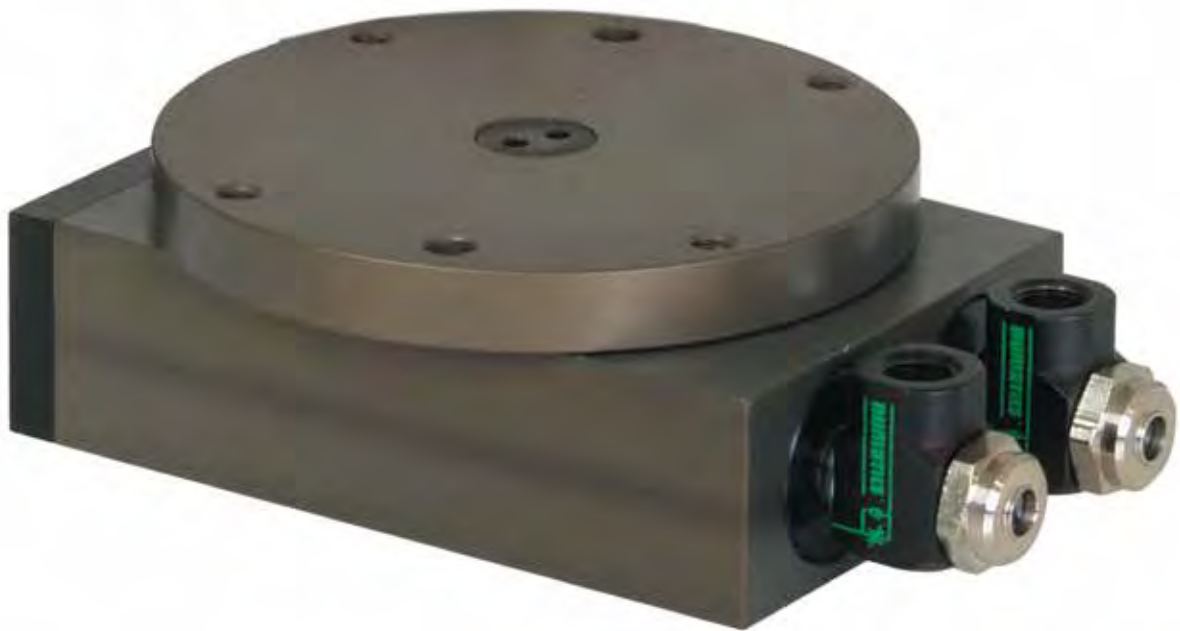


numatics®

LR Series

Low Profile Rotary Actuator



www.numatics.com

LR Series

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The LR series rotary actuator is a low profile rack and pinion design. Two independent pistons drive their corresponding racks against the pinion thereby rotating the platform.

A. Body

Hardcoated anodized aluminum PTFE impregnated, lightweight, high strength to weight ratio.

B. Rotary Platform

Hardcoated anodized aluminum, durable. Supported by two bearings, one on each side of the pinion shaft, providing superior dynamic load capacity.

C. Stroke Adjustment

Built in rotary hard stops protect rotary platform from over travel. External stroke adjust screws with locking set screws provide fine tuned rotary position.

D. Flow Controls

Built in design is easily adjustable, provides precise deceleration speed control in both directions.

E. Position Sensing

Proximity switch sensors available for rotary position sensing.

F. Shocks

LR60, LR125 & LR270 come standard with internal shock absorbers.

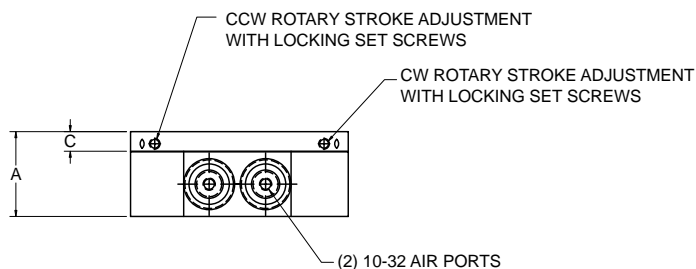
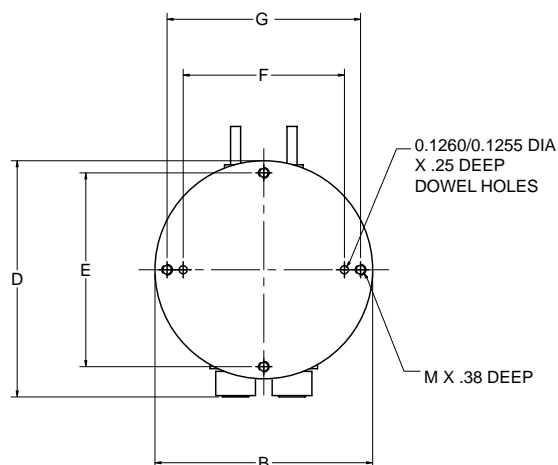
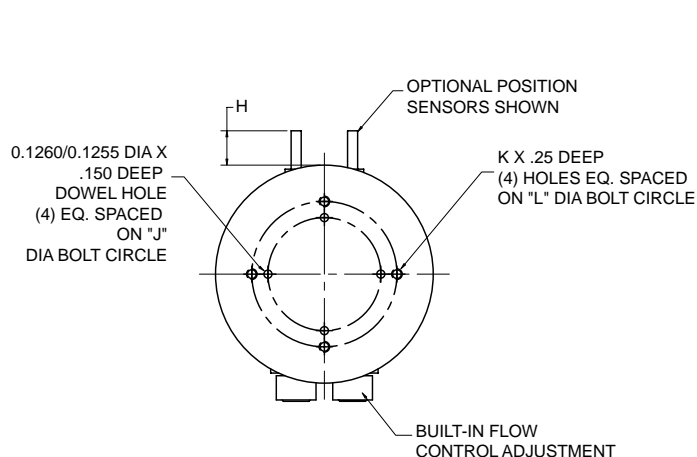


How to Order

	LR	06	A	1	6	D	4	X	
Torque Rating									Special Options
06 = 6 in.-lb.									M = Metric
20 = 21 in.-lb.									Q = No Switch Cables
60 = 62.5 in.-lb.									X = Standard
60M* = 62.5 in.-lb.									
125 = 125 in.-lb.									Shock Absorbers
125M* = 125 in.-lb.									3 = Clockwise and Counter Clockwise Shock (standard on LR-60, LR-125 & LR-270)
270 = 270 in.-lb.									4 = No Shocks (shocks are not available on LR-06 and LR-20)
*Manifold option, contact factory.									
Rotation									Sensing Position
A = 90°									A = Single Position Clockwise
B = 180°									B = Single Position Counter Clockwise
									C = Clockwise and Counter Clockwise
									D = No Sensing
Seal Option									Sensing Type
1 = Buna-N									Standard Cord Set
									4 = Prox Switch - PNP (sourcing)
									5 = Prox Switch - NPN (sinking)
									6 = No Sensing
									Quick Disconnect Cord Set
									W = Prox Switch - PNP (sourcing) Straight
									U = Prox Switch - PNP (sourcing) 90 Deg.
									Prox switches are 5 mm diameter.

When ordering additional switches:

Switch Description	Standard Part No.	Quick Disconnect Part No.
Prox Switch - PNP (Sourcing)	PROX-5FL2-P	PROX-5QDS-P
Prox Switch - NPN (Sinking)	PROX-5FL2-N	Not Available
Quick Disconnect Cable	—	PXCST
90° 5 meter cable	—	PXC90
Bronze switch housing for LR & RM Rotaries	—	RSH05

Dimensions: Inches
LR06 & LR20 Series


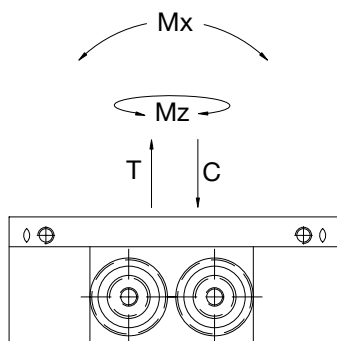
See page 7.

Dimensions

	LR06	LR20
A	0.969	1.313
B	2.250	3.375
C	0.281	0.303
D	2.625	3.656
E	N/A	3.000
F	1.624/1.626	2.499/2.501
G	2.000	3.000
H	0.600	0.600
J	0.750	1.750
K	#6-32	#8-32
L	1.250	2.250
M	#6-32	#8-32

Specifications

	LR06	LR20
Max. Payload	1.0 lbs	3.0 lbs
Max. Air Pressure	120 PSI	120 PSI
Torque Output @ 100 PSI	6.5 in.-lbs.	21.2 in.-lbs.
Max Payload Inertia	0.012 lb.-in ²	0.012 lb.-in ²
Cylinder Bore Dia.	2 @ 0.5 in.	2 @ 0.75 in.
Displacement	0.3 cu.in.	0.72 cu.in.
Repeatability	0.015 degrees	0.015 degrees
Max. Rotation	180 degrees	180 degrees
Degrees Adjustment	+/- 5 degrees	+/- 5 degrees
Max. Speed for 180 degrees	0.3 sec.	0.4 sec.
Unit Weight	7 oz.	1.2 lbs.

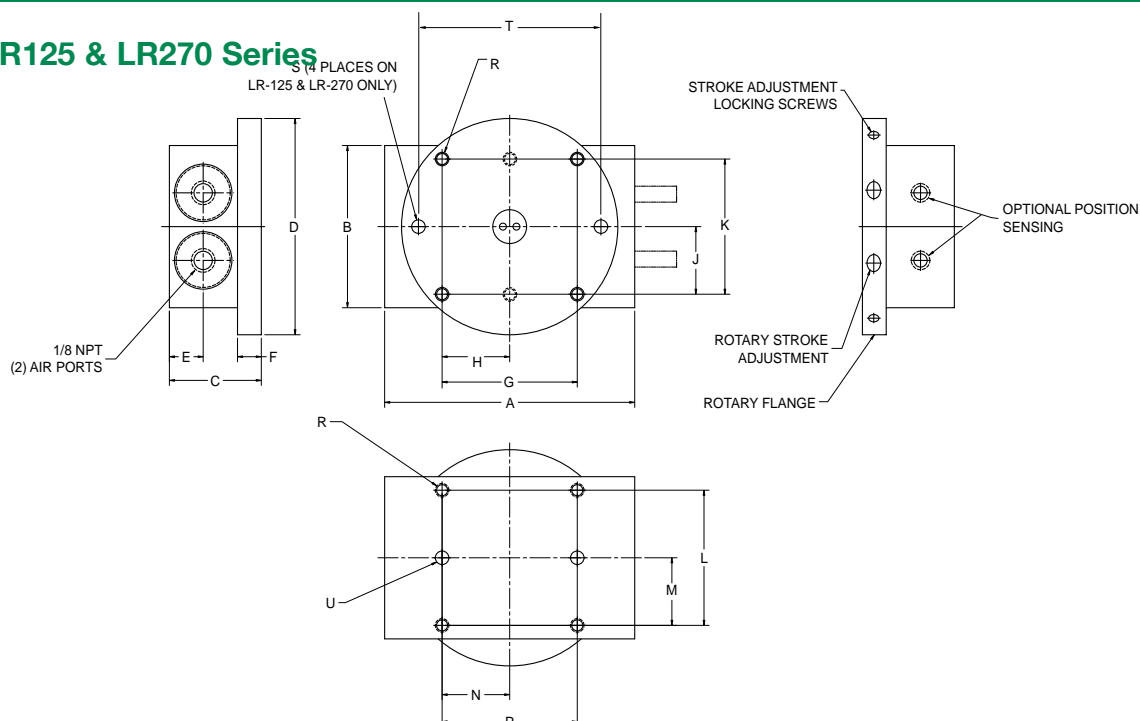

Load Capacity*

	Static Condition		Dynamic Condition	
	LR06	LR20	LR06	LR20
C-compression	250 lbs.	350 lbs.	50 lbs.	75 lbs.
T-tension	50 lbs.	75 lbs.	12 lbs.	20 lbs.
Mx	100 in.-lbs.	200 in.-lbs.	25 in.-lbs.	50 in.-lbs.
Mz	100 in.-lbs.	200 in.-lbs.	25 in.-lbs.	50 in.-lbs.

* Dynamic rating applicable with external shocks or stops.

Dimensions: Inches

LR60, LR125 & LR270 Series



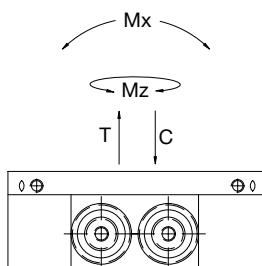
Dimensions

Model	LR60	LR125	LR270
A	4.625	5.500	8.500
B	3.000	3.500	4.625
C	1.700	2.125	2.765
D	4.000	4.470	5.125
E	0.625	0.750	1.000
F	0.440	0.609	0.750
G	2.500	2.750	3.000
H	1.250	1.375	1.500
J	2.500	1.375	1.500
K	1.250	2.750	3.000
L	2.500	3.000	4.000
M	1.250	1.500	2.000
N	1.250	1.500	2.000
P	2.500	3.000	4.000
R	1/4-20 X .43 DP	5/16-18 X .43 DP	3/8-16 X .75 DP
S	0.2505/0.2510 X 0.38 DP	0.2505/0.2510 X 0.38 DP	0.3750/0.3755 X .25 DP
T	3.38	2.75	3.000
U	0.2505/0.2510 X 0.38 DP	0.3130/0.3135 X 0.37 DP	0.3750/0.3755 X .50 DP

Specifications

Model	LR60	LR125	LR270
Max. Payload	8.0 lbs.	15.0 lbs.	30.0 lbs.
Max. Air Pressure	120 psi	120 psi	120 psi
Torque Output @ 100 psi	61 in.-lbs.	126 in.-lbs.	310 in.-lbs.
Max. Payload Inertia	0.041 lbs.-in./sec. ²	0.1 lbs.-in./sec. ²	0.254 lb.-in./sec. ² (squared symbol)
Cylinder Bore Dia.	2 @ 1 in.	2 @ 1.25 in.	2 @ 1.62 in.
Displacement	2.06 cu.in.	3.855 cu.in.	9.77 cu. in.
Repeatability	0.018 degrees	0.018 degrees	0.018 degrees
Max. Rotation	180 degrees	180 degrees	180 degrees
Degrees Adjustment	+/- 5 degrees	+/- 5 degrees	+/- 5 degrees
Max. Speed for 180 degrees	0.35 sec.	0.4 sec.	0.4 sec.
Unit Weight	2.9 lbs.	5 lbs.	8.5 lbs.

Load Capacity*



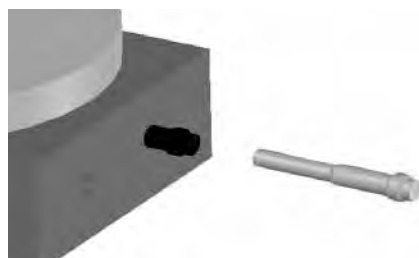
	Static Condition			Dynamic Condition		
	LR60	LR125	LR270	LR60	LR125	LR270
C-Compression	500 lbs.	1000 lbs.	2000 lbs.	100 lbs.	200 lbs.	400 lbs.
T-Tension	100 lbs.	200 lbs.	800 lbs.	20 lbs.	40 lbs.	160 lbs.
Mx	300 in.-lbs.	500 in.-lbs.	1000 in.-lbs.	75 in.-lbs.	100 in.-lbs.	200 in.-lbs.
Mz	300 in.-lbs.	500 in.-lbs.	1000 in.-lbs.	75 in.-lbs.	100 in.-lbs.	200 in.-lbs.

* Dynamic rating applicable with external shocks or stops.

LR Series Switch Information

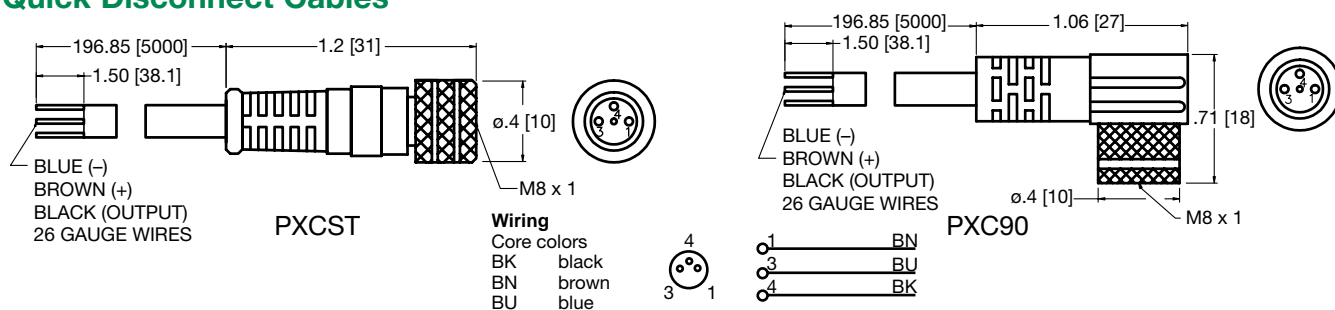
LR Series Rotary

Bore	Bracket P/N
LR06	RSH05
LR20	RSH05
LR60	RSH05
LR125	RSH05
LR270	RSH05



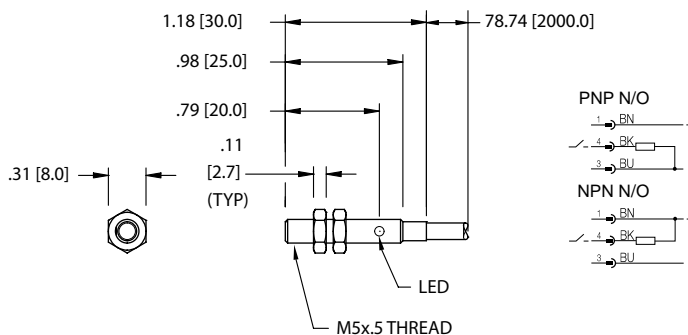
Sensor Description	Standard Cord Set	Quick Disconnect
Prox PNP	PROX-5FL2-P	PROX-5QDS-P
Prox NPN	PROX-5FL2-N	Not Available

Quick Disconnect Cables



Order Code	Type	Operating Voltage	Current Rating	Cable Material	Protection	Connector
PXCST	Straight 5 m Cable (3 x 26 Gauge wire)	60 AC/75 DC	3 A	PUR	IP 68, III	M8
PXC90	90° 5 m Cable (3 x 26 Gauge wire)	60 AC/75 DC	3 A	PUR	IP 68, III	M8

Prox Switch (NPN NO) Flying Lead - PROX-5FL2-N Prox Switch (PNP NO) Flying Lead - PROX-5FL2-P



Electrical Design
Output
Operating Voltage
Current Rating
Short-Circuit Protection
Overload Protection
Reverse Polarity Protection
Voltage Drop
Current Consumption
Real Sensing Range
Switching Frequency
Ambient Temperature
Protection
Switch-Point Drift
Hysteresis
Operating Distance
Correction Factor

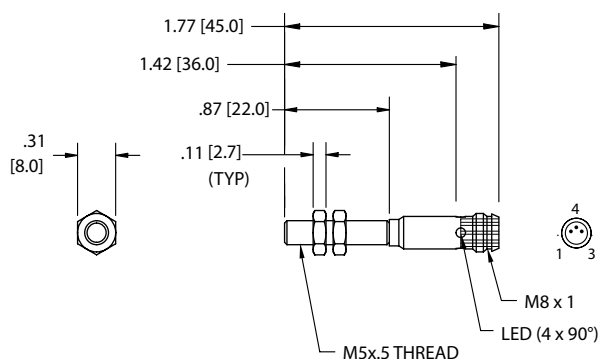
Housing Material
Function Display Switching Status
Connection

3-Wire DC PNP/NPN
Normally Open
10-36 VDC
100 mA
Yes (Non-Latching)
Yes
Yes
< 2.5V
< 15 mA @ 24V
.8mm ± 10%
> 2000 Hz
-25°C to 70°C
IP 65, III
-10 - 10% OF Sr
1 - 15% OF Sr
0 - .65mm
Mild Steel=.1, Stainless Steel=.7,
Brass=.5, Alum.=.4, Copper=.3
Housing; Stainless Steel: POM
Red LED
PVC Cable, 2m, 3 x .14mm2

*Switches are not designed for wet environments. Please see your distributor for additional information.

Information subject to change without notice. For ordering information or regarding your local sales office visit www.numatics.com.

Prox Switch (PNP NO) 8 mm connector - PROX-5QDS-P



Electrical Design
Output
Operating Voltage
Current Rating
Short-Circuit Protection
Overload Protection
Reverse Polarity Protection
Voltage Drop
Current Consumption
Real Sensing Range
Switching Frequency
Ambient Temperature
Protection
Switch-Point Drift
Hysteresis
Operating Distance
Correction Factor

Housing Material
Function Display Switching Status
Connection
Remarks
Accessories
Agency Approvals

3-Wire DC PNP
Normally Open
10-36 VDC
100 mA
Yes (Non-Latching)

Yes
Yes

< 2.5V

< 15 mA @ 24V

.8mm ± 10%

> 2000 Hz

-25°C to 70°C

IP 65, III

-10 - 10% OF Sr

1 - 15% OF Sr

0 - .65mm

Mild Steel=1, Stainless Steel=.7,

Brass=.5, Alum.=.4, Copper=.3

Housing; Stainless Steel: POM

Red LED (4 x 90°)

M8 Connector

cULus-Class 2 Source Required

2 Lock Nuts



*Switches are not designed for wet environments. Please see your distributor for additional information.



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