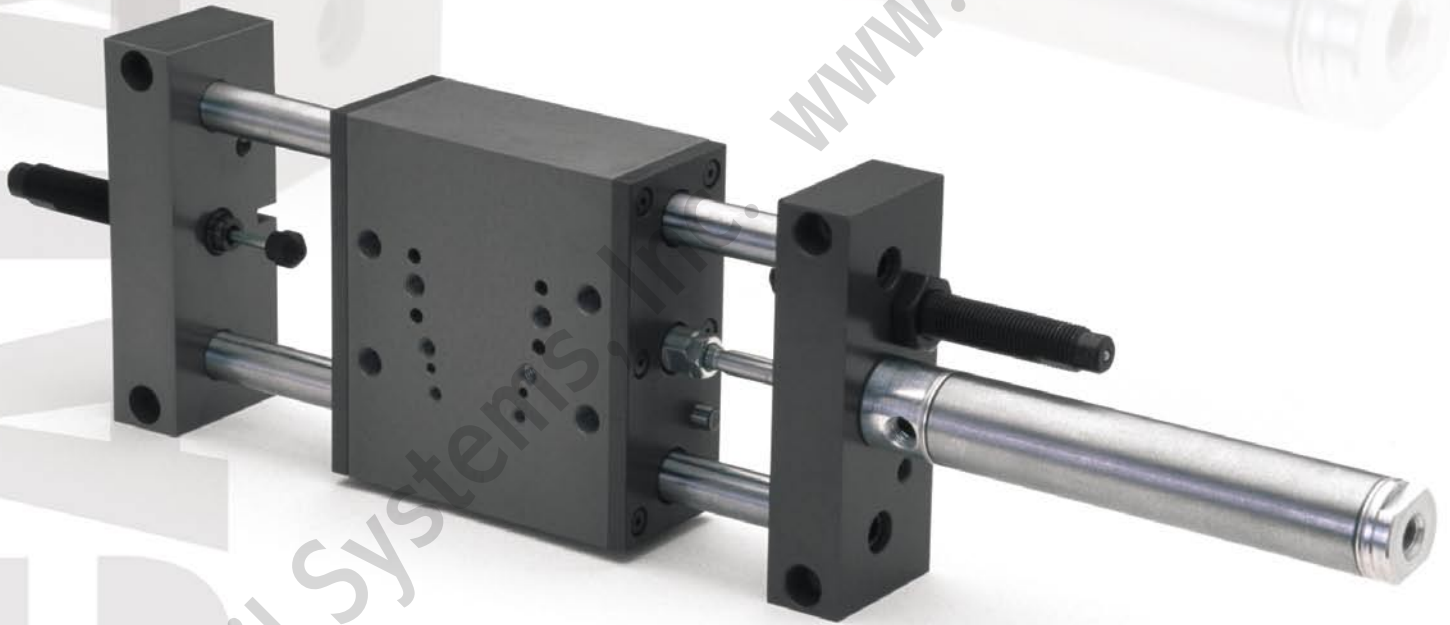


gantries

**GS** Series  
Gantry Slide



**numatics**

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Air-Oil Systems, Inc. [www.airoil.com](http://www.airoil.com)



### Designed to handle heavier loads and travel greater distances.

The design centers around a moving carriage between two fixed tool bars. The carriage is supported and guided by four bearings and two hardened guide shafts.

#### A. Carriage:

Hardcoat Anodized Aluminum ..... lightweight, high durability.  
*NuMate™* Direct Mounting Pattern Numate is a patented mounting system eliminating the need for adaptor/transition plates.  
 Slide, gantries and grippers mount directly to the GS gantry.

#### B. Air Cylinder:

Standard Stainless Steel Body and Rod ..... corrosion resistant.  
 Standard Magnetic Piston ..... sensing options Reed, Hall, Prox sensors, able to be added in field.

#### C. Alignment Coupler:

360 Degrees of Float ..... isolates cylinder, eliminates destructive side load, maximizes life.

#### D. Tool Bars:

Standard Dowel Locating Hole and Slot ..... accurate mounting and positioning.

Standard Tapped Holes for Shock Absorbers ..... accepts industry standard shocks.

#### E. Guide Shafts: (Two Choices)

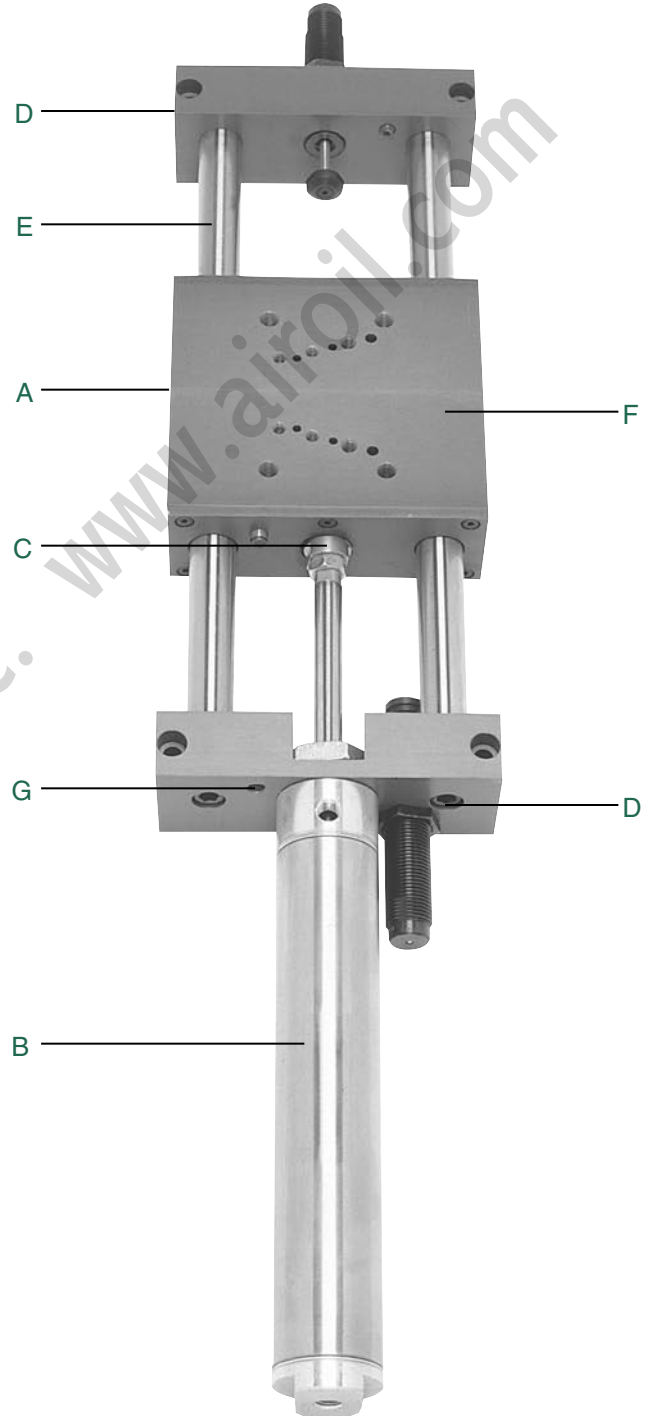
Hardened Steel ..... hardness Rc 60-65, long life.  
 Hardened Stainless Steel ..... hardness Rc 50-55, corrosion resistant.  
 Precision Ground and Polished 15u RMS ..... smooth cycling, low breakaway.  
 Large Diameter ..... increased load capacity.  
 Pilot Mounted to Tool Bar ..... maximum rigidity, increased strength.

#### F. Bearings: (Two Choices)

Four Linear Ball Bearings ..... greatest load capacity, self-lubricating, built-in seals and wipers, self-aligning.  
 Four Frelon® Compounded Teflon® ..... self-lubricating, self-aligning, long service life, ideal for cleanroom.

#### G. Stroke Adjustment Screws:

Standard Extend and Retract ..... fine adjustment for carriage travel.





## GS Series Gantry Slides

# NUMATICS®

### How to Order

**GS 075 03 LB 1 H 3 C R 4**

#### Bore Sizes

075 = 3/4 Inch  
106 = 1-1/16 Inches  
150 = 1-1/2 Inches  
200 = 2 Inches

#### Standard Stroke

01 = 1"	13 = 13"	24 = 24"
02 = 2"	14 = 14"	25 = 25"
03 = 3"	15 = 15"	26 = 26"
04 = 4"	16 = 16"	27 = 27"
05 = 5"	17 = 17"	28 = 28"
06 = 6"	18 = 18"	29 = 29"
07 = 7"	19 = 19"	30 = 30"
08 = 8"	20 = 20"	31 = 31"
09 = 9"	21 = 21"	32 = 32"
10 = 10"	22 = 22"	33 = 33"
11 = 11"	23 = 23"	34 = 34"
12 = 12"		

#### Bearing Option

LB = Linear Ball  
TB = Teflon®

#### Cylinder Type

1 – Buna-N Seals  
2 – Viton Seals (no magnet)  
3 – Buna-N Seals w/Cushions  
4 – Viton Seal with Magnet

#### Guide Shaft Material

H = Hardened Steel  
S = Stainless Steel (includes all stainless hardware)

#### Shock Absorbers

1 = Extend  
2 = Retract  
3 = Extend and Retract  
4 = No Shocks  
Reference page 7.

#### Cylinder Orientation

R = Right  
L = Left  
Reference page 7.

#### Sensing Position

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

#### Sensing Type

##### Standard Cord Set

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

##### 7\* = 8 mm 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 Deg.  
T = Prox Switch - NPN (sinking) 90 Deg.

See Sensor section.

\*Does not include switch.

Example order:

Part Number: GS07503LB1H3CR4\*

Part Description: 3/4 bore by 3 inch stroke with linear ball bearings, standard seals, hardened steel guide shafts, reed 2 position sensing, cylinder to right, no shocks.

\*When entering an order, DO NOT use spaces or dashes.

For Multi-Position Gantry ordering see page 9.

### When Ordering Additional Sensors and Shocks

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
Prox Switch - PNP (Sourcing)	SWPP - 0001	SWPP - QS01
Prox Switch - NPN (Sinking)	SWPN - 0001	SWPN - QS01
Prox Switch - PNP 90°	-	SWPP - QL01
Prox Switch - NPN 90°	-	SWPN - QL01
90° 5 meter cable	-	PXC 90
Straight 5 meter cable	-	PXC ST

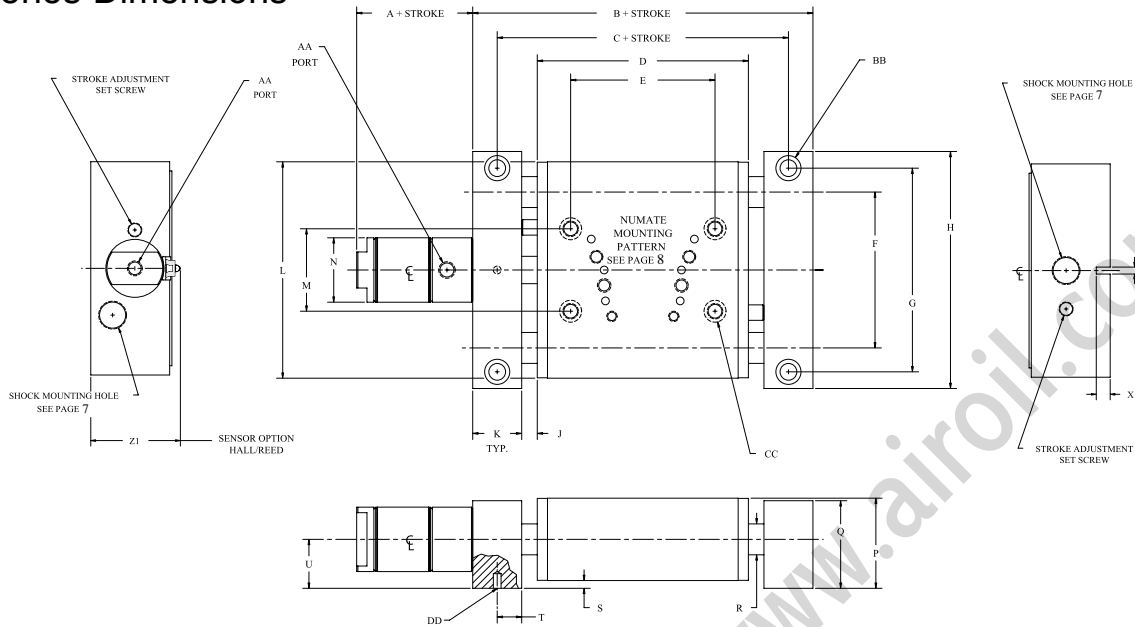
SLIDE SERIES	SHOCK ABSORBER
GS075	SK106
GS106	SK106
GS150	SK150
GS200	SK200

\*Bands and tracks required for mounting.

Reference bracket in the Switch Application Chart in the Sensor section.



### GS Series Dimensions



	GS075		GS106		GS150		GS200	
A	2.47	(62.7)	2.62	(66.5)	2.81	(71.4)	3.50	(88.9)
B	5.78	(146.8)	6.90	(175.3)	8.25	(209.6)	9.91	(251.7)
C	5.15	(130.8)	5.90	(149.9)	7.06	(179.3)	8.41	(213.6)
D	4.28	(108.7)	4.40	(111.8)	5.12	(130.0)	6.40	(162.6)
E	3.00	(76.2)	3.25	(82.6)	3.50	(88.9)	4.00	(101.6)
F	2.75	(69.8)	3.25	(82.6)	3.78	(96.0)	4.81	(122.2)
G	3.70	(94.0)	4.31	(109.5)	4.94	(125.5)	6.28	(159.5)
H	4.25	(108.0)	4.95	(125.7)	5.75	(146.1)	7.00	(177.8)
J	0.13	(3.3)	0.25	(6.4)	0.38	(9.7)	0.25	(6.4)
K	0.63	(16.0)	1.00	(25.4)	1.19	(30.2)	1.50	(38.1)
L	4.00	(101.6)	4.63	(117.6)	5.25	(133.4)	6.80	(172.7)
M	1.40	(35.6)	1.50	(38.1)	2.00	(50.8)	2.50	(63.5)
N	0.88	(22.4)	1.13	(28.7)	1.56	(39.6)	2.07	(52.6)
P	1.62	(41.1)	2.12	(53.8)	2.19	(55.6)	2.75	(69.8)
Q	1.50	(38.1)	2.00	(50.8)	2.13	(54.1)	2.56	(65.0)
R	0.50	(12.7)	0.63	(16.0)	0.75	(19.1)	1.00	(25.4)
S	0.38	(9.7)	0.13	(3.3)	0.19	(4.8)	0.25	(6.4)
T	0.311/0.313	(7.90/7.95)	0.499/0.501	(12.67/12.72)	0.593/0.595	(15.06/15.11)	0.749/0.751	(19.02/19.08)
U	1.00	(25.4)	1.13	(28.7)	1.19	(30.2)	1.50	(38.1)
W	0.1870/0.1880	(4.75/4.78)	0.1870/0.1880	(4.75/4.78)	0.1870/0.1880	(4.75/4.78)	0.2500/0.2510	(6.35/6.38)
X	0.30	(7.6)	0.30	(7.6)	0.30	(7.6)	0.40	(10.2)
AA	1/8 NPTF		1/8 NPTF		1/8 NPTF		1/4 NPTF	
BB	C'bored for 1/4 SHCS, Tapped 5/16-24 x 0.62 DP From Opposite Side.		C'bore for 5/16 SHCS Tapped 3/8-24 x 0.59 DP From Opposite Side.		C;bore for 5/16 SHCS, Tapped 3/8-24 x 0.59 DP From Opposite Side.		C'bore for 3/8 SHCS, Tapped 7/16-20 x 0.88 DP From Opposite Side.	
CC	Tapped 5/16-24 x .62 DP, C'bored for 1/4 SHCS, From Opposite Side.		Tapped 3/8-24 x 0.59 DP, C'bore for 5/16 SHCS From Opposite Side.		Tapped 3/8-24 x 0.59 DP, C;bore for 5/16 SHCS, From Opposite Side.		Tapped 7/16-20 x 0.88 DP, C'bore for 3/8 SHCS, From Opposite Side.	
DD	0.1870/0.1880	(4.75/4.78)	0.1870/0.1880	(4.75/4.78)	0.1870/0.1880	(4.75/4.78)	0.2500/0.2510	(6.35/6.38)
Z1	1.91	(49.0)	2.16	(55.0)	2.44	(62.0)	3.01	(76.0)

(mm)

### Unit Weight Table

	GS075	GS106	GS150	GS200
Base Unit Weight (lbs.)	3.81	6.46	9.18	16.75
Adder/inch of stroke (lbs.)	0.15	0.22	0.34	0.59

Add base weight to inch adder X stroke. Sample weight calculation: Model GS075 W/6" stroke, 3.81 + (0.15 x 6) = 4.71 lbs.

### Unit Output Force Table

	GS075	GS106	GS150	GS200
Extend Force (lbs.)	0.44	0.88	1.76	3.14
Retract Force (lbs.)	0.39	0.81	1.61	2.83

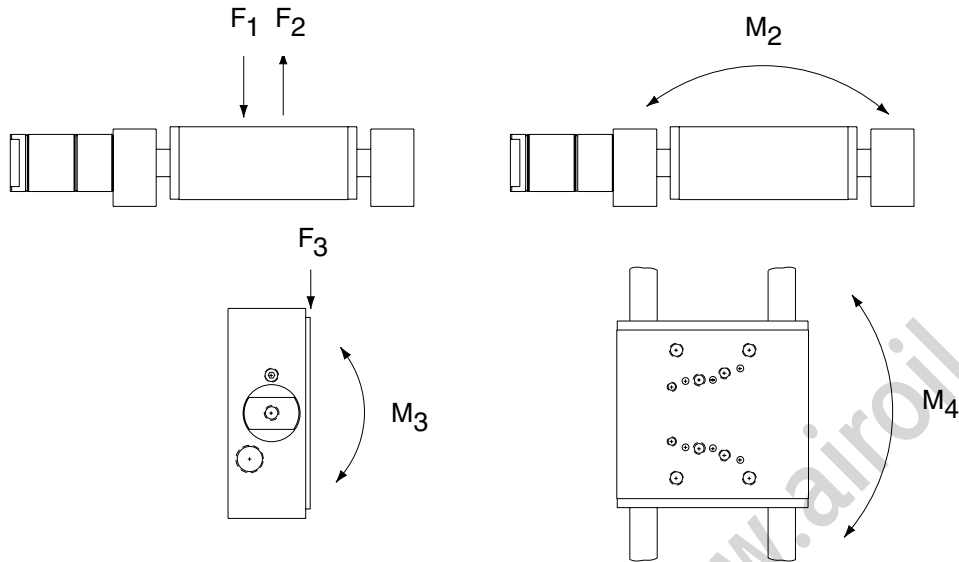
Multiply force factor X input pressure in PSI. Sample output force calculation: Model GS150 extend force @ 70PSI, 1.76 x 70 = 123.2 lbs.



## GS Series Gantry Slides

**NUMATICS®**

### Technical Specifications

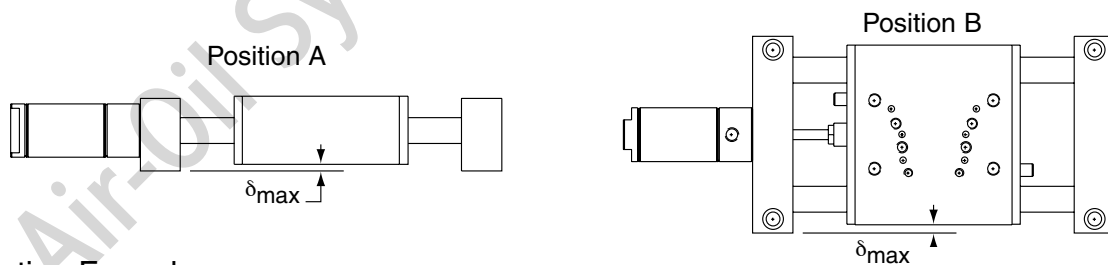


### Linear Ball Bearing Dynamic Loads

SLIDE SERIES	F <sub>1</sub> / F <sub>2</sub> / F <sub>3</sub>		M <sub>2</sub>		M <sub>3</sub>		M <sub>4</sub>	
GS075	90 lb.	(40.8) kg.	110 in. lb.	(12.4) N.m.	222 in. lb.	(25.1) N.m.	222 in. lb.	(25.1) N.m.
GS106	160 lb.	(72.6) kg.	178 in. lb.	(20.1) N.m.	455 in. lb.	(51.4) N.m.	455 in. lb.	(51.4) N.m.
GS150	275 lb.	(124.7) kg.	262 in. lb.	(29.6) N.m.	790 in. lb.	(89.3) N.m.	790 in. lb.	(89.3) N.m.
GS200	520 lb.	(235.9) kg.	435 in. lb.	(49.1) N.m.	1657 in. lb.	(187.2) N.m.	1657 in. lb.	(187.2) N.m.

### Teflon Dynamic Loads

SLIDE SERIES	F <sub>1</sub> / F <sub>2</sub> / F <sub>3</sub>		M <sub>2</sub>		M <sub>3</sub>		M <sub>4</sub>	
GS075	63 lb.	(28.6) kg.	77 in. lb.	(8.7) N.m.	155 in. lb.	(17.5) N.m.	155 in. lb.	(17.5) N.m.
GS106	112 lb.	(50.8) kg.	124 in. lb.	(14.0) N.m.	318 in. lb.	(35.9) N.m.	318 in. lb.	(35.9) N.m.
GS150	193 lb.	(87.5) kg.	183 in. lb.	(20.7) N.m.	553 in. lb.	(62.5) N.m.	553 in. lb.	(62.5) N.m.
GS200	364 lb.	(165.1) kg.	304 in. lb.	(34.3) N.m.	1159 in. lb.	(130.9) N.m.	1159 in. lb.	(130.9) N.m.



### Deflection Formulas

	POSITION A	POSITION B
GS075	$\delta_{\max} = (\text{LOAD}) \left( \left( \frac{\text{STROKE}}{2} \right) - 1.325 \right)^3 \left( 2 + \frac{15.9}{\text{STR}_{\text{OKE}-2.65}} \right) 1.1331 \times 10^{-7}$	$\delta_{\max} = (\text{LOAD}) \left( \left( \frac{\text{STROKE}}{2} \right) - 1.325 \right)^3 \left( 2 + \frac{15.9}{\text{STR}_{\text{OKE}-2.65}} \right) 7.9317 \times 10^{-8}$
GS106	$\delta_{\max} = (\text{LOAD}) \left( \left( \frac{\text{STROKE}}{2} \right) - 1.200 \right)^3 \left( 2 + \frac{19.5}{\text{STR}_{\text{OKE}-2.40}} \right) 4.6491 \times 10^{-8}$	$\delta_{\max} = (\text{LOAD}) \left( \left( \frac{\text{STROKE}}{2} \right) - 1.200 \right)^3 \left( 2 + \frac{19.5}{\text{STR}_{\text{OKE}-2.40}} \right) 3.2544 \times 10^{-8}$
GS150	$\delta_{\max} = (\text{LOAD}) \left( \left( \frac{\text{STROKE}}{2} \right) - 1.500 \right)^3 \left( 2 + \frac{18.0}{\text{STR}_{\text{OKE}-3.00}} \right) 2.2515 \times 10^{-8}$	$\delta_{\max} = (\text{LOAD}) \left( \left( \frac{\text{STROKE}}{2} \right) - 1.500 \right)^3 \left( 2 + \frac{18.0}{\text{STR}_{\text{OKE}-3.00}} \right) 1.5761 \times 10^{-8}$
GS200	$\delta_{\max} = (\text{LOAD}) \left( \left( \frac{\text{STROKE}}{2} \right) - 1.828 \right)^3 \left( 2 + \frac{21.9}{\text{STR}_{\text{OKE}-3.66}} \right) 7.1055 \times 10^{-9}$	$\delta_{\max} = (\text{LOAD}) \left( \left( \frac{\text{STROKE}}{2} \right) - 1.828 \right)^3 \left( 2 + \frac{21.9}{\text{STR}_{\text{OKE}-3.66}} \right) 4.9739 \times 10^{-9}$

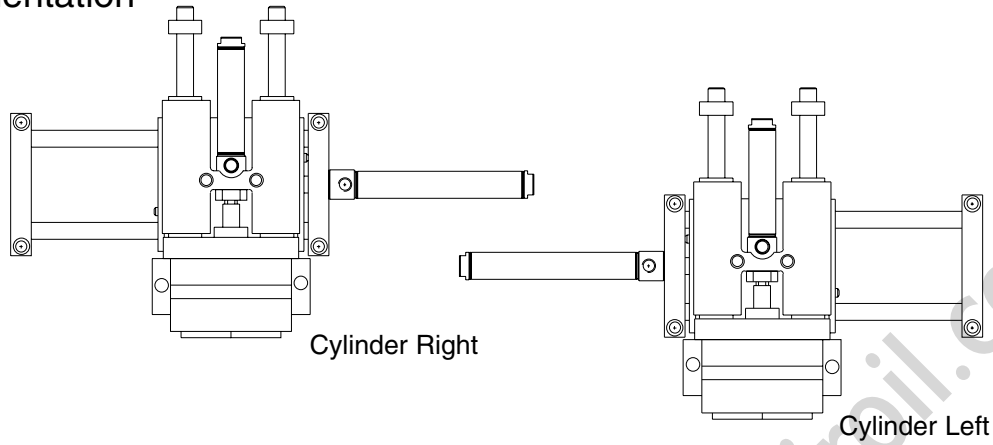
LOAD and STROKE values input by customer.

Sample Deflection Calculation: GS10605 with 110# load in Position A

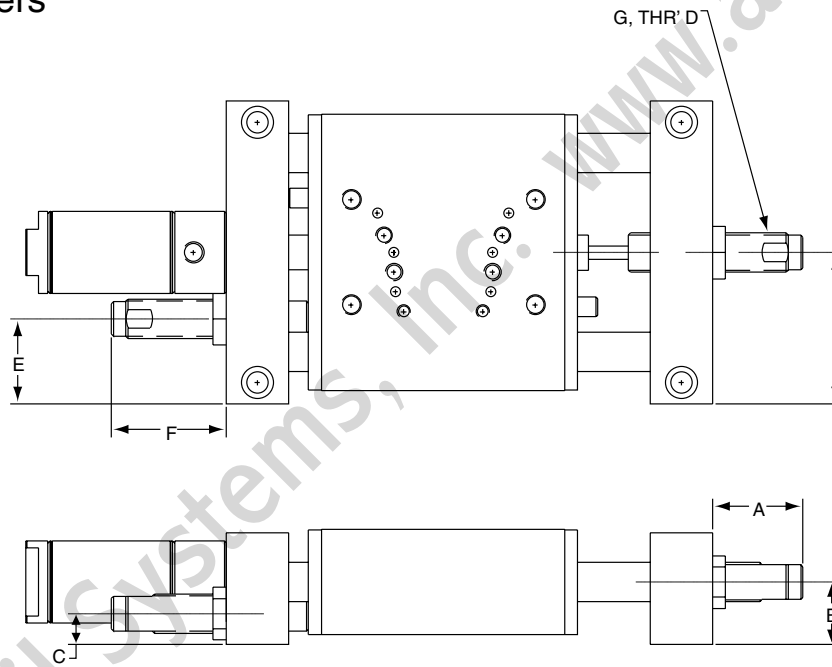
$$\delta_{\max} = (110) \left( \left( \frac{5}{2} \right) - 1.200 \right)^3 \left( 2 + \frac{19.5}{5-2.40} \right) 4.6491 \times 10^{-8} : \delta_{\max} = (110) (1.300)^3 (2+7.5) 4.6491 \times 10^{-8} = 0.00011 \text{ inch at mid travel}$$



### Cylinder Orientation



### Shock Absorbers



### Dimensions

	GS075		GS106		GS150		GS200	
A	2.78	(70.6)	2.21	(56.1)	1.72	(43.7)	2.34	(59.4)
B	1.00	(25.4)	1.13	(28.7)	1.19	(30.2)	1.50	(38.1)
C	0.61	(15.5)	0.63	(16.0)	0.59	(15.0)	0.74	(18.8)
D	2.13	(54.1)	2.48	(63.0)	2.88	(73.2)	3.50	(88.9)
E	1.20	(30.5)	1.48	(37.6)	1.62	(41.1)	1.85	(47.0)
F	3.12	(79.2)	2.62	(66.5)	2.19	(55.6)	2.87	(72.9)
G	9/16 - 18		9/16 - 18		3/4 - 16		1 - 12	
(mm)								

### Shock Absorbers

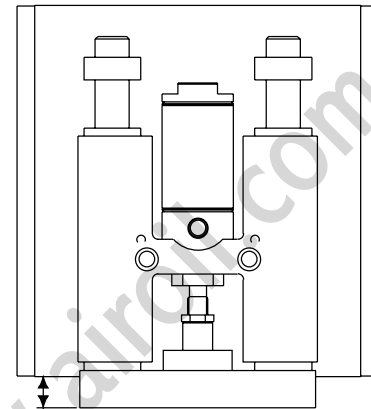
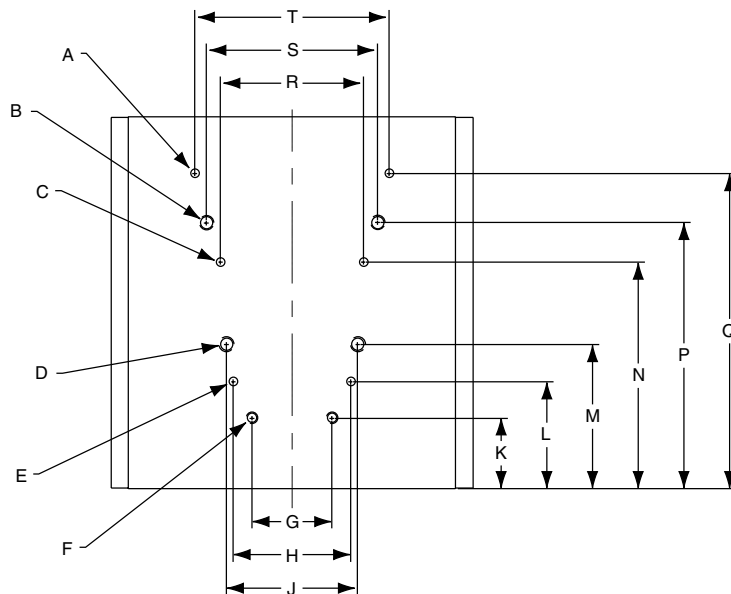
	GS075	GS106	GS150	GS200
PART NO.	SK106	SK106	SK150	SK200



## GS Series Gantry Slides

# NUMATICS®

### NuMate Mounting System



Refer To Numate Capatability Table

### NuMate™ Pattern Dimensional Data

	GS075	GS106	GS150	GS200
A	0.187/0.188 x 0.37 DP	0.187/0.188 x 0.37 DP	0.187/0.188 x 0.37 DP	0.250/0.251 x 0.50 DP
B	1/4-20 x 0.37 DP	5/16-18 x 0.50 DP	5/16-18 x 0.50 DP	3/8-16 x 0.60 DP
C	0.125/0.126 x 0.25 DP	0.187/0.188 x 0.37 DP	0.187/0.188 x 0.37 DP	0.187/0.188 x 0.37 DP
D	#10-32 x 0.33 DP	1/4-20 x 0.37 DP	5/16-18 x 0.50 DP	5/16-18 x 0.50 DP
E	.0937/.0947 x 0.18 DP	0.125/0.126 x 0.25 DP	0.187/0.188 x 0.37 DP	0.187/0.188 x 0.37 DP
F	#6-32 x 0.22 DP	#10-32 x 0.33 DP	1/4-20 x 0.37 DP	5/16-18 x 0.50 DP
G	1.00 (25.4)	1.25 (31.8)	1.50 (38.1)	1.87 (47.5)
H	1.00 (25.4)	1.38 (35.1)	1.81 (46.0)	1.87 (47.5)
J	1.25 (31.8)	1.50 (38.1)	1.87 (47.5)	2.25 (57.2)
K	1.12 (28.4)	1.38 (35.1)	1.50 (38.1)	2.38 (60.5)
L	1.33 (33.8)	1.69 (42.9)	1.87 (47.5)	2.76 (70.1)
M	1.52 (38.6)	1.94 (49.3)	2.25 (57.2)	3.08 (78.2)
N	1.83 (46.5)	2.31 (58.7)	2.63 (66.8)	3.52 (89.4)
P	2.13 (54.1)	2.69 (68.3)	2.95 (74.9)	3.87 (98.3)
Q	2.50 (63.5)	3.06 (77.7)	3.38 (85.9)	4.37 (111.0)
R	1.38 (35.1)	1.81 (46.0)	1.87 (47.5)	2.50 (63.5)
S	1.50 (38.1)	1.87 (47.5)	2.25 (57.2)	2.75 (69.8)
T	1.81 (46.0)	1.87 (47.5)	2.50 (63.5)	3.00 (76.2)

(mm)

### NuMate™ Compatibility Table & Edge Reference

	GS075	GS106	GS150	GS200
SH031	0.15 (3.8)			
SH056	0.36 (9.1)	0.50 (12.7)		
SH075	0.21 (5.3)	0.40 (10.2)	0.84 (21.3)	
SH106		0.22 (5.6)	0.65 (16.5)	0.52 (13.2)
SH150			0.30 (7.6)	0.16 (4.1)
SH200				0.13 (3.3)
LC056	-0.28 (-7.1)	-0.14 (-3.6)		
LC075	-0.54 (-13.7)	-0.35 (-8.9)	0.09 (2.3)	
LC106		-0.85 (-21.6)	-0.41 (-10.4)	-0.54 (-13.7)
LC150			-0.89 (-22.6)	-1.02 (-25.9)
B04	0.09 (2.3)	0.24 (6.1)		
B06	0.26 (6.6)	0.40 (10.2)		
B08	0.84 (21.3)	0.99 (25.2)		

(mm)

8

Information subject to change without notice. For ordering information or regarding your local sales office visit [www.numatics.com](http://www.numatics.com).





### How to Order

#### 3 Position Gantry Slide

**GM C 02 01 A 1 1 6 D R 4**

#### Bore Sizes

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

#### Front Cylinder (Total Stroke)

01 - 18 Inches

#### 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 Stainless Steel Shafts
- 3 = Teflon® Hardened Steel Shafts
- 4 = Teflon® Stainless Steel Shafts

#### Cylinder Type

- 1 = Buna-N Seals
- 2 = Viton Seals (no magnet)
- 3 = Buna-N Seals w/Cushions Full Ext. and Ret. only

#### Shock Absorbers

- 1 = Full Extend
- 2 = Full Retract
- 3 = Full Extend and Retract
- 4 = No Shocks

#### Cylinder Orientation

- R = Right
- L = Left

#### Sensing Position

- A = Single Position Extend
- B = Single Position Retract
- C = Two Position Sensing
- D = No Sensing
- E = 3 Position (Extend, Retract & Mid Stroke)
- 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
- Quick Disconnect Cord Set
- Z = Hall Effect - PNP (sourcing)
- Y = Hall Effect - NPN (sinking)
- X = Reed Switch
- W = Prox Switch on Cylinder - PNP (sourcing) Straight
- V = Prox Switch on Cylinder - NPN (sinking) Straight
- U = Prox Switch on Cylinder - PNP (sourcing) 90 Deg.
- T = Prox Switch on Cylinder - NPN (sinking) 90 Deg.

See Sensor section.

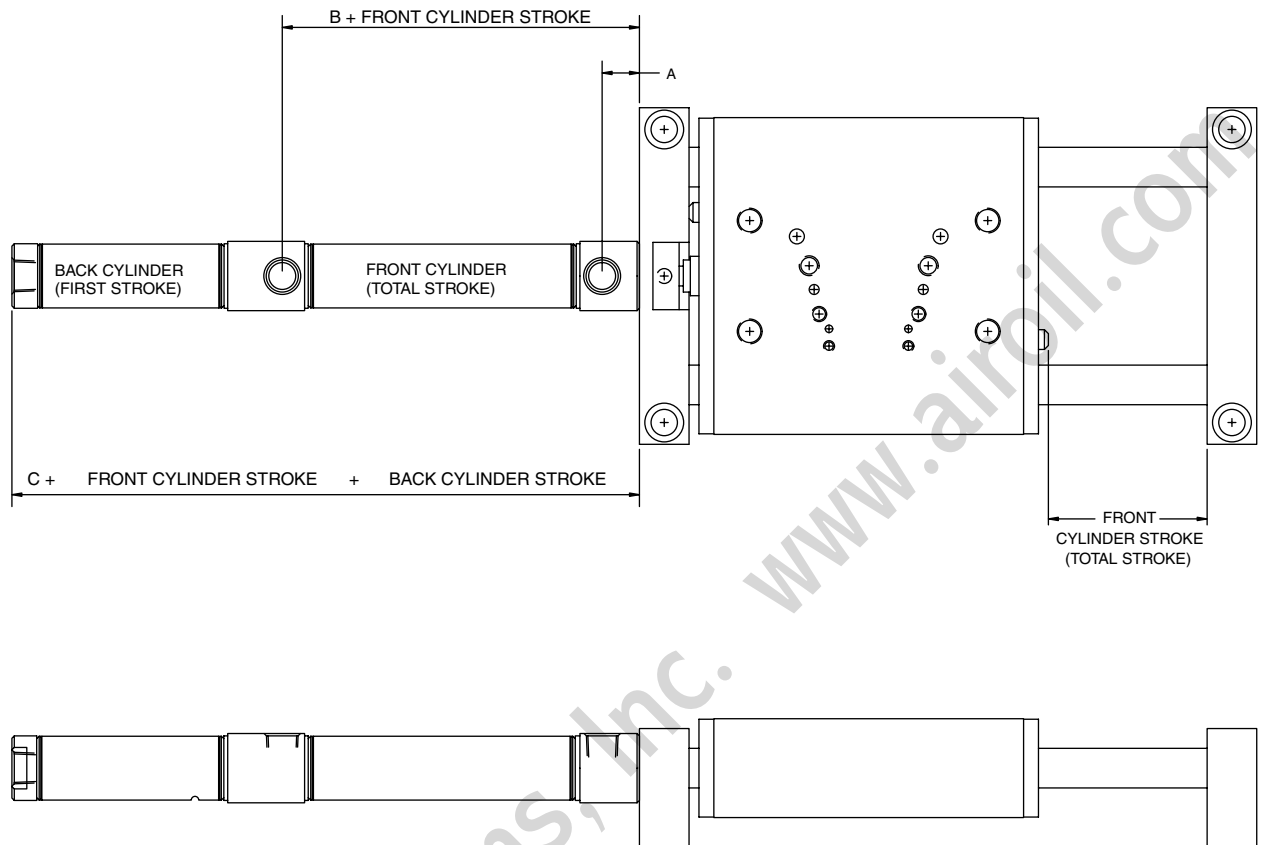
\*Does not include switch.



## GS Series Gantry Slides

**NUMATICS®**

### 3 Position Gantry Slide



### Dimensions - Inches

GS SERIES	A	B	C
GS075	0.47	2.50	4.91
GS106	0.56	2.59	5.16
GS150	0.63	2.75	5.56
GS200	0.74	3.45	6.93

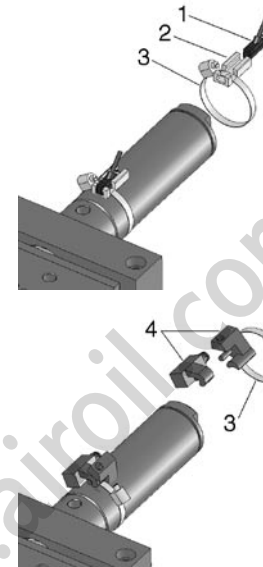


### GS Series Switch Information

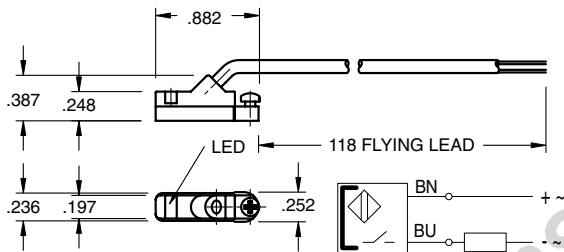
	SWITCH OR BRACKET DESCRIPTION	STANDARD PART NO.	QUICK DISCONNECT PART NO.
1	Hall Effect - PNP (Sourcing)	HPNPS31	HPNPQ31
1	Hall Effect -NPN (Sinking)	HNPNS32	HNPNQ32
1	Reed Switch	RSS02	RSQ02
2	Short Switch Bracket	SBS-1	SBS-1
2	Long Switch Bracket**	SBL-2	SBL-2
3	Switch Band Clamp	SBC###*	SBC###*
4	Prox Switch - PNP (Sourcing)	SWPP-0001	SWPP-QS01
4	Prox Switch - NPN (Sinking)	SWPN-0001	SWPN-QS01

\*Use the 3 digit bore size with "SBC" number to complete part number  
Example: GS15003LB1H3CR4 = Switch Band clamp p/n: SBC150

\*\* Long bracket used on strokes of 1" or less with two position sensing.



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



#### Sensing Data

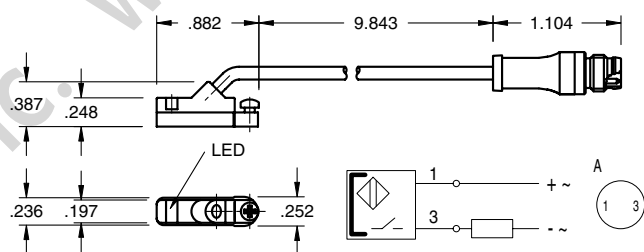
Ambient temperature range $T_a$	(°F/°C)	-4 to 176 (-20 to 80)
Frequency of operating cycles $f$ at $U_e$	(kHz)	0.5
Turn on time $t$	(ms)	$\leq 0.25$
turn off time $t$	(ms)	0.03
LED function indication		yes

#### 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 volatage $U_i$	(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

### RSQ02 – 8mm connector



#### 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	



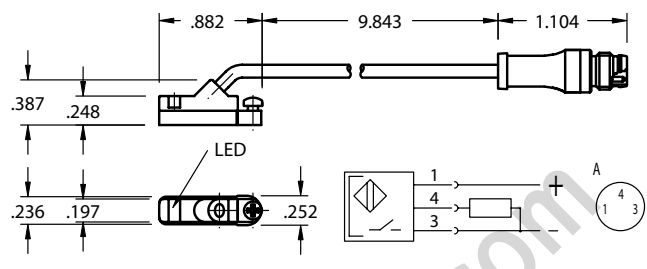
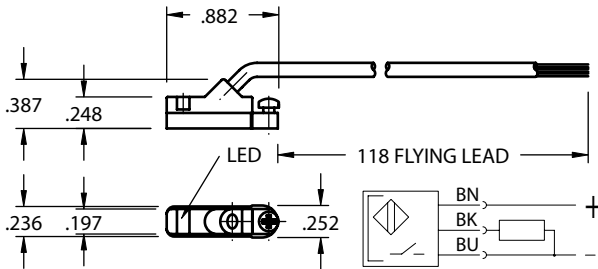


## GS Series Gantry Slides

# NUMATICS®

### HPNPS31 – Electronic Switch (PNP NO), flying lead

### HPNPQ31 – 8mm connector



#### Sensing Data

Ambient temperature range $\Delta$	(°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

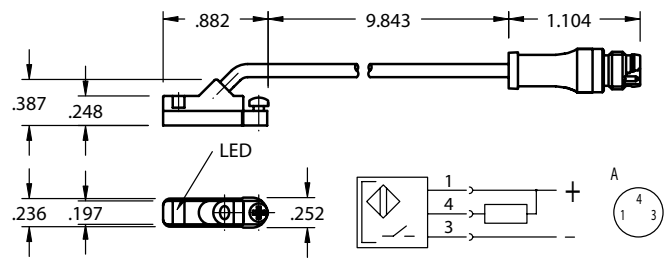
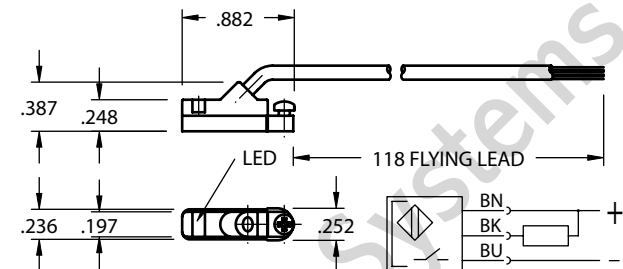
#### Mechanical Data

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	



### HNPNS32 – Electronic Switch (NPN NO), flying lead

### HNPNQ32 – 8mm connector



#### Sensing Data

Ambient temperature range $\Delta$	(°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

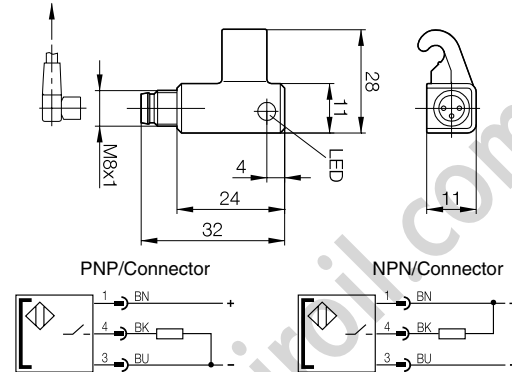
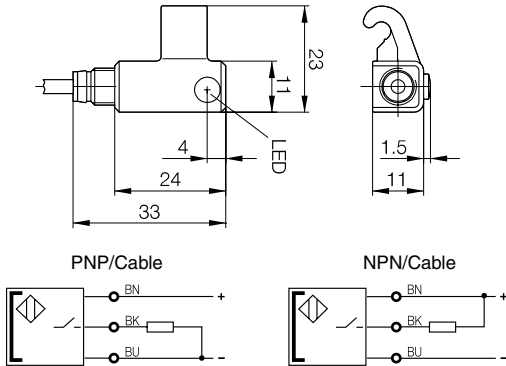
Housing material	Polyamide
Material of sensing face	Polyamide
Connection	PVC cable
Degree of Protection	IP 67
Rated shock: half-sinus, 30 g, 11 ms	
Rated vibration environment: 55 Hz, 1mm amplitude, 3 x 30	





SWPP-0001 (PNP NO), flying lead  
SWPN-0001 (NPN NO), flying lead

SWPP-QS01 – 8 mm connector  
SWPN-QS01 – 8 mm connector



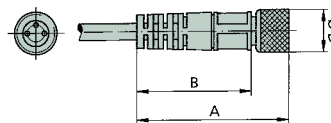
Hysteresis of I <sub>Hn</sub> I	≤45%
Temperature drift of turn-on point of I <sub>Hn</sub> I	≤0.3%/°C
Turn-on delay	≤0.5 ms
Turn-off delay	≤0.5 ms
Supply voltage U <sub>B</sub>	10...30 Vdc
Voltage drop U <sub>d</sub>	≤3.1 V
Rated insulation voltage U <sub>i</sub>	75 Vdc
Rated operating current I <sub>e</sub>	200 mA <sup>1</sup>
No-load supply current I <sub>o</sub> max.	≤30 mA
Off-state current I <sub>r</sub>	≤80 μA
Protected against polarity reversal	yes
Short circuit protected	yes
Load capacitance	≤1 μF
Ambient temperature range T <sub>a</sub>	-25°C...+70°C
Utilization category	DC 13
Degree of protection per IEC 60529	IP 67
Housing material	PBT Hardened

## Female Connectors for Reed Switches and Hall Effect Sensors

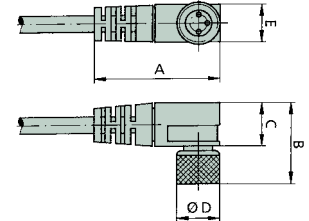
Dimensions (mm)

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

Straight Type



Elbow Type



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