CATALOG

swing clamps

SC Series

Swing Clamp

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EMERSON
Industrial Automation

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SC Series
Swing Clamps

Numatics Motion Control SC-Series Swing Clamps combine linear and rotary motions. A specially machined spline internal to the piston rod develops the combined motions. When the clamp is pressurized to extend it moves linear, removing the clamp tooling from the clamped surface as not to damage the clamped surface. After completing the linear travel rotation occurs swinging the clamp arm away from the work holding area. When clamping the opposite motions occur.

A. Body

Hardcoat anodized aluminum, light weight, durable Teflon impregnated, lubricated, maximizes seal life.

B. Rod Bushing

Large bearing area provides maximum rod support side load protected.

C. Piston Rod

Hardened electroless nickel plated corrosion resistant, durable low wearing surface.

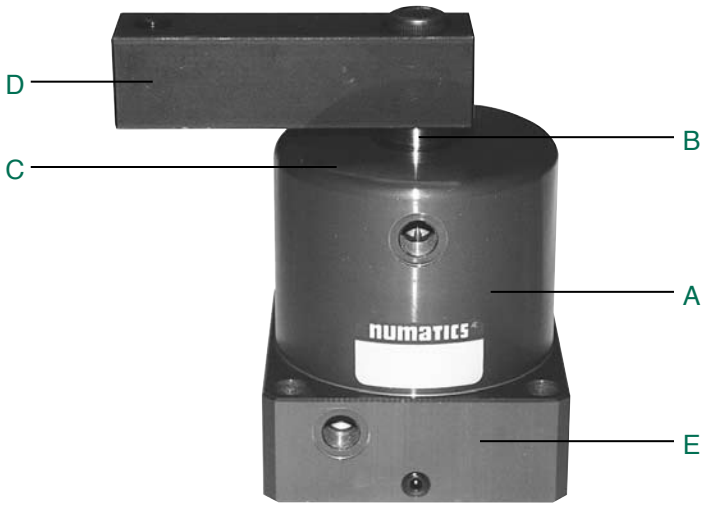
D. Clamp Arm

Taper mounted convenient arm adjustment,

360 degree adjustment.

E. Mounting Surface

Convenient location precision machined to accept standard industrial fasteners.



How to Order

SC 025 A 1 6 D X

Bore Size
025 = 25 mm
032 = 32 mm
040 = 40 mm
050 = 50 mm
063 = 63 mm

Arm Rotation
A = CW
B = CCW

Clamp Arm
1 = Single
2* = Double
*Not available on SC025.

Special Options
X = No Options

Sensing Position
A = Clamp
B = Unclamp
C = Clamp and Unclamp
D = No Sensing
E = Magnetic Piston - 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

See page 5.

Sensing Kits

STANDARD CORD SET SWITCH	PART NO.
Hall Effect PNP (Sourcing)	HPNPS31
Hall Effect NPN (Sinking)	HNPNS32
Reed Switch	RSS02
QUICK DISCONNECT CORD SET	**PART NO.**
Hall Effect PNP (Sourcing)	HPNPQ31
Hall Effect NPN (Sinking)	HNPNQ32
Reed Switch	RSQ02
90° 5 meter cable	PXC90
Straight 5 meter cable	PXCST

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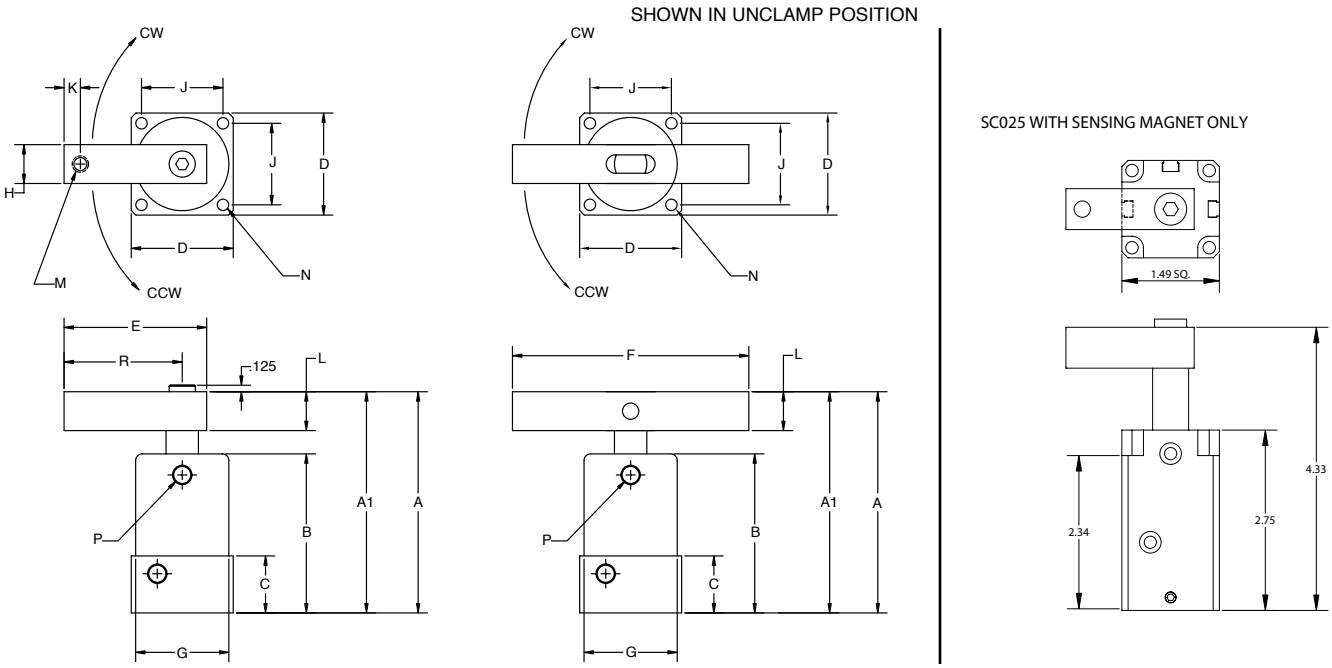
SC Series



MODEL	RETRACT A*	EXTEND A1*	B*	C	D	E	F	G	H	J	K	L	M	N	P	R
SC025**	3.27 (83.0)	4.13 (105.0)	2.55 (65.0)	0.90 (23.0)	1.49 (38.0)	1.96 (50.0)	—	1.37 (35.0)	.62 (15.9)	1.18 (30.0)	0.25 (6.5)	0.62 (15.9)	M6	.18 (4.7)	M5	1.61 (41.0)
SC032	4.00 (101.0)	5.00 (127.0)	3.07 (78.0)	1.10 (28.0)	1.96 (50.0)	2.75 (70.0)	5.51 (140.0)	1.81 (46.0)	0.74 (19.0)	1.57 (40.0)	0.31 (8.0)	0.74 (19.0)	M8	.22 (5.7)	G1/8	2.24 (57.0)
SC040	4.00 (101.0)	5.00 (127.0)	3.07 (78.0)	1.10 (28.0)	2.36 (60.0)	2.95 (75.0)	5.51 (140.0)	2.16 (55.0)	0.74 (19.0)	1.89 (48.0)	0.31 (8.0)	0.74 (19.0)	M8	.27 (6.8)	G1/8	2.46 (63.5)
SC050	4.70 (119.5)	5.89 (149.5)	3.56 (90.5)	1.22 (31.0)	2.75 (70.0)	3.34 (85.0)	6.30 (160.0)	2.55 (65.0)	1.00 (25.4)	2.24 (57.0)	0.39 (10.0)	1.00 (25.4)	M10	.27 (6.8)	G1/8	2.76 (70.0)
SC063	4.70 (119.5)	5.89 (149.5)	3.56 (90.5)	1.22 (31.0)	3.25 (83.0)	3.74 (95.0)	6.30 (160.0)	3.07 (78.0)	1.00 (25.4)	2.64 (67.0)	0.39 (10.0)	1.00 (25.4)	M10	.35 (9.0)	G1/8	3.15 (80.0)

*With sensing magnet add 0.200 in.
**SC025 with Sensing magnet includes 4 M4 x 70mm SHCS for mounting.

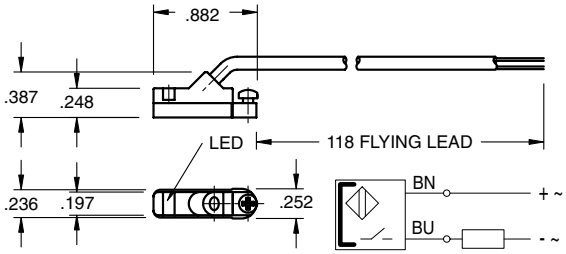
MODEL	BORE SIZE	CLAMP FORCE	CLAMP FORCE	TOTAL STROKE	CLAMPING STROKE	SWING STROKE	MAX. M2 MOMENT
SC025	25mm	52 lbs.	231 N	0.86 in. (22.0 mm)	0.43 in. (11.0 mm)	0.43 in. (11.0 mm)	101.0 in.-lb. (6.2 Nm)
SC032	32mm	93 lbs.	413 N	1.02 in. (26.0 mm)	0.51 in. (13.0 mm)	0.51 in. (13.0 mm)	266 in.-lb. (16.3 Nm)
SC040	40mm	163 lbs.	726 N	1.02 in. (26.0 mm)	0.51 in. (13.0 mm)	0.51 in. (13.0 mm)	402.0 in.-lb. (24.7 Nm)
SC050	50mm	255 lbs.	1134 N	1.18 in. (30.0 mm)	0.59 in. (15.0 mm)	0.59 in. (15.0 mm)	700.0 in.-lb. (43.0 Nm)
SC063	63mm	434 lbs.	1930 N	1.18 in. (30.0 mm)	0.59 in. (15.0 mm)	0.59 in. (15.0 mm)	1300.0 in.-lb. (79.9 Nm)

Clamp force at maximum pressure 100 PSI (6.8 bars).

SC 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



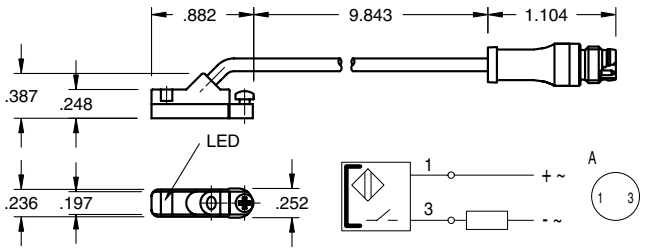
Sensing Data

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)	<= 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		

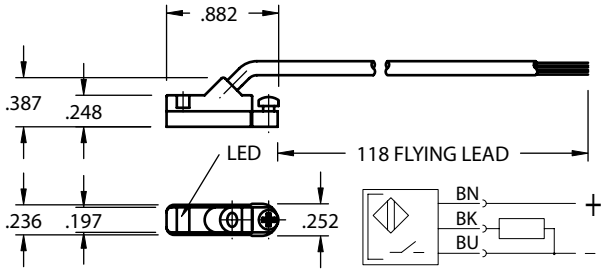
RSQ02 – 8mm connector



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		

HPNPS31 – Electronic Switch (PNP NO), flying lead



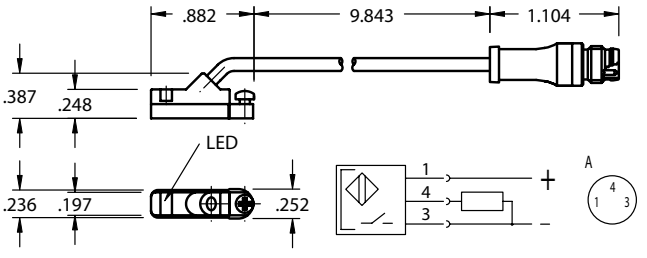
Sensing Data

Ambient temperature range $_d$	(°F/°C)	-13 to +158 (-25 to +70)
Temperature drift	(% of)	<= 0.3%/°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_o at U_e d./und.	(mA)	25/13
Protected against polarity reversal		YES

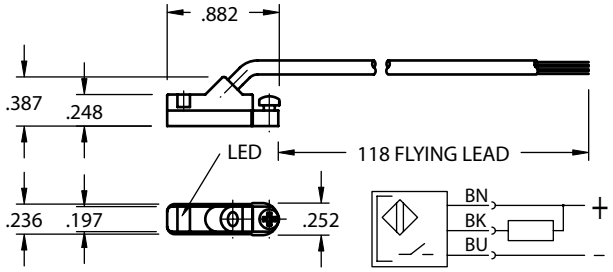
HPNPQ31 – 8mm connector



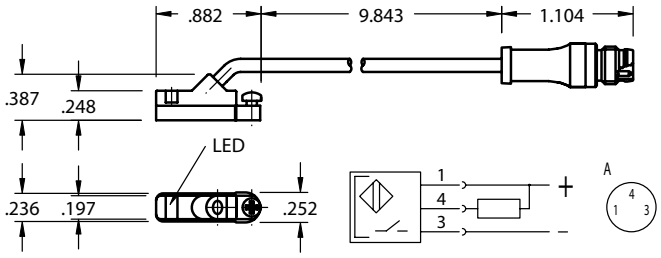
Mechanical Data

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 $_d$	(°F/°C)	-13 to +158 (-25 to +70)
Temperature drift	(% of S_r)	<= 0.3%/°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_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

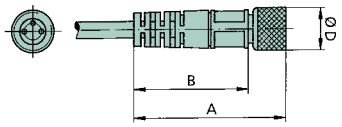
Rated shock: half-sinus, 30 g, 11 ms
Rated vibration environment: 55 Hz, 1mm amplitude, 3 x 30

Female Connectors for Reed Switches and Hall Effect Sensors

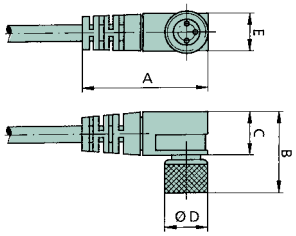
Dimensions (mm)

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

Straight Type



Elbow Type



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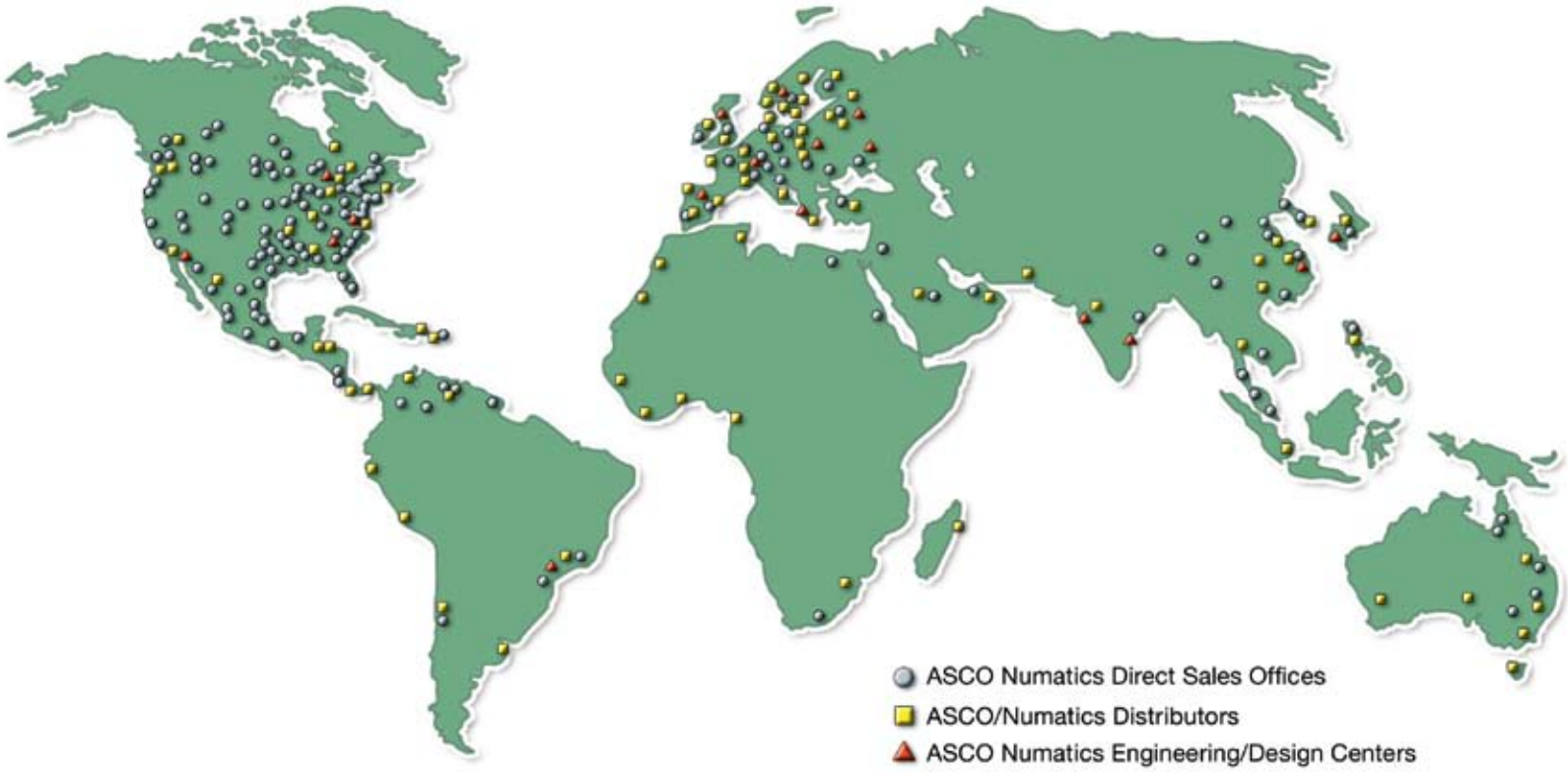

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