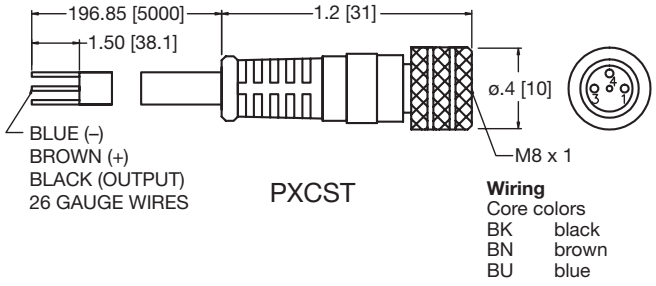


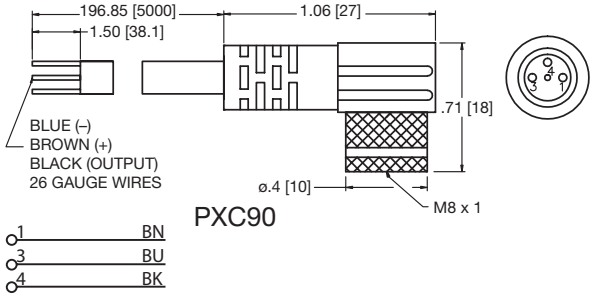
ELECTRICAL DESIGN	AC/DC REED
OUTPUT	Normally Open
OPERATING VOLTAGE	*5-60 VDC / 5-50 VAC
CURRENT RATING	100 mA
SHORT-CIRCUIT PROTECTION	No
OVERLOAD PROTECTION	No
REVERSE POLARITY PROTECTION	Yes
VOLTAGE DROP	< 5 V
REPEATABILITY	± .2mm
MAKETIME INCLUDING BOUNCE	< .6 ms
BREAKTIME	< .1 ms
SWITCHING POWER (MAX)	5 W
SWITCH FREQUENCY	1000 Hz
AMBIENT TEMPERATURE	-25ºC to 70ºC
PROTECTION	IP 67, II
HYSTERESIS	.9mm
HOUSING MATERIAL	PA (Polyamide) Black; Fastening Clamp: Stainless Steel
FUNCTION DISPLAY SWITCHING STATUS	Yellow LED
CONNECTION	M8 Connector (Snap Fit), Pur Cable (.3m)
REMARKS	*External Protective Circuit for Inductive Load (Valve, Contactor, Etc..) Necessary. Conforms to 2008 NEC Section 725 III, Class 2 Circuits M8 Connector voltage limited to 5-60 vdc / 5-50 vac to conform with 2008 IEC 61076-2-104 Clamping Screw with Combined Slot/Hexagon Socket Head AF 1.5. No LED Function in case of Polarity in DC Operation
ACCESSORIES	Rubber Placehold, Cable Clip, and Cut Sheet To Be Provided with Every Switch
AGENCY APPROVALS	CE RoHS

*Switches are not designed for wet environments. Please see your distributor for additional information.

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Quick Disconnect Cables

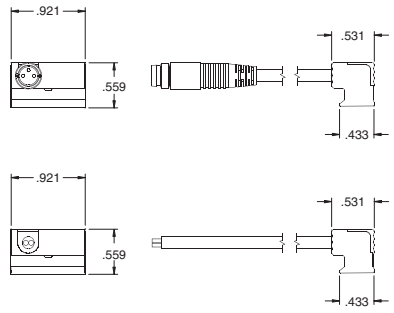


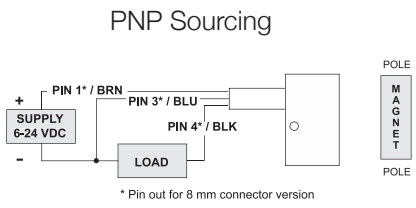


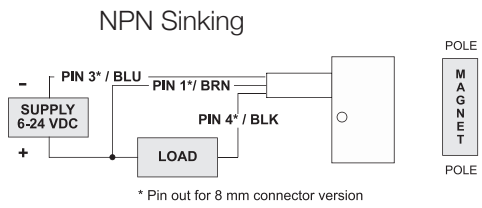
Order Code	Type	Operating Voltage	Current Rating	Cable Material	Protection	Connector
PXCST	Straight 5 m Cable (3 x 26 Gauge wire)	60 AC/75 DC	3 A	PUR	IP 68, III	M8
PXC90	90° 5 m Cable (3 x 26 Gauge wire)	60 AC/75 DC	3 A	PUR	IP 68, III	M8

World Switch Hall Effect Part Numbers

P/N	Switch Style	Electrical Design	Output	Operating Voltage	Current Rating	Switching Power	Voltage Drop	NEMA IP Rating	Temperature Rating
SH6-031	Flying Lead	DC PNP	Normally Open	6-24 VDC	0.3 Amps Max.	7.2 Watts Max.	.5 Volts	NEMA 6	-25º to +75º C
SH6-032	Flying Lead	DC PNP	Normally Open	6-24 VDC	0.3 Amps Max.	7.2 Watts Max.	.5 Volts	NEMA 6	-25º to +75º C
SH6-021	M8 Connector	DC NPN	Normally Open	6-24 VDC	0.3 Amps Max.	7.2 Watts Max.	.5 Volts	NEMA 6	-25º to +75º C
SH6-022	M8 Connector	DC NPN	Normally Open	6-24 VDC	0.3 Amps Max.	7.2 Watts Max.	.5 Volts	NEMA 6	-25º to +75º C







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