

# NUMATICS®

## LC Series

Light Duty Slide



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**EMERSON**  
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**BCAE**  
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青岛秉诚自动化设备有限公司  
地址：中国·青岛市重庆南路99号海尔云街甲3号楼7F

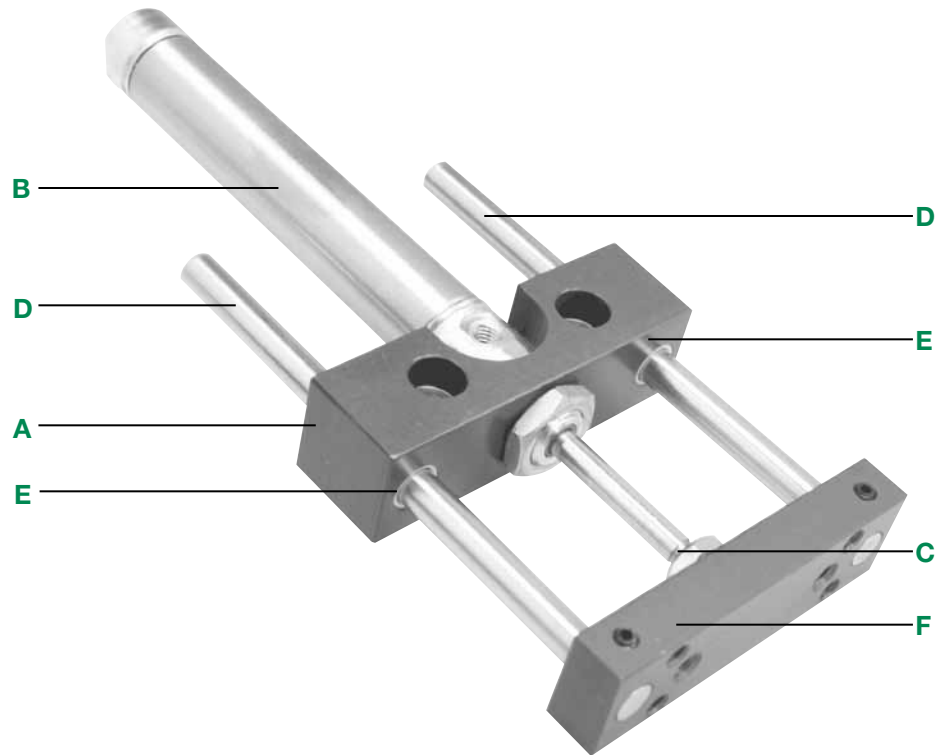
服务热线：4006-918-365  
网址：<http://www.ivalve.cc>

传真：(86-532)585-10-365  
Email：[sales@bechinas.com](mailto:sales@bechinas.com)

## LC Series

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The “LC” series provides guided linear motion at a lower cost. External cylinder is mounted rigidly to the cross body which drives the tool plate. The tool plate motion is guided by two hardened linear rods. The linear rods are supported by engineered polymer plastic bushings.



**A. Body:**

Hardcoat anodized aluminum ..... lightweight, durable, high strength to weight ratio  
 Easy access mounting ..... drilled and counterbored for flush mount

**B. Air Cylinder:**

Standard stainless steel body and piston rod..... corrosion resistant  
 Standard with magnetic piston..... sensing options, reed, hall effect and proximity able to be added in the field  
 Optional cushion control ..... decelerated motion on 1-1/16 bore and greater

**C. Alignment Coupler:**

360 degrees of float ..... isolates air cylinder from destructive side loads maximum cylinder life

**D. Guide Shafts:**

Hardened steel..... hardness Rc60-65, low friction, long life  
 Optional stainless steel..... hardness Rc50-55, corrosion resistant

**E. Bushings:**

Engineered plastic polymer ..... low friction, high durability, no lubrication required  
 Maximum rigidity..... superior rod diameter to bushing length ratio

**F. NuMate Mounting:**

Direct mount mounting system ..... eliminates adapter and transition plate  
 Patent No. 5,560,281 ..... mounts directly to other Numatics Motion Control products

How to Order

LC 075 04 H 1 6 D XX

**Bore Sizes**

- 056 = 9/16 Inch
- 075 = 3/4 Inch
- 106 = 1-1/16 Inches
- 150 = 1-1/2 Inches

**Standard Stroke**

- 01 = 1"
- 02 = 2"
- 03 = 3"
- 04 = 4"
- 05 = 5"
- 06 = 6"

**Guide Shaft Type**

- H = Hardened Steel Shafts
- S = Stainless Steel Shafts

**Cylinder Type**

- 1 = Buna-N Seals
- 2 = FKM Seals (no magnet)
- 3\* = Buna-N with Cushions\*
- 4\*\* = FKM Seals with Magnet

\*Head cushion factory set, see page 5 for dimensional changes.  
Available on bore sizes 106 and 150.

\*\* Max. Temperature of slide is 140° F.

**Example order:**

Part Number: LC07504H16DXX\*

Part Description: 3/4" diameter bore x 4" stroke, buna seals, hardened steel guide shafts, no switches, no special options.

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

**Options**

- XX = No Options
- SE\* = Stop Collars for Extend Stroke Adjust
- SR = Stop Collars for Retract Stroke Adjust
- SB\* = Stop Collars for Extend and Retract
- \*Stop collars will be stainless when guide shafts are stainless

**Sensing Position**

- A = Single Position Extend
- B = Single Position Retract
- C = Extend and Retract
- D = No Sensing

**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.

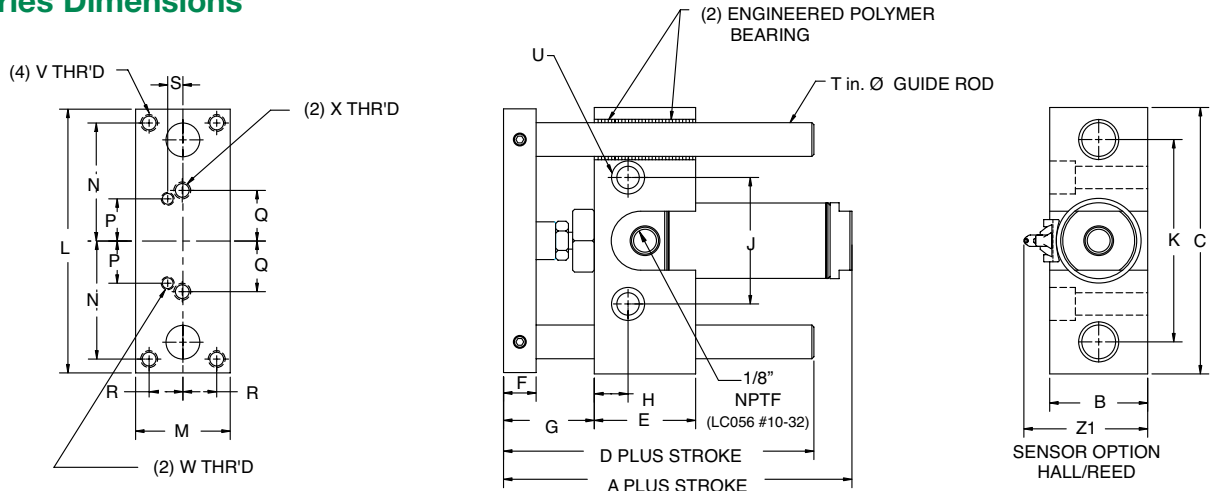
Reference the sensing section of the catalog for sensing specifications.

**When ordering additional accessories:**

Switch Description	Standard Part No.	Quick Disconnect Part No.
Hall Effect - PNP (Sourcing)	PNP-FL2-00-U	PNP-QDS-M8-U
Hall Effect - NPN (Sinking)	NPN-FL2-00-U	NPN-QDS-M8-U
Reed Switch	REED-FL2-00	REED-QDS-M8U
90° 5 meter cable	-	PXC90
Straight 5 meter cable	-	PXCST

\*Bands and tracks required for mounting.  
Reference bracket in the Switch Application Chart in the Sensor section.

## LC Series Dimensions



	LC056	LC075	LC106	LC150
A	2.97	3.75	4.16	4.75
B	0.75	0.98	1.45	1.75
C	2.50	3.40	3.95	5.00
D	2.11	2.78	3.60	3.94
E	0.75	1.00	1.50	1.50
F	0.36	0.47	0.48	0.625
G	0.86	1.09	1.34	1.56
H	0.375	0.50	0.50	0.50
J	1.25	1.50	1.875	2.25
K	2.00	2.50	3.00	3.75
L	2.46	3.36	3.91	4.97
M	0.70	0.94	1.40	1.72
N	0.75	1.50	1.75	2.25
P	-	0.50	0.625	0.750
Q	0.625	0.625	0.75	0.937
R	0.218	0.312	0.50	0.625
S	-	0.187	0.35	0.375
T	0.25	0.375	0.50	0.625
U	c'bore for #10 SHCS	c'bore for 1/4 SHCS	c'bore for 5/16 SHCS	c'bore for 5/16 SHCS
V	#8-32 thru	#10-32 thru	1/4-20 thru	5/16-18 thru
W	-	#6-32 Thru	#10-32 thru	1/4-20 thru
X	#10-32 thru	#10-32 thru	1/4-20 thru	5/16-18 thru
Z1	1.16	1.35	1.76	2.13

Cushion Cylinder Option				
	LC056	LC075	LC106	LC150
A	-	-	4.41	4.94

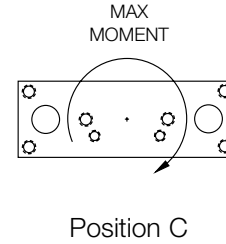
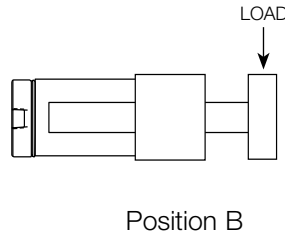
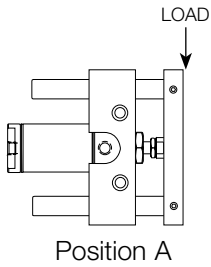
## Unit Weight Table

	LC056	LC075	LC106	LC150
Base Unit Weight	0.33	0.78	1.96	3.48
Adder/inch of stroke	0.05	0.11	0.15	0.28
Add base weight to inch adder X stroke	Sample weight calculation: Model LC075 W/3", .78 + (3x .11)=1.11lbs			

## Unit Output Force Table

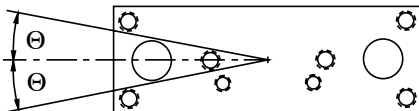
	LC056	LC075	LC106	LC150
Extend Force (lbs)	0.24	0.44	0.88	1.76
Retract Force (lbs)	0.22	0.39	0.81	1.61
Multiply force factor X input pressure in psi	Sample output force calculation: Model LC075 extend force @ 70psi, 0.44 x 70=30.8lbs			

### Maximum Dynamic Load and Deflection Ratings

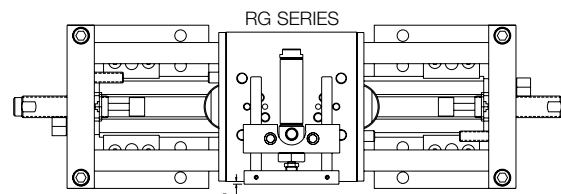
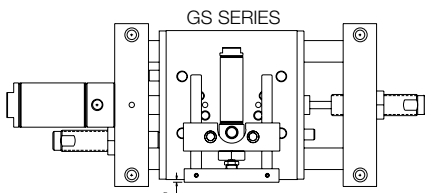
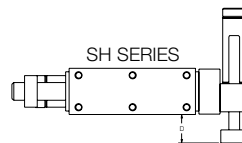
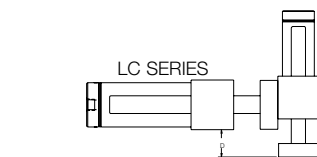


Stroke	LC056			LC075			LC106			LC150		
	Pos A&B Load (lbs)	Pos A&B Deflection (in)	Pos C Max Moment	Pos A&B Load (lbs)	Pos A&B Deflection (in)	Pos C Max Moment	Pos A&B Load (lbs)	Pos A&B Deflection (in)	Pos C Max Moment	Pos A&B Load (lbs)	Pos A&B Deflection (in)	Pos C Max Moment
1	3.00	0.0006	3 inlb	3.00	0.0002	5 inlb	8.0	0.0002	8 inlb	12.0	0.0015	12 inlb
2	1.50	0.0010	3 inlb	2.50	0.0004	5 inlb	4.0	0.0003	8 inlb	6.0	0.0020	12 inlb
3	1.00	0.0017	3 inlb	1.67	0.0007	5 inlb	2.7	0.0004	8 inlb	4.0	0.0028	12 inlb
4	0.75	0.0025	3 inlb	1.25	0.0009	5 inlb	2.0	0.0005	8 inlb	3.0	0.0038	12 inlb
5	0.60	0.0035	3 inlb	1.00	0.0013	5 inlb	1.6	0.0007	8 inlb	2.4	0.0050	12 inlb
6	0.50	0.0047	3 inlb	0.84	0.0017	5 inlb	1.3	0.0009	8 inlb	2.0	0.0064	12 inlb

### Rotational Clearance



LC056	LC075	LC106	LC150
+/- 0.17°	+/- 0.15°	+/- 0.15°	+/- 0.15°



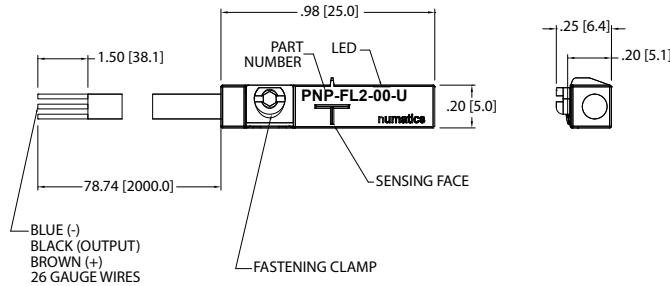
### NuMate™ Compatibility Table & Edge Reference

	LC056	LC075	LC106	LC150	SH056	SH075	SH106	SH150	SH200	GS075	GS106	GS150	GS200	RG25B	RG32C	RG32D	B04	B06	B08
LC056	0.86	0.75	0.86	-	0.73	0.92	-	-	-	-0.28	-0.14	-	-	-0.14	-	-	1.02	0.92	0.93
LC075	-	-	0.86	0.71	1.09	0.96	1.00	-	-	-0.54	-0.35	0.09	-	-0.35	0.09	-	-	-	0.97
LC106	-	-	-	0.96	-	-	1.09	1.15	-	-	-0.85	-0.41	-0.54	-0.85	-0.41	-0.54	-	-	-
LC150	-	-	-	-	-	-	-	0.93	1.18	-	-	-0.89	-1.02	-	-0.89	-1.02	-	-	-

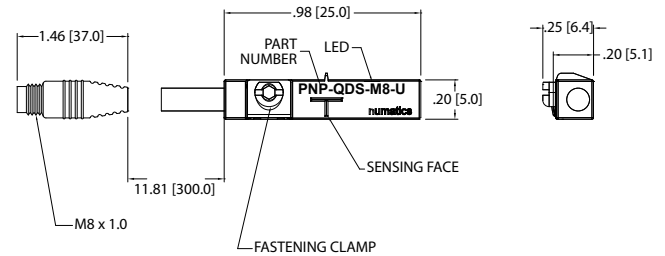
\*All Dimensions in these charts are in inches

## Sensing Part Numbers

### PNP-FL2-00-U



### PNP-QDS-M8-U

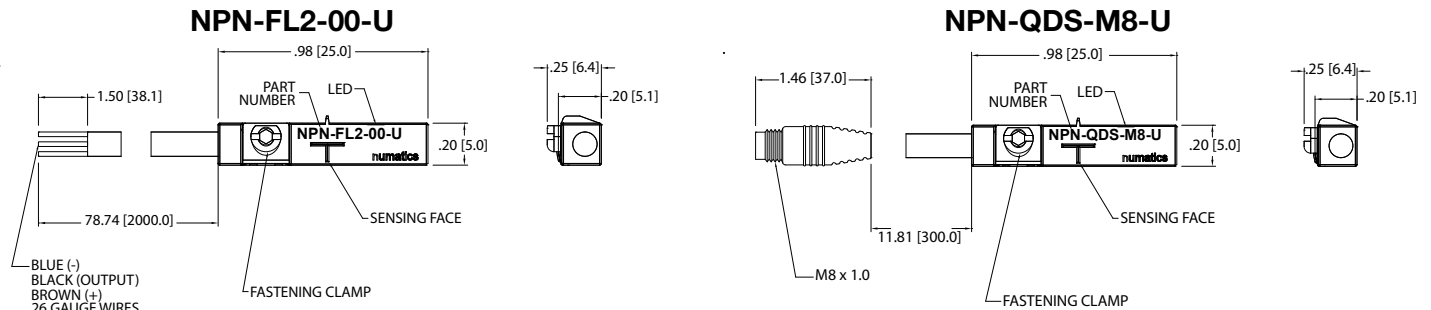


ELECTRICAL DESIGN	DC PNP
OUTPUT	Normally Open
OPERATING VOLTAGE	10-30 VDC
CURRENT RATING	100 mA
SHORT-CIRCUIT PROTECTION	Yes
OVERLOAD PROTECTION	Yes
REVERSE POLARITY PROTECTION	Yes
VOLTAGE DROP	< 2.5 V
CURRENT CONSUMPTION	< 12 mA
REPEATABILITY	< .2mm
POWER-ON DELAY TIME	< 30 ms
SWITCH FREQUENCY	> 3000 Hz
AMBIENT TEMPERATURE	-25°C to 85°C
PROTECTION	IP 67, III
HYSTERESIS	1.0mm
MAGNETIC SENSITIVITY	2.0 mT
TRAVEL SPEED	> 10 m/s
HOUSING MATERIAL	PA (Polyamide) Black; Fastening Clamp: Stainless Steel
FUNCTION DISPLAY SWITCHING STATUS	Yellow LED
CONNECTION	Flying Leads, Pur Cable (2m Long, 3 x26 Gauge Wire)
REMARKS	Clamping Screw with Combined Slot/Hexagon Socket Head AF 1.5 cULus - Class 2 Source Required
ACCESSORIES	Rubber Placeholder, Cable Clip, and Cut Sheet To Be Provided with Every Switch
AGENCY APPROVALS	

ELECTRICAL DESIGN	DC PNP
OUTPUT	Normally Open
OPERATING VOLTAGE	10-30 VDC
CURRENT RATING	100 mA
SHORT-CIRCUIT PROTECTION	Yes
OVERLOAD PROTECTION	Yes
REVERSE POLARITY PROTECTION	Yes
VOLTAGE DROP	< 2.5 V
CURRENT CONSUMPTION	< 12 mA
REPEATABILITY	< .2mm
POWER-ON DELAY TIME	< 30 ms
SWITCH FREQUENCY	> 3000 Hz
AMBIENT TEMPERATURE	-25°C to 85°C
PROTECTION	IP 67, III
HYSTERESIS	1.0mm
MAGNETIC SENSITIVITY	2.0 mT
TRAVEL SPEED	> 10 m/s
HOUSING MATERIAL	PA (Polyamide) Black; Fastening Clamp: Stainless Steel
FUNCTION DISPLAY SWITCHING STATUS	Yellow LED
CONNECTION	M8 Connector (Snap Fit) , Pur Cable (.3 m)
REMARKS	Clamping Screw with Combined Slot/Hexagon Socket Head AF 1.5 cULus - Class 2 Source Required
ACCESSORIES	Rubber Placeholder, Cable Clip, and Cut Sheet To Be Provided with Every Switch
AGENCY APPROVALS	

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

Sensing Part Numbers



ELECTRICAL DESIGN	DC NPN
OUTPUT	Normally Open
OPERATING VOLTAGE	10-30 VDC
CURRENT RATING	100 mA
SHORT-CIRCUIT PROTECTION	Yes
OVERLOAD PROTECTION	Yes
REVERSE POLARITY PROTECTION	Yes
VOLTAGE DROP	< 2.5 V
CURRENT CONSUMPTION	< 12 mA
REPEATABILITY	< .2mm
POWER-ON DELAY TIME	< 30 ms
SWITCH FREQUENCY	> 3000 Hz
AMBIENT TEMPERATURE	-25°C to 85°C
PROTECTION	IP 67, III
HYSTERESIS	1.0mm
MAGNETIC SENSITIVITY	2.0 mT
TRAVEL SPEED	> 10 m/s
HOUSING MATERIAL	PA (Polyamide) Black; Fastening Clamp: Stainless Steel
FUNCTION DISPLAY SWITCHING STATUS	Yellow LED
CONNECTION	Flying Leads, Pur Cable (2m Long, 3 x26 Gauge Wire)
REMARKS	Clamping Screw with Combined Slot/Hexagon Socket Head AF 1.5 cULus - Class 2 Source Required
ACCESSORIES	Rubber Placeholder, Cable Clip, and Cut Sheet To Be Provided with Every Switch
AGENCY APPROVALS	

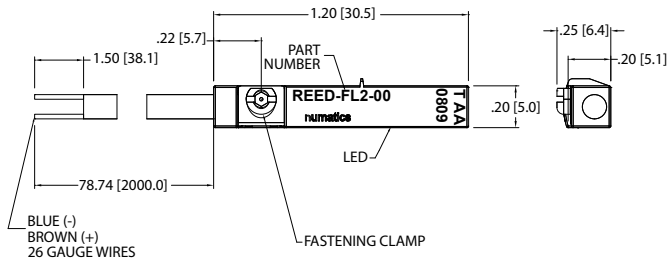
ELECTRICAL DESIGN	DC NPN
OUTPUT	Normally Open
OPERATING VOLTAGE	10-30 VDC
CURRENT RATING	100 mA
SHORT-CIRCUIT PROTECTION	Yes
OVERLOAD PROTECTION	Yes
REVERSE POLARITY PROTECTION	Yes
VOLTAGE DROP	< 2.5 V
CURRENT CONSUMPTION	< 12 mA
REPEATABILITY	< .2mm
POWER-ON DELAY TIME	< 30 ms
SWITCH FREQUENCY	> 3000 Hz
AMBIENT TEMPERATURE	-25°C to 85°C
PROTECTION	IP 67, III
HYSTERESIS	1.0mm
MAGNETIC SENSITIVITY	2.0 mT
TRAVEL SPEED	> 10 m/s
HOUSING MATERIAL	PA (Polyamide) Black; Fastening Clamp: Stainless Steel
FUNCTION DISPLAY SWITCHING STATUS	Yellow LED
CONNECTION	M8 Connector (Snap Fit) , Pur Cable (.3 m)
REMARKS	Clamping Screw with Combined Slot/Hexagon Socket Head AF 1.5 cULus - Class 2 Source Required
ACCESSORIES	Rubber Placeholder, Cable Clip, and Cut Sheet To Be Provided with Every Switch
AGENCY APPROVALS	

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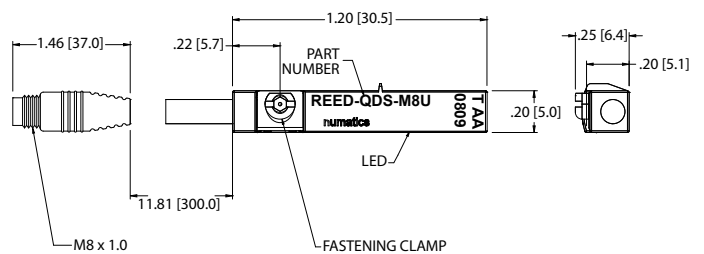


## Sensing Part Numbers

### REED-FL2-00



### REED-QDS-M8U



ELECTRICAL DESIGN	AC/DC REED
OUTPUT	Normally Open
OPERATING VOLTAGE	5-120 VAC/DC
CURRENT RATING	100 mA*
SHORT-CIRCUIT PROTECTION	No
OVERLOAD PROTECTION	No
REVERSE POLARITY PROTECTION	Yes
VOLTAGE DROP	< 5 V
REPEATABILITY	± .2mm
MAKETIME INCLUDING BOUNCE	< .6 ms
BREAKTIME	< .1 ms
SWITCHING POWER (MAX)	5 W
SWITCH FREQUENCY	1000 Hz
AMBIENT TEMPERATURE	-25°C to 70°C
PROTECTION	IP 67, II
HYSTERESIS	.9mm
HOUSING MATERIAL	PA (Polyamide) Black; Fastening Clamp: Stainless Steel
FUNCTION DISPLAY SWITCHING STATUS	Yellow LED
CONNECTION	Flying Leads, Pur Cable (2m Long, 2 x26 Gauge Wire)
REMARKS	*External Protective Circuit for Inductive Load (Valve, Contactor, Etc..) Necessary. Conforms to 2008 NEC Section 725 III, Class 2 Circuits  Clamping Screw with Combined Slot/Hexagon Socket Head AF 1.5. No LED Function in case of Polarity in DC Operation
ACCESSORIES	Rubber Placeholder, Cable Clip, and Cut Sheet To Be Provided with Every Switch
AGENCY APPROVALS	

ELECTRICAL DESIGN	AC/DC REED
OUTPUT	Normally Open
OPERATING VOLTAGE	*5-60 VDC / 5-50 VAC
CURRENT RATING	100 mA
SHORT-CIRCUIT PROTECTION	No
OVERLOAD PROTECTION	No
REVERSE POLARITY PROTECTION	Yes
VOLTAGE DROP	< 5 V
REPEATABILITY	± .2mm
MAKETIME INCLUDING BOUNCE	< .6 ms
BREAKTIME	< .1 ms
SWITCHING POWER (MAX)	5 W
SWITCH FREQUENCY	1000 Hz
AMBIENT TEMPERATURE	-25°C to 70°C
PROTECTION	IP 67, II
HYSTERESIS	.9mm
HOUSING MATERIAL	PA (Polyamide) Black; Fastening Clamp: Stainless Steel
FUNCTION DISPLAY SWITCHING STATUS	Yellow LED
CONNECTION	M8 Connector (Snap Fit), Pur Cable (.3m)
REMARKS	*External Protective Circuit for Inductive Load (Valve, Contactor, Etc..) Necessary. Conforms to 2008 NEC Section 725 III, Class 2 Circuits  M8 Connector voltage limited to 5-60 vdc / 5-50 vac to conform with 2008 IEC 61076-2-104  Clamping Screw with Combined Slot/Hexagon Socket Head AF 1.5. No LED Function in case of Polarity in DC Operation
ACCESSORIES	Rubber Placeholder, Cable Clip, and Cut Sheet To Be Provided with Every Switch
AGENCY APPROVALS	

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# NUMATICS®

World Class Supplier of Pneumatic Components



## World Headquarters

### USA Numatics, Incorporated

46280 Dylan Drive  
Novi, Michigan 48377

P: 248-596-3200  
F: 248-596-3201

### Canada Numatics, Ltd

P: 519-758-2700  
F: 519-758-5540

### México - Ascomatica SA de CV

P: 52 55 58 09 56 40 (DF y Area metropolitana)  
P: 01 800 000 ASCO (2726) (Interior de la República)  
F: 52 55 58 09 56 60

### Brazil Ascoval Ind.e Comercio Ltda

P: (55) 11-4208-1700  
F: (55) 11-4195-3970