

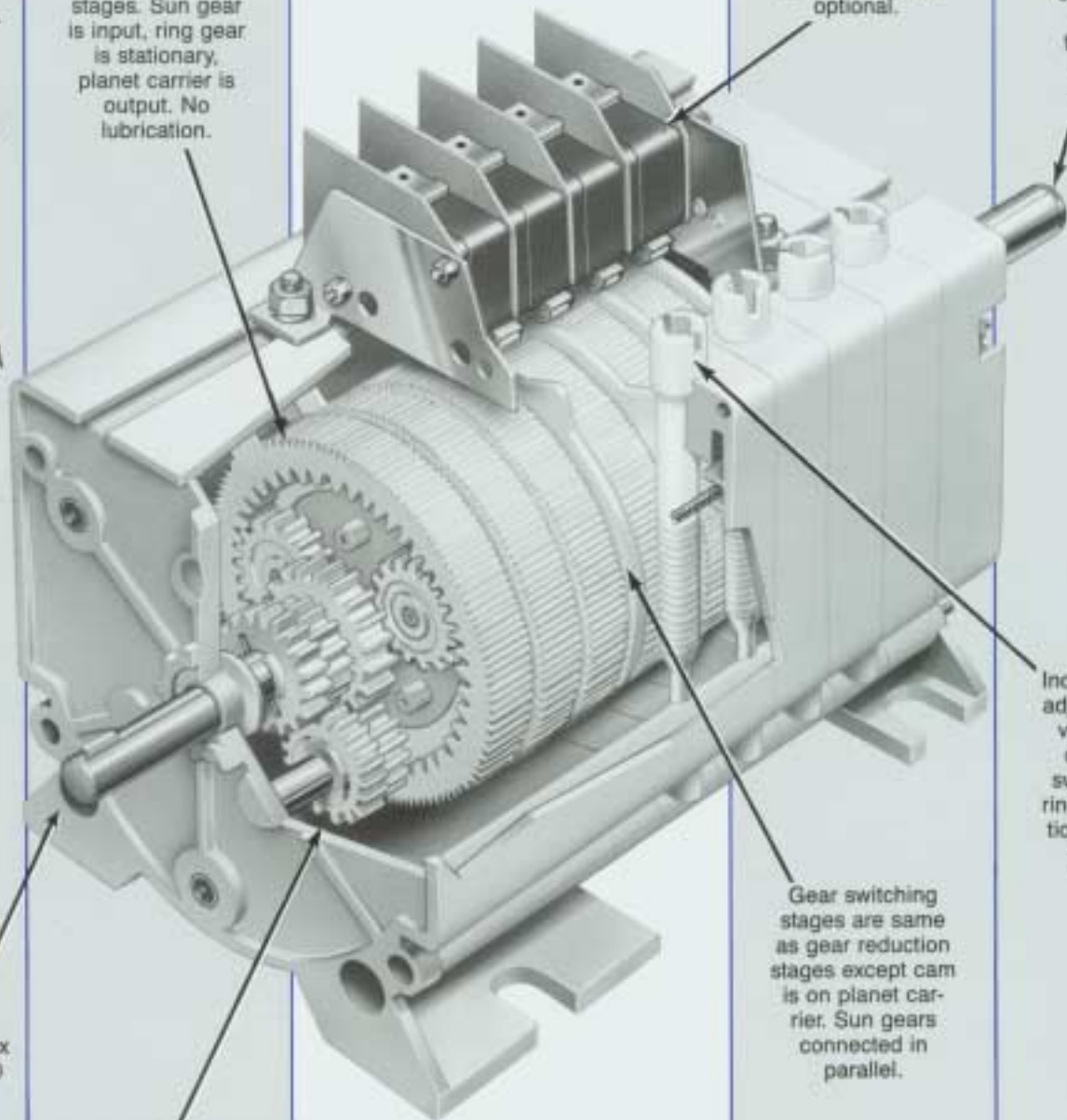
Series 51  
**Rotary Cam  
Limit Switches**

High-quality aluminum plates for lightweight and sturdy external mounting surface. NEMA-rated enclosures available.

Plastic planetary gear reduction stages. Sun gear is input, ring gear is stationary, planet carrier is output. No lubrication.

U.L. recognized snap-action switches. Supplied as SPDT, DPDT optional.

Input shaft extended for encoder, tachometer mounting (optional).



$\frac{5}{16}$ " diameter input shaft, Woodruff key. Max drive speed 1800 rpm (see p. 3).

Primary gear stages yield multiplier for input/cam shaft ratio.

Independent cam adjustment made via worm gear connected to switching stage ring. High resolution, self-locking adjustment.

Gear switching stages are same as gear reduction stages except cam is on planet carrier. Sun gears connected in parallel.



*"Simple Solutions to  
Problems in Motion"*

**Stromag, Inc.**

# Rotary Cam Limit Switches



## Stromag Rotary Cam Limit Switches with up to eight switching stages standard.

Each switch point independently adjustable via self-locking worm gear.

The Stromag Series 51 Switches are compact, lightweight units which can be conveniently used to control the movement limits of mechanical presses, door operators, hoists, loaders, valves, handling fixtures, windows and many other reciprocating mechanical devices. The reduction gear stages are a classic planetary gear design. The sun gear is the input, the ring gear is stationary, and the planet carrier is the output. The switching stages are similarly arranged. The ring gear is held from turning by a worm gear. The worm gear is rotatable and provides an adjustable switch point. All of the switch steps have a common sun gear. The sun gears are in parallel and are driven from the last reduction stage. Consequently, each switch step can be individually adjusted. Input-to-cam switching reduction is accomplished by combining planetary reduction stages of 4.28:1. Additionally, two primary gear stages can be added for ratios in between.

## Design Features

- Compact, lightweight construction.
- Self-locking, high-resolution, independent switching adjustment—one turn of adjusting screw equals 2.46° of cam movement.
- Switching point can be adjusted while unit is running.
- Thru shaft for mounting encoder, tachometer, etc.
- Up to eight cams/switches standard—more switching stages available.
- Many types of enclosures are available: explosion proof, NEMA rated.
- Ratios up to 880:1 standard.
- Master adjustment to adjust all switches available.
- Maintenance-free plastic gears. No lubrication required; lightly preloaded for minimal backlash.
- UL recognized switches with SPDT contacts standard; DPDT contacts optional.

## Ordering Information

When ordering it is necessary to specify:

**Model, Type:** RLS-51 (Rotary Limit Switch, Series 51).

**Ratio:** # turns of input shaft to 1 turn of cam (see Max Useable Revs column of table).

**Contacts:** SPDT standard, DPDT optional.

**# Cams/Switches:** Typically, one switch per cam.

**Enclosure:** Open = 0; 1, 4, 5, 7, 12 = equivalent NEMA rated.

SPDT	DPDT
10 x 10 <sup>6</sup> cycles	10 x 10 <sup>6</sup> cycles
10 A @ 125/250 VAC	10 A @ 125 VAC,
5 A @ 125 VDC,	5 A @ 250 VAC
25 A @ 250 VDC	5 A @ 125 VDC,
	25 A @ 250 VDC

RLS	51	75	SP	8	0
↑	↑	↑	↑	↑	↑
Model	Type	Ratio	Cont.	Cams	Encl.

## Technical Specifications

# Cams/ Switches	Input Revs	Cam Revs	Input Shaft			Turns to Reset
			Max Useable Revs	Angular Motion 1 Rev = Cam*	Max RPM	
2	4.28	1	4.1	84	1000	0.006
2	7.083	1	6.5	50.8	1200	0.009
2	11.56	1	11.0	31.14	1500	0.016
2	18.36	1	17.5	19.6	1800	0.025
2	30.35	1	29.0	11.86	1800	0.042
2	49.54	1	48.0	7.27	1800	0.068
2	78.68	1	75.0	4.57	1800	0.109
2	130.05	1	125.0	2.77	1800	0.18
2	212.27	1	205.0	1.69	1800	0.29
2	337.14	1	323.0	1.06	1800	0.47
2	557.28	1	540.0	.65	1800	0.77
2	909.59	1	880.0	.04	1800	1.26
4	4.28	1	4.1	84	1000	0.006
4	7.083	1	6.5	50.8	1200	0.009
4	11.56	1	11.0	31.14	1500	0.016
4	18.36	1	17.5	19.6	1800	0.025
4	30.35	1	29.0	11.86	1800	0.042
4	49.54	1	48.0	7.27	1800	0.068
4	78.68	1	75.0	4.57	1800	0.109
4	130.05	1	125.0	2.77	1800	0.18
4	212.27	1	205.0	1.69	1800	0.29
4	337.14	1	323.0	1.06	1800	0.47
4	557.28	1	540.0	.65	1800	0.77
4	909.59	1	880.0	.04	1800	1.26
6	4.28	1	4.1	84	1000	0.006
6	7.083	1	6.5	50.8	1200	0.009
6	11.56	1	11.0	31.14	1500	0.016
6	18.36	1	17.5	19.6	1800	0.025
6	30.35	1	29.0	11.86	1800	0.042
6	49.54	1	48.0	7.27	1800	0.068
6	78.68	1	75.0	4.57	1800	0.109
6	130.05	1	125.0	2.77	1800	0.18
6	212.27	1	205.0	1.69	1800	0.29
6	337.14	1	323.0	1.06	1800	0.47
6	557.28	1	540.0	.65	1800	0.77
6	909.59	1	880.0	.04	1800	1.26
8	4.28	1	4.1	84	1000	0.006
8	7.083	1	6.5	50.8	1200	0.009
8	11.56	1	11.0	31.14	1500	0.016
8	18.36	1	17.5	19.6	1800	0.025
8	30.35	1	29.0	11.86	1800	0.042
8	49.54	1	48.0	7.27	1800	0.068
8	78.68	1	75.0	4.57	1800	0.109
8	130.05	1	125.0	2.77	1800	0.18
8	212.27	1	205.0	1.69	1800	0.29
8	337.14	1	323.0	1.06	1800	0.47
8	557.28	1	540.0	.65	1800	0.77
8	909.59	1	880.0	.04	1800	1.26