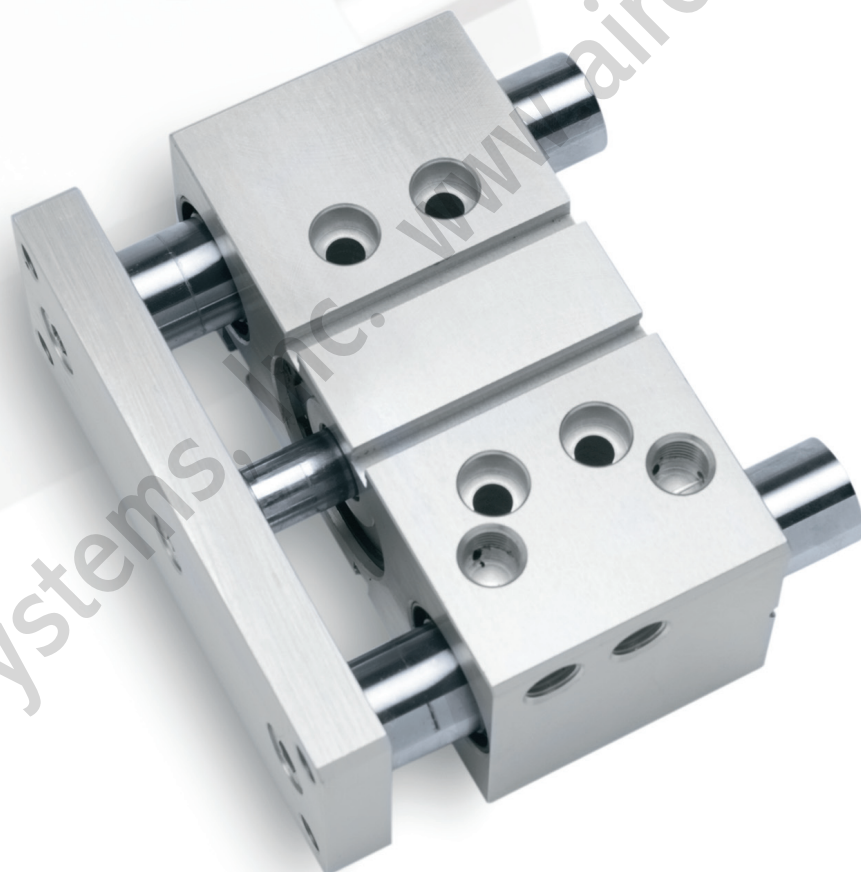


slides

**CGT** Series  
Compact Guide Slide



**numatics**<sup>®</sup>

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



### CGT Series Compact Guide Slide

#### A. Body

Anodized aluminum alloy, lightweight and durable. Multiple mounting options, counter bored holes, drilled and tapped holes and extruded "T" slots.

#### B. Tool Plate

Precision machines anodized aluminum alloy, easy access mounting holes for tooling attachment.

#### C. Bearings

Two choices, recirculating ball for heavy-duty applications and sintered bronze for medium to light duty applications.

#### D. Rod Wipers

Steel reinforced rod wiper assures wiping action on guide shafts to protect bearings from operating environment contamination.

#### E. Guide Shafts

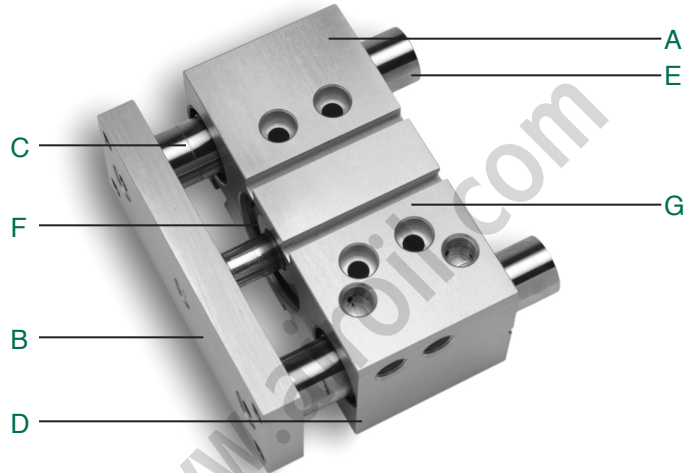
Hardened, ground and polished, Oversized diameter for additional load support and rigidity.

#### F. Piston

Internal to body. Magnetic band for position sensing standard on all sizes and strokes.

#### G. Sensor Mounting Track

Extruded directly in body, no external brackets, easy access for Hall effect and Reed switches.



### How to Order

**CGT 032 050 B 1 6 D X**

#### Bore Diameter

016 = 16 mm  
020 = 20 mm  
025 = 25 mm  
032 = 32 mm  
040 = 40 mm  
050 = 50 mm

#### Stroke

010 = 10 mm  
020 = 20 mm  
025 = 25 mm  
030 = 30 mm  
040 = 40 mm  
050 = 50 mm  
075 = 75 mm  
100 = 100 mm

Reference Standard Stroke table for available bore and stroke.

#### Bearing Option

B = Bronze Bushing  
L = Linear Ball Bearing

#### Seal Option

1 = Polyurethane

#### Options

X = No Options

#### 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  
6 = No Sensing

##### Quick Connect Cord Set

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

### When Ordering Additional Sensors

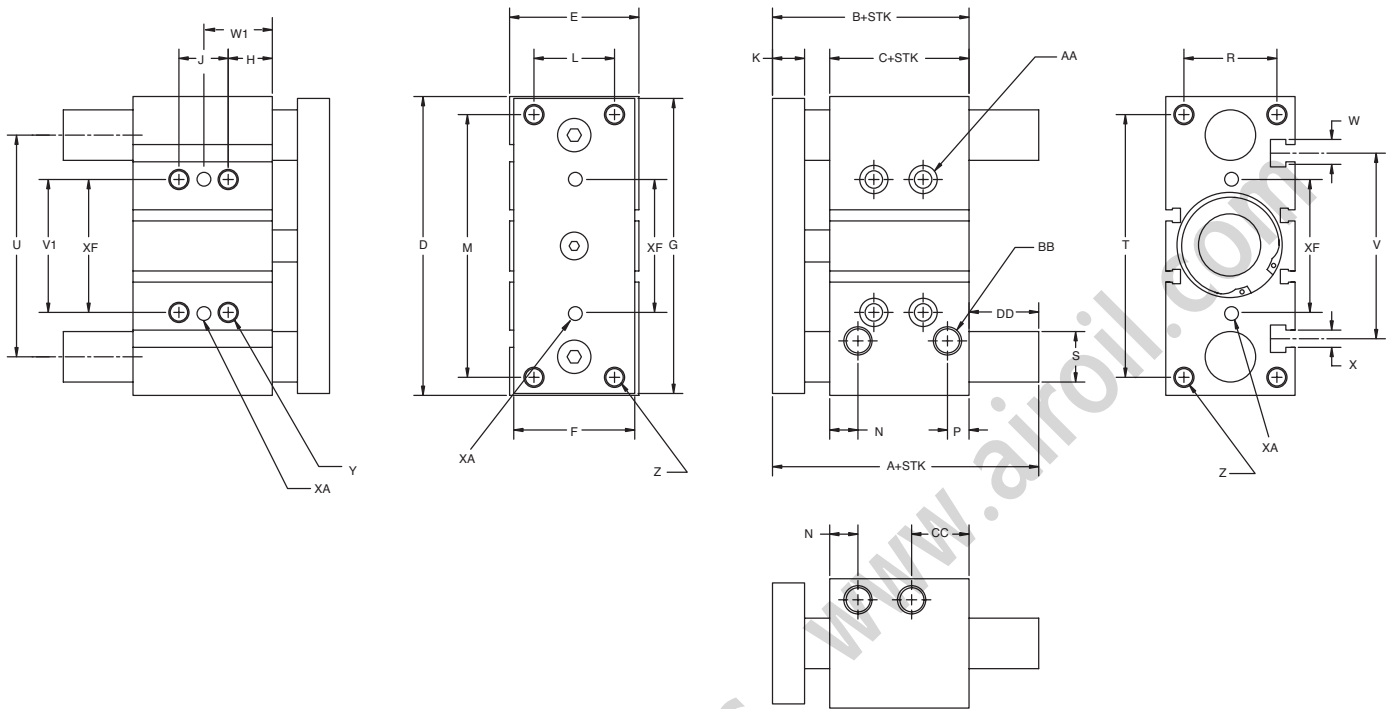
SWITCH DESCRIPTION	STANDARD PART NO.
Hall Effect - PNP (Sourcing)	HPNPS31
Hall Effect - NPN (Sinking)	HNPNS32
Reed Switch	RSS02



## CGT Series Compact Guide Slide

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### CGT Series Dimensions



BORE	B	C	D	E	F	G	H	K	L	M	N	P	R
16	46.0	33.0	64.0	30.0	25.0	62.0	5.0	8.0	16.0	54.0	11.0	8.0	22.0
20	53.0	37.0	83.0	36.0	30.0	81.0	17.0	10.0	18.0	70.0	10.5	8.5	24.0
25	53.5	37.5	93.0	42.0	38.0	91.0	17.0	10.0	26.0	78.0	11.5	9.0	30.0
32	59.5	37.5	112.0	48.0	44.0	110.0	21.0	12.0	30.0	96.0	12.5	9.0	34.0
40	66.0	44.0	120.0	54.0	44.0	118.0	22.0	12.0	30.0	104.0	14.0	10.0	40.0
50	72.0	44.0	148.0	64.0	60.0	146.0	22.0	16.0	40.0	130.0	14.0	11.0	46.0

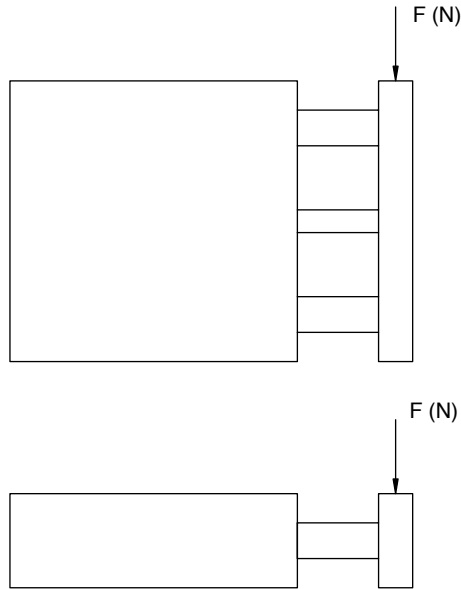
BORE	S	T	U	V	V1	W	X	Y	Z	AA	BB	CC	XF	XA
16	10.0	56.0	46.0	38.0	24.0	7.40	4.4	M5	M5	4 mm SHCS	M5	18.0	24.0	3mm
20	12.0	72.0	54.0	44.0	28.0	8.40	5.4	M6	M5	5 mm SHCS	G 1/8	24.5	28.0	3mm
25	16.0	82.0	64.0	49.7	34.0	8.54	5.2	M6	M6	5 mm SHCS	G 1/8	25.0	34.0	4mm
32	20.0	98.0	78.0	63.0	42.0	10.50	6.5	M8	M8	6 mm SHCS	G 1/8	30.5	42.0	4mm
40	20.0	106.0	86.0	72.0	50.0	10.50	6.5	M8	M8	6 mm SHCS	G 1/8	31.0	50.0	4mm
50	25.0	130.0	110.0	92.4	66.0	13.4	8.4	M10	M10	8 mm SHCS	G 1/4	35.0	66.0	5mm

BORE	STROKE					
	10 TO 50 A	75 TO 100 A	10 TO 30 J	40 TO 100 J	25 J	50 TO 100 J
16	46.0	-	24.0	44.0	-	-
20	53.0	84.5	24.0	44.0	-	-
25	53.5	85.0	24.0	44.0	-	-
32	97.0	107.0	-	-	24.0	48.0
40	97.0	102.0	-	-	24.0	48.0
50	106.5	118.0	-	-	24.0	48.0

BORE	(STROKE)			
	DD	DD	W1	W1
16	0 (10-30)	20 (40-100)	17 (10-30)	27 (40-100)
20	0 (20-30)	32.5 (40-100)	29 (10-30)	39 (40-100)
25	0 (20-30)	32.5 (75-100)	29 (10-30)	39 (40-100)
32	37.5 (25-50)	47.5 (75-100)	33 (10-30)	45 (40-100)
40	31 (25-50)	41 (75-100)	34 (10-30)	46 (40-100)
50	34.5 (25)	42 (50)	46 (75-100)	48 (40-100)



### CGT Series

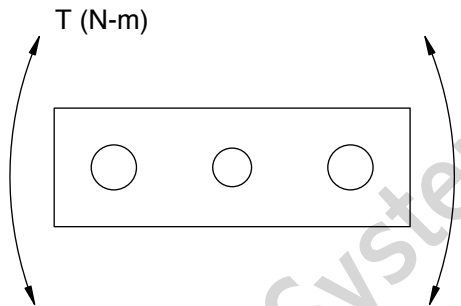


### Load vs Stroke

Load Values = N (newtons)

BORE mm	BEARING TYPE	STROKE							
		10	20	25	30	40	50	75	100
16	Bronze	28.0	28.0	–	25.0	22.0	19.0	–	–
	Linear Ball	35.0	30.0	–	26.0	37.0	33.0	–	–
20	Bronze	–	51.0	–	44.0	38.0	34.0	53.0	44.0
	Linear Ball	–	55.0	–	47.0	78.0	69.0	57.0	49.0
25	Bronze	–	70.0	–	60.0	53.0	47.0	59.0	51.0
	Linear Ball	–	71.0	–	61.0	77.0	72.0	77.0	65.0
32	Bronze	–	–	88.0	–	–	59.0	137.0	108.0
	Linear Ball	–	–	196.0	–	–	167.0	275.0	216.0
40	Bronze	–	–	88.0	–	–	59.0	137.0	108.0
	Linear Ball	–	–	196.0	–	–	167.0	275.0	216.0
50	Bronze	–	–	137.0	–	–	88.0	215.0	176.0
	Linear Ball	–	–	294.0	–	–	255.0	392.0	313.0

To Convert Newtons to Pounds: newtons x 0.2248 = pounds force



### Twisting Moment vs Stroke

Moment Values = N-m (newton-meters)

BORE mm	BEARING TYPE	STROKE							
		10	20	25	30	40	50	75	100
16	Bronze	0.51	0.43	–	0.35	0.31	0.27	–	–
	Linear Ball	0.75	0.58	–	0.48	0.71	0.64	–	–
20	Bronze	–	0.91	–	0.78	0.71	0.63	1.04	0.88
	Linear Ball	–	1.26	–	1.06	1.77	1.58	1.22	1.01
25	Bronze	–	1.53	–	1.31	1.16	1.03	1.65	1.41
	Linear Ball	–	1.96	–	1.69	2.16	2.00	1.68	1.42
32	Bronze	–	–	1.96	–	–	2.94	2.45	1.96
	Linear Ball	–	–	3.92	–	–	0.98	2.94	2.45
40	Bronze	–	–	2.45	–	–	1.45	2.94	2.45
	Linear Ball	–	–	4.41	–	–	3.43	6.37	5.39
50	Bronze	–	–	3.43	–	–	2.45	4.90	4.41
	Linear Ball	–	–	7.35	–	–	5.88	10.78	8.33

To Convert Newtons-Meters to Inch-Pounds: newton-meters x 8.850 = inch-pounds

### Output Force vs Pressure

	16	20	25	32	40	50
Extend Force (N) @ 6 bar	120 (N)	187 (N)	293 (N)	472 (N)	747 (N)	1161 (N)
Retract Force (N) @ 6 bar	91 (N)	141 (N)	247 (N)	406 (N)	624 (N)	974 (N)

Max Operating Pressure: 10 bar (145 psi)  
 Operating Temperature: -20°C (-4°F) to 80°C (176°F)

To Convert Newtons to Pounds: newtons x 0.2248 = pounds

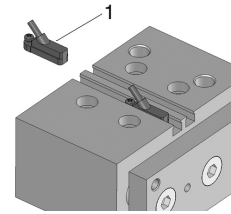


## CGT Series Compact Guide Slide

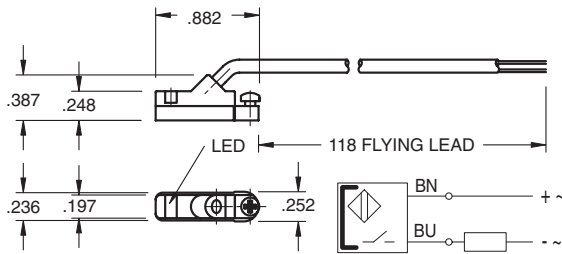
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### CGT Series Switch Information

	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



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



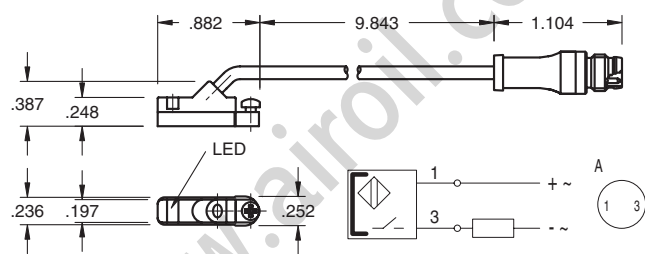
##### Sensing Data

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 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 $I_0$ at $U_e$ d./und.	(mA)	0
Observe polarity for correct LED function		

#### RSQ02 – 8mm connector

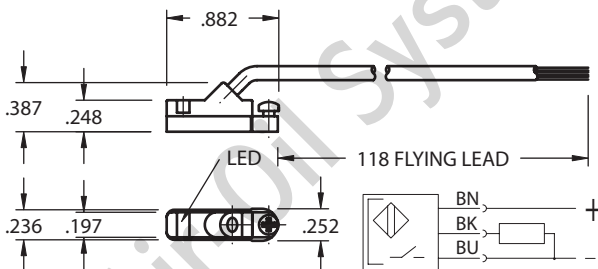


##### Mechanical Data

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	



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



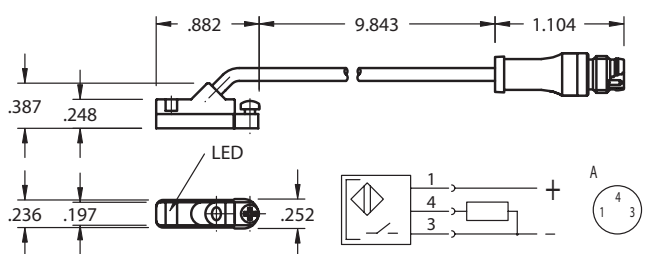
##### Sensing Data

Ambient temperature range $d$	(°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 $I_0$ at $U_e$ d./und.	(mA)	25/13
Protected against polarity reversal		YES

#### HPNPQ31 – 8mm connector



##### Mechanical Data

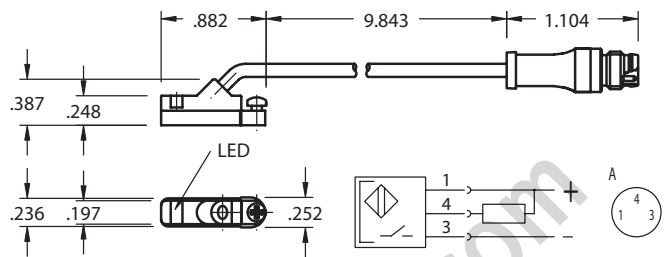
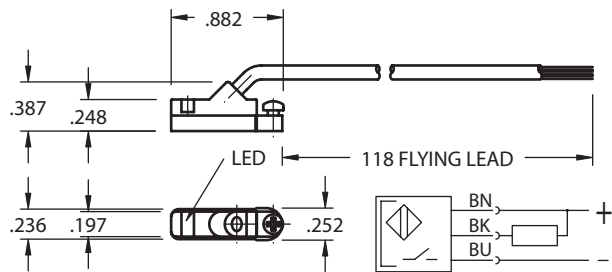
Housing material	Polyamide
Material of sensing face	Polyamide
Connection	PVC cable
Degree of Protection	IP 67
Rated shock: half-sinus, 30 g, 11 ms	
Rated vibration environment: 55 Hz, 1mm amplitude, 3 x 30	





### 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 volatage $U_i$	(V)	75 AC
Rated supply frequency	(Hz)	DC
Rated operational current $I_e$	(mA)	200
No-load supply current $I_0$ 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	

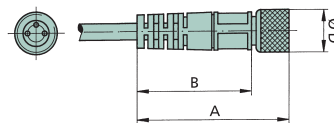


## Female Connectors for Reed Switches and Hall Effect Sensors

Dimensions (mm)

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

### Straight Type



### Elbow Type

