

slides

B Series
Compact Linear Slide



numatics

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NUMATICS®

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Air-Oil Systems, Inc. www.airoil.com



B Series

The “B” series design is compact and self-contained. Cylinder pistons are attached directly to each guide rod, conserving size without sacrificing output force. Guide rods are supported by specially designed guide bushings providing optimum support of dynamic loads. Guide bushings are manufactured from specially engineered materials designed to eliminate potential rod binding.



A. Body:

Hardcoat anodized aluminum lightweight, durable, high strength to weight ratio
 Teflon® coated inside and out, reduced friction, increased seal life
 Easy access mounting holes drilled from top and tapped from bottom,
 standard dowel locating holes for accurate mounting
 Integrated sensing mount..... dovetail rail both sides to accept Numatics World Switch

B. Tooling Plate:

Hardcoat anodized aluminum lightweight, durable
 Easy access mounting holes drilled and tapped, dowel locating holes standard
 NuMate™ mounting capability reduced cost, eliminates adapters and transition plates

C. Guide Shafts:

Hardened steel to Rc60-65 low friction, long life
 Pilot mounted to tooling plate..... maximum rigidity

D. Bearings:

Special engineered material low friction, long life
 Maximum rigidity superior rod diameter to bearing length ratio

E. Position Sensing:

Easy access position sensor mounting..... integrated dovetail mounting, twin piston magnets-standard

F. NuMate™ Mounting:

Direct mount mounting system patented mounting system eliminates requirement
 Patent No. 5,560,281 for adapters and transition plates



B Series

How to Order

B 04 1 E 1 H 6 D X

Bore Sizes

- 04 = 0.437 Inch
- 06 = 0.625 Inch
- 08 = 0.875 Inch

Standard Stroke

- 0 = 0"
- 1 = 1"
- 2 = 2"
- 3 = 3"
- 4 = 4" Maximum Stroke

Fractional Stroke

- A = 0 Inch
- E = 1/2 Inch

Seal Option

- 1 = Buna
- 2 = Viton

Options

- X = No Options
 - T = Top Surface Ports
 - B = Bottom Surface Ports
- For top port option, see page 5.

Sensing Position

- A = Single Position Extend
- B = Single Position Retract
- C = Extend and Retract
- D = No Sensing

Sensing Type

Standard Cord Set

- 1 = Hall Effect - PNP (sourcing)
- 2 = Hall Effect - NPN (sinking)
- 3 = Reed Switch
- 6 = No Sensing

Quick Disconnect Cord Set

- Z = Hall Effect - PNP (sourcing)
- Y = Hall Effect - NPN (sinking)
- X = Reed Switch

Guide Shaft Material

- H = Hardened Steel
- S = Stainless Steel

Example order:

Part Number: B041E1H6DX*

Part Description: 7/16" diameter twin bore linear slide, 1.5" stroke, buna seals, 1/4" hardened steel guide shafts, no switches, no special options.

When ordering additional accessories:

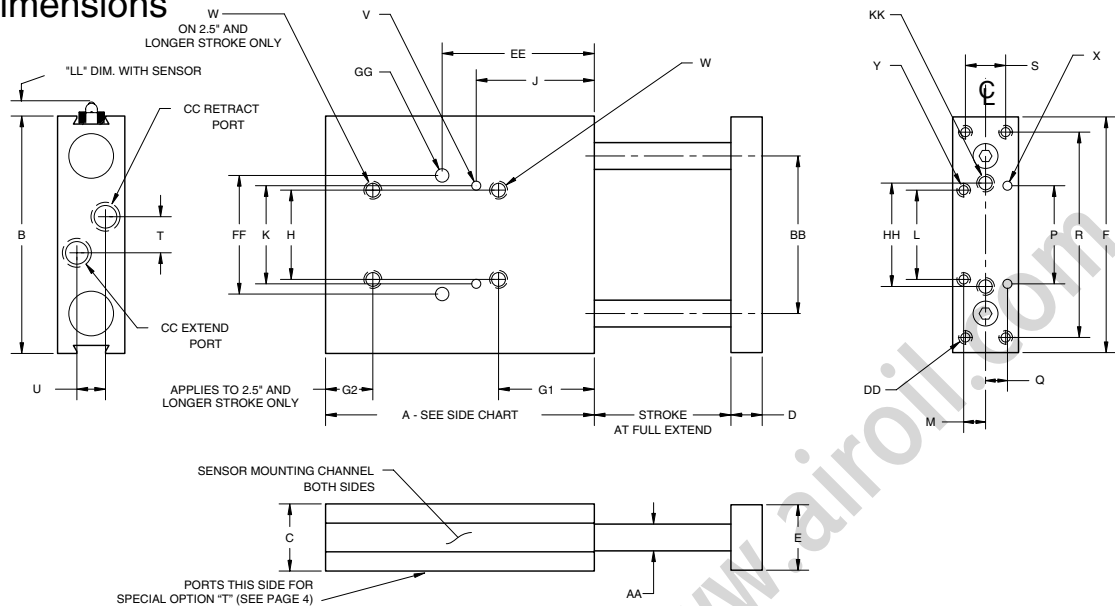
SWITCH DESCRIPTION	STANDARD PART NO.	QUICK DISCONNECT PART NO.
Hall Effect-PNP (Sourcing)	HPNPS31	HPNPQ31
Hall Effect-NPN (Sinking)	HNPNS32	HNPNQ32
Reed Switch	RSS02	RSQ02
90° 5 meter cable	-	PXC 90
Straight 5 meter cable	-	PXC ST

SERIES	BUNA-N SEAL KIT	VITON SEAL KIT
B04	BSKB-04	BSKV-04
B06	BSKB-06	BSKV-06
B08	BSKB-08	BSKV-08



B Series

B Series Dimensions



STROKE	Dim	B04		B06		B08	
		Inches	mm	Inches	mm	Inches	mm
1/2" & 1"	A	2.28	57.9	2.85	72.4	3.27	83.1
1-1/2" & 2"	A	3.28	83.3	3.85	97.8	4.27	108.5
2-1/2" & 3"	A	4.28	108.7	4.85	123.2	5.27	133.9
3-1/2" & 4"	A	5.28	134.1	5.85	148.6	6.27	159.3

	B04		B06		B08	
	Inches	mm	Inches	mm	Inches	mm
B	2.86	72.6	3.33	84.6	3.82	97.0
C	0.75	19.1	0.94	23.9	1.23	31.2
D	0.31	7.9	0.44	11.2	0.60	15.2
E	0.74	18.8	0.92	23.4	1.20	30.5
F	2.85	72.4	3.30	83.8	3.79	96.3
G1	1.30	33.0	1.34	34.0	1.76	44.7
G2	1.48	37.6	1.01	25.7	1.51	38.4
H	1.25	31.8	1.25	31.8	1.25	31.8
J	1.61	40.9	1.65	41.9	2.08	52.8
K	1.374/1.376	34.9/34.95	1.374/1.376	34.9/34.95	1.374/1.376	34.9/34.95
L	1.25	31.8	1.25	31.8	1.25	31.8
M	0.16	4.1	0.16	4.1	0.31	7.9
P	1.374/1.376	34.9/34.95	1.374/1.376	34.9/34.95	1.811/1.812	46.0/46.1
Q	0.16	4.1	0.16	4.1	0.38	9.7
R	2.50	63.5	2.88	73.2	3.25	82.6
S	0.44	11.2	0.56	14.2	0.75	19.1
T	0.25	6.4	0.51	13.0	0.51	13.0
U	0.35	8.9	0.40	10.2	0.40	10.2
V	0.1250/0.1255 x 0.200 DP	3.18/3.19 x 5.1 DP	0.1250/0.1255 x 0.200 DP	3.18/3.19 x 5.1 DP	0.1250/0.1255 x 0.200 DP	3.18/3.19 x 5.1 DP
W	1/4-20 THRU	—	1/4-20 THRU	—	1/4-20 THRU	—
X	0.1250/0.1255 THRU	3.18/3.19 THRU	0.1250/0.1255 THRU	3.18/3.19 THRU	0.1875/0.1880 THRU	4.76/4.77 THRU
Y	#10-32 THRU	—	#10-32 THRU	—	#10-32 THRU	—
AA	.250 NOM.	6.35	.375 NOM.	9.53	.500 NOM.	12.7
BB	2.00	50.8	2.21	56.1	2.46	62.5
CC	#10-32	—	1/8 NPTF	—	1/8 NPTF	—
DD	#8-32 THRU	—	#10-32 THRU	—	1/4-20 THRU	—
EE	—	—	—	—	2.44	62.0
FF	—	—	—	—	1.811/1.813	46.0/46.1
GG	—	—	—	—	0.1875/0.1880 x 0.120 DP	4.76/4.78 x 4.8 DP
HH	—	—	—	—	1.50	38.1
KK	—	—	—	—	1/4-20 THRU, C'BORE FOR #10-32 SHCS FROM OPPOSITE SIDE	—
LL	.29	(7.3)	.30	(7.6)	.30	(7.6)



B Series

Unit Weight Table

	B04	B06	B08
Unit Weight (lbs)	0.30	0.52	1.08
Adder/Full Inch Stroke (lbs)	0.19	0.28	0.58

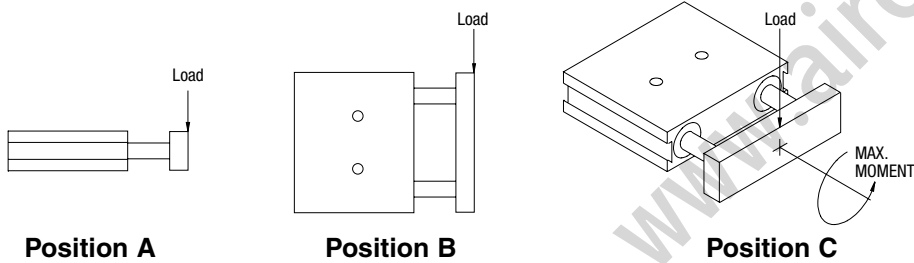
Always round up to the next full inch stroke for 1/2 inch stroke increments.

Example: B062E1H6DX $0.52 + (3 \times 0.28) = 1.36$ lbs.

Unit Output Force Table

	B04	B06	B08
Extend Force (lbs)	0.30	0.61	1.20
Retract Force (lbs)	0.20	0.39	0.81

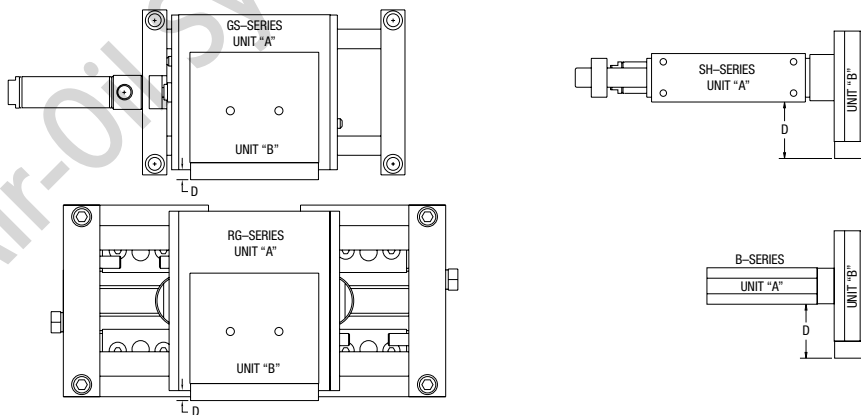
Multiply force factor by input pressure in psi.



Maximum Dynamic Load and Deflection Ratings

STROKE	B04			B06			B08		
	POS A&B LOAD (LBS)	POS A&B DEFLECTION (IN)	POS C MAX MOMENT	POS A&B LOAD (LBS)	POS A&B DEFLECTION (IN)	POS C MAX MOMENT	POS A&B LOAD (LBS)	POS A&B DEFLECTION (IN)	POS C MAX MOMENT
1	4.0	0.0005	4.0 inlb	8.0	0.0002	8.0 inlb	13.0	0.0001	13.0 inlb
2	2.0	0.0011	2.0 inlb	4.0	0.0004	4.0 inlb	6.5	0.0002	6.5 inlb
3	1.5	0.0018	1.5 inlb	2.6	0.0006	2.6 inlb	4.5	0.0004	4.5 inlb
4	1.0	0.0025	1.0 inlb	2.0	0.0010	2.0 inlb	3.5	0.0006	3.5 inlb

For static loads multiply dynamic by 1.3.

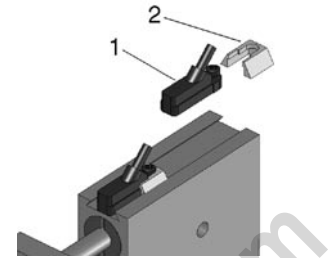


UNIT "B"	UNIT "A" ("D" = DIMENSION IN INCHES)						
	B04	B06	B08	GS075	GS106 & RG25B	SH056	SH075
B04	1.403	1.564	2.149	0.094	0.239	1.139	1.329
B06	1.310	1.472	1.486	0.256	0.401	1.300	1.491
B08	2.149	2.057	2.071	0.841	0.986	1.886	2.076

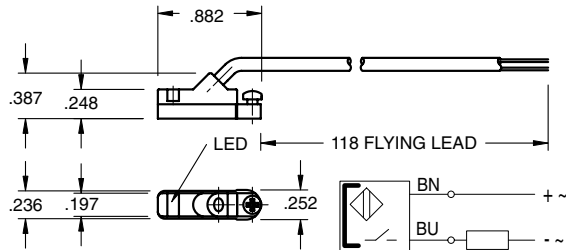


B Series Switch Information

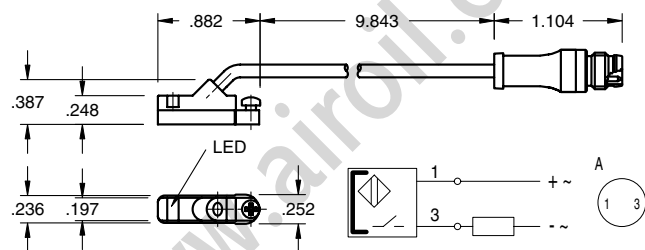
SWITCH OR BRACKET DESCRIPTION	STANDARD PART NO.	QUICK DISCONNECT PART NO.
1 Hall Effect - PNP (Sourcing)	HPNPS31	HPNPQ31
1 Hall Effect -NPN (Sinking)	HNPNS32	HNPNQ32
1 Reed Switch	RSS02	RSQ02
2 Dovetail Bracket	DSA	DSA



RSS02 – Reed Switch (AC/DC NO), flying lead



RSQ02 – 8mm connector



Sensing Data

Ambient temperature range T_a	(°F/°C)	-4 to 176 (-20 to 80)
Frequency of operating cycles f at U_e	(kHz)	0.5
Turn on time t	(ms)	≤ 0.25
turn off time t	(ms)	0.03
LED function indication		yes

Electrical Data

Rated operational voltage U_e	(V)	3...130 AC/DC
Supply voltage U_B	(V)	3...130 AC/DC
Voltage drop U_d at I_e Stat./dyn.	(V)	3.5
Rated insulation voltage U_i	(V)	2750 DC (EN 60335-1)
Rated supply frequency	(Hz)	AC/DC
Rated operational current I_e	(mA)	50 (10W max.)
No-load supply current I_o at U_e d./und.	(mA)	0

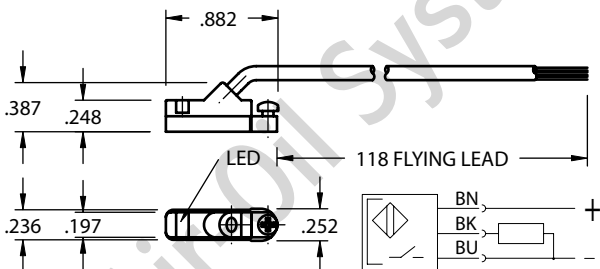
Observe polarity for correct LED function

Mechanical Data

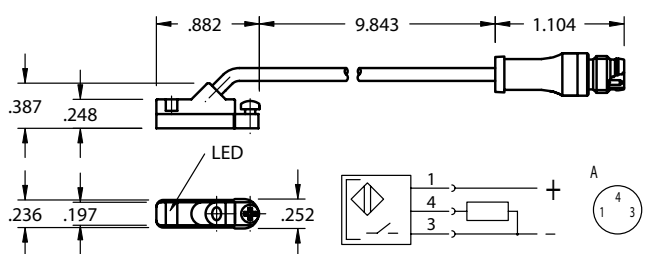
Housing material	Polyamide
Material of sensing face	Polyamide
Connection	PVC cable
Degree of Protection	IP 67
Rated shock: half-sinus, 50g, 11 ms	
Rated vibration environment: 10g, 10...2000 Hz, 90 min	



HPNPS31 – Electronic Switch (PNP NO), flying lead



HPNPQ31 – 8mm connector



Sensing Data

Ambient temperature range Δ	(°F/°C)	-13 to +158 (-25 to +70)
Temperature drift	(% of)	$\leq 0.3\%/^{\circ}\text{C}$
Frequency of operating cycles f at U_e	(kHz)	10
Turn on time t	(ms)	.05
turn off time t	(ms)	.05
Utilization categories		DC13
Function-/supply voltage indication		YES

Electrical Data

Rated operational voltage U_e	(V)	24 DC
Supply voltage U_B	(V)	10...30 DC
incl. ripple	(% of U_e)	15
Voltage drop U_d at I_e Stat./dyn.	(V)	1/-
Rated insulation voltage U_i	(V)	75 AC
Rated supply frequency	(Hz)	DC
Rated operational current I_e	(mA)	200
No-load supply current I_o at U_e d./und.	(mA)	25/13
Protected against polarity reversal		YES

Mechanical Data

Housing material	Polyamide
Material of sensing face	Polyamide
Connection	PVC cable
Degree of Protection	IP 67
Rated shock: half-sinus, 30 g, 11 ms	
Rated vibration environment: 55 Hz, 1mm amplitude, 3 x 30	

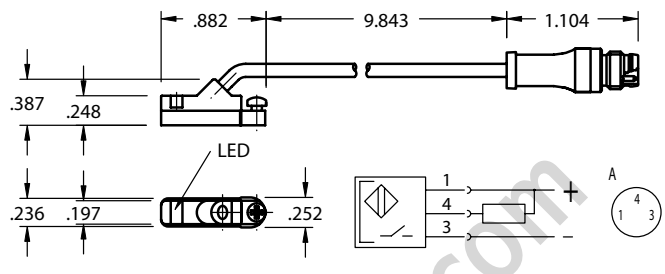
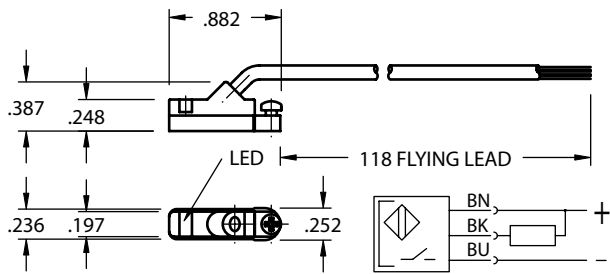




B Series

HNPNS32 – Electronic Switch (NPN NO), flying lead

HNPNQ32 – 8mm connector



Sensing Data

Ambient temperature range Δ	(°F/°C)	-13 to +158 (-25 to +70)
Temperature drift	(% of S_r)	$\leq 0.3\%/^{\circ}\text{C}$
Frequency of operating cycles f at U_e	(kHz)	10
Turn on time t	(ms)	.05
Turn off time t	(ms)	.05
Utilization categories		DC13
Function–supply voltage indication		YES

Electrical Data

Rated operational voltage U_e	(V)	24 DC
Supply voltage U_B	(V)	10...30 DC
incl. ripple	(% of U_e)	15
Voltage drop U_d at I_e Stat./dyn.	(V)	1/-
Rated insulation voltage U_i	(V)	75 AC
Rated supply frequency	(Hz)	DC
Rated operational current I_e	(mA)	200
No-load supply current I_o at U_e d./und.	(mA)	25/13
Protected against polarity reversal		YES

Mechanical Data

Housing material	Polyamide
Material of sensing face	Polyamide
Connection	PVC cable
Degree of Protection	IP 67
Rated shock: half-sinus, 30 g, 11 ms	
Rated vibration environment: 55 Hz, 1mm amplitude, 3 x 30	

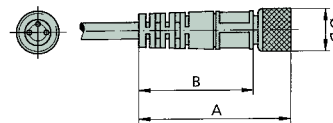


Female Connectors for Reed Switches and Hall Effect Sensors

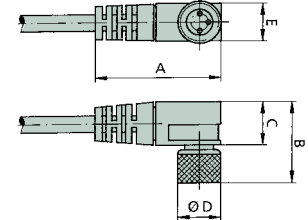
Dimensions (mm)

TYPE	ORDER CODE
Straight, 5 m Cable	PXCST
Elbow, 5 m Calbe	PXC90

Straight Type



Elbow Type



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