

cylinders

# EQ Series

OEM Aluminum NFPA Interchangeable Cylinder Line



# numatics®

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**NUMATICS®**

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The **EQ Series** combines cost-effectiveness with proven dependability. It is a repairable OEM NFPA Interchangeable cylinder line that was specially designed to give our customers an economical alternative. This Non-Lube air cylinder offers elasticity to tight design budgets without sacrificing quality.

### Tube

The **tube** is hard coat anodized. The hard coating is an electro-chemical process, which produces a very dense surface of aluminum oxide. This surface has extreme hardness (60 RC.), excellent wear and corrosion resistance, and low coefficient of friction.

### End Caps

The **end caps** are accurately machined from (6061-T6) solid aluminum bar stock. They are anodized for corrosion resistance. Additionally, a recess on the piston-mating surface (at both ends) enables the air to work on a larger piston area for effortless breakaway.

### Rod Bushing

The A Series includes a graphite filled, cast iron **rod bushing** that is extra long in length. Graphite filled offers the best bearing surface when using a hard chrome plated piston rod. Cast iron provides maximum resistance against wear. The added length adds superior alignment and support of the piston rod as well as provides maximum load bearing support.

### Rod Seal

The nitrile, rounded lip design ensures proper sealing and long life.

### Rod Wiper

The standard **rod wiper** construction is a highly durable polyurethane.

### Piston Rod

High strength steel (100,000 psi minimum yield) **piston rod** has a ground, polished, and chrome plated surface. This surface provides maximum life for both the rod bushing and the seals.

### Bushing Retainer

The **bushing retainer** allows cartridge removal (cylinder repair) without complete disassembly.

### Tie-Rods

The **tie rods** are 100,000 psi minimum yield steel for maximum holding power. They are roll formed for superior strength and engagement.

### Piston Seal

The **piston seal** is a nitrile over-sized o-ring seal.

### Wear Band

The **wear band** is a stable, lubricating strip located on the piston. We separated the load bearing points by locating the wear band at the rear of the piston. This maximizes column strength at full extension.

Reference the A Series section for drawings and dimensional information.



### Piston

The solid aluminum alloy **piston** is strong and durable.

### Cushion Seal

The floating **cushion seal** design enables rapid stroke reversal by providing instantaneous full flow to the piston. Each cushion has a flush, retained adjustment needle.

### Tube End Seal

The **tube end seals** are compression type and reusable.

### Ports

Our enhanced **port** design enables the cylinder to work more efficiently. Through the use of precise machining depths and tool shape, we are able to smooth the flow path into and out of the cylinder.

### Standard Specifications:

- Meets NFPA specifications
- Bore sizes from 1-1/2" through 6"
- Piston rod diameters from 5/8" to 1-3/4"
- Nominal pressure rating is 250 psi air
- Standard temperature -10°F to 165°F (-23°C to 74°C)
- NPTF ports
- Multitude of mounting options



## EQ Series OEM Aluminum NFPA Interchangeable

### How to Order - EQ Series Cylinder

X0 EQ L-04 A 1 D - C AA 0

#### Cylinder Mounting

- X0 = Basic No Mount
- SN = Head Sleeve Nut
- F1 = Front Flange
- F2 = Rear Flange
- P1 = Fixed Clevis
- P2 = Detachable Clevis
- P3 = Fixed Eye
- P4 = Detachable Eye
- S1 = Angle Mount
- S2 = Side Lug
- S4 = Bottom Tapped
- T6\* = Head Trunnion
- T7\* = Cap Trunnion
- T8\* = Mid Trunnion
- X1 = Extended Tie Rods (Both Ends)
- X2 = Cap Ext. Tie Rods
- X3 = Head Ext. Tie Rods

\*Removable Trunnion Ears

#### Cylinder Type

EQ = Type "EQ" Cylinder

#### Cylinder Bore

- K = 1-1/2" R = 4"
- L = 2" T = 5"
- M = 2-1/2" U = 6"
- P = 3-1/4"

#### Full Inches of Stroke

- 00 = 0" Stroke
- 01 = 1" Stroke
- 02 = 2" Stroke
- 03 = 3" Stroke
- 48\* = 48" Stroke (Maximum)

\*Consult factory for strokes greater than 48".

#### Fractional Inches of Stroke

- A = 0" G = 3/8" M = 3/4"
- B = 1/16" H = 7/16" N = 13/16"
- C = 1/8" I = 1/2" O = 7/8"
- D = 3/16" J = 9/16" P = 15/16"
- E = 1/4" K = 5/8"
- F = 5/16" L = 11/16"

#### Rod Code

- 1 = Style #1 Standard Male Threads
- 2 = Style #2 Optional Male Threads
- 3 = Style #3 Standard Female Threads
- 4 = Special Rod End Standard Rod Diameter (must specify threads)
- 5 = Special Oversize Rod Diameter (must specify threads)
- 6 = Style #1 Oversize Rod Diameter
- 7 = Style #2 Oversize Rod Diameter
- 8 = Style #3 Oversize Rod Diameter
- U = Male Coupling Rod End
- V = Male Coupling Rod End Oversize Rod Diameter

#### Magnetic Piston

- 0 = No Magnet
- 2 = Reed Magnet

#### Options

- AA = No Option
- BA\*\*\* = Bumpers, Both Ends
- BC\*\*\* = Bumper, Cap Only
- BH\*\*\* = Bumper, Head Only
- BZ = Bronze Bushing
- CT = Composite Tube
- DA = Double Rod End
- EB = Silencer Bumpers
- LP = Profile Tubing
- MA = Metallic Rod Scraper
- MB = Rear Metallic Rod Scraper
- SA = Stainless Rod
- SS = Stainless Rod & Tie Rods
- ST = Stainless Tie Rods
- VA = High Temperature Seals
- 1A\* = Rod Extension
- \*1B = Rear Rod Extension
- \*2B = Rear Thread Extension
- 3B = Rear Rod Stud
- 2A\* = Thread Extension
- 3A = Rod Stud

\*Specify Length

\*\*\*Bumpers add .062" to OAL (per bumper)

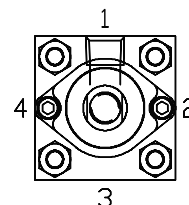
#### Adjustable Cushions

Position	1	2	3	4	Fixed
No Cushions	A	A	A	A	A
Head & Cap	B	C	D	E	Y
Head Only	F	G	H	J	W
Cap Only	K	L	M	N	V

#### Ports

##### Size Code

Position	1/8"	1/4"	3/8"	1/2"	3/4"
1	B	C	D	E	F
2	H	I	J	K	L
3	N	O	P	Q	R
4	T	U	V	W	X



Reference the A Series section for drawings and dimensional information.



### How to Order - EQ Series Piston Rod Assembly

**EQ92 - K 1 N 0 -01 A - AA**

**Type**  
EQ92 = EQ Series Piston Rod Assembly

**Bore**  
K = 1-1/2"  
L = 2"  
M = 2-1/2"  
P = 3-1/4"  
R = 4"  
T = 5"  
U = 6"

**Rod Code**  
1 = Style # 1 Standard Rod Diameter  
2 = Style # 2 Standard Rod Diameter  
3 = Style # 3 Standard Rod Diameter  
4 = Special Rod End Standard Rod Diameter (must specify threads)  
5 = Special Rod End Oversize Rod Diameter (must specify threads)  
6 = Style # 1 Oversize Rod Diameter  
7 = Style # 2 Oversize Rod Diameter  
8 = Style # 3 Oversize Rod Diameter  
U = Male Coupling Rod End Oversize Rod Diameter  
V = Male Coupling Rod End Oversize Rod Diameter

**Cushion**  
N = No Cushion  
B = Both Ends Cushioned  
H = Head End Cushioned  
C = Cap End Cushioned

**Magnet**  
0 = No Magnet  
2 = Reed Magnet

**Option**

AA = No Option  
BC = Bumpered Cap End  
BH = Bumpered Head End  
DA = Double Rod  
EB = Silencer Bumpers  
SA = Stainless Rod  
VA = Viton Seals  
1A\* = Rod Extension  
1B\* = Rear Rod Extension  
2A\* = Thread Extension  
2B\* = Rear Thread Extension  
3A = Rod Stud  
3B = Rear Rod Stud  
\* = must specify length

**Fractional Inches of Stroke**

A = 0" E = 1/4" I = 1/2" M = 3/4"  
B = 1/16" F = 5/16" J = 9/16" N = 13/16"  
C = 1/8" G = 3/8" K = 5/8" O = 7/8"  
D = 3/16" H = 7/16" L = 11/16" P = 15/16"

**Full Inches of Stroke**

00 = 0" Stroke  
01 = 1" Stroke  
02 = 2" Stroke  
03 = 3" Stroke  
04 = 4" Stroke  
05 = 5" Stroke  
48 = 48" Stroke (Maximum)

**Note:** Options listed are ones that apply to a piston rod assembly only. Model number is set up to use option code supplied with original cylinder or with any above.

### Rod End Styles, Diameters and Threads

Diameter	Style #1 Standard Male	Style #2 Optional Male	Style #3 Optional Female
0.625	7/16-20	1/2-20	7/16-20
1.000	3/4-16	7/8-14	3/4-16
1.375	1-14	1 1/4-12	1-14
1.750	1 1/4-12	1 1/2-12	1 1/4-12

### Rod Diameters by Bore Size

Bore	Standard Dia.	Oversized Dia.
1-1/2"	0.625	1.000
2"	0.625	1.000
2-1/2"	0.625	1.000
3-1/4"	1.000	1.375
4"	1.000	1.375
5"	1.000	1.375
6"	1.375	1.750



## EQ Series OEM Aluminum NFPA Interchangeable

### How to Order - EQ Series **Repair Kit**

**EQ98 - K 1 N - AA**

**Type**  
EQ98 = EQ Series Repair Kit

**Bore**  
K = 1-1/2"  
L = 2"  
M = 2-1/2"  
P = 3-1/4"  
R = 4"  
T = 5"  
U = 6"

**Rod Size**  
0 = Standard Rod  
1 = Oversize Rod

**Option**  
AA = No Option  
BZ = Bronze Bushing  
DA = Double Rod  
EB = Silencer Bumpers  
MA = Metallic Rod Scraper  
MB = Rear Metallic Rod Scraper  
VA = Viton Seals

**Cushion**  
N = No Cushion  
B = Both Ends Cushioned  
H = Head End Cushioned  
C = Cap End Cushioned

**Note:** Options listed are ones that apply to a repair kit only.  
Model number is set up to use option code supplied with original cylinder or with any above.

### How to Order - EQ Series **Seal Kit**

**EQ97 - K 1 N - AA**

**Type**  
EQ97 = EQ Series Seal Kit

**Bore**  
K = 1-1/2"  
L = 2"  
M = 2-1/2"  
P = 3-1/4"  
R = 4"  
T = 5"  
U = 6"

**Rod Size**  
0 = Standard Rod  
1 = Oversize Rod

**Option**  
AA = No Option  
DA = Double Rod  
EB = Silencer Bumpers  
MA = Metallic Rod Scraper  
MB = Rear Metallic Rod Scraper  
VA = Viton Seals

**Cushion**  
N = No Cushion  
B = Both Ends Cushioned  
H = Head End Cushioned  
C = Cap End Cushioned

**Note:** Options listed are ones that apply to a seal kit only.  
Model number is set up to use option code supplied with original cylinder or with any above.



## Piston Rod Assembly Kit Removal/Installation Instructions

1. Loosen 4 Tie Rod Nuts (Part #18) to remove Piston/Rod Assembly (Part #15 & #16).
2. Carefully remove old seals and wearband. (Part #12 & #14). Any damage to the seals may result in leakage.
3. Lubricate piston seal(s) and wearband (Part #12) with supplied Numatics' Lube. Examine seals before installing for any contamination. Contamination may cause leakage.
4. Install Piston Seal (Part #14). Make sure the piston seal is not twisted inside groove.
5. Install lubricated wearband onto piston. Sink piston/rod assembly into sinker tube. See Sinker Tube Part Numbers Chart.
6. Apply lube inside the cylinder tube.
7. Sink piston/rod assembly into cylinder tube.
8. Press piston/rod assembly flush with the cylinder tube. Wipe off any lube from the face of the piston.
9. Examine all seals before reassembling cylinder for any contamination. Contamination may cause leakage.
10. Lightly grease Rod Seal (Part #3) of Loaded Bushing before installing. This will ease the installation of the rod bushing over the rod.
11. Reassemble cylinder. Loosely torque tie rod nuts to allow head and cap to rotate slightly.
12. Before final torque, place cylinder on level surface. This will ensure that the cylinder head and cap are square. Torque tie rod nuts in a crisscross pattern. Use torque tolerance charts for tie rod nuts.
13. Stroke cylinder by hand. This will enable detection of any binding. If binding does occur, repeat steps 11 -13.

See Seal Installation Guide on page 9 for additional (visual) instructions.

## Repair Kit and Seal Kit Removal/Installation Instructions

1. Loosen 2 or 4 Retainer Screws (Part #11) to remove Bushing Retainer (Part #10) and Loaded Bushing (Part # 9).
2. Loosen 4 Tie Rod Nuts (Part #18) to remove Head (Part #8) and Piston/Rod Assembly (Part #15 & #16).
3. Carefully remove old seals and wearband. (Part [#1, #2, #3 Seal Kit only], #5, #6, #7, #12, & #14) Any damage to the seal grooves may result in leakage.
4. Lubricate new seals with supplied Numatics' Lube. Examine seals before installing for any contamination. Contamination may cause leakage.
5. Install Piston Seal (Part #14). Make sure the piston seal is not twisted inside groove.
6. Install lubricated Wearband (Part #12) onto piston. Sink piston/rod assembly into sinker tube. See Sinker Tube Part Numbers Chart.
7. Apply lube inside the cylinder tube.
8. Sink piston/rod assembly into cylinder tube.
9. Press piston/rod assembly flush with the cylinder tube. Wipe off any lube from the face of the piston.
10. Place Tube End Seals (Part #6) into head and cap seal grooves. Examine seals after installing for any contamination. Contamination may cause leakage.
11. Install Rod Wiper (Part #1), Bushing O-ring (Part #2), and Rod Seal (Part #3) into bushing (Seal Kit only). Lightly grease Rod Seal and Bushing O-ring after installation. This will ease the installation of the rod bushing over the rod and into the head.
12. Reassemble cylinder except for loaded rod bushing. First, loosely torque tie rod nuts to allow head and cap to rotate slightly. Carefully place bushing over the rod until getting interference. With a twisting motion, slide the bushing down onto the rod and into the bushing pocket on the head.
13. Place Bushing Retainer (Part #10). Lightly tighten retainer screws.
14. Before final torque, place cylinder on level surface to square head and cap. Torque tie rod nuts in a crisscross pattern. Use the torque tolerance chart for Tie Rod Nuts and Retainer Screws.
15. Stroke cylinder by hand. This will enable detection of any binding. If binding does occur, repeat steps 12-14.

See Seal Installation Guide on page 9 for additional (visual) instructions.





## EQ Series OEM Aluminum NFA Interchangeable

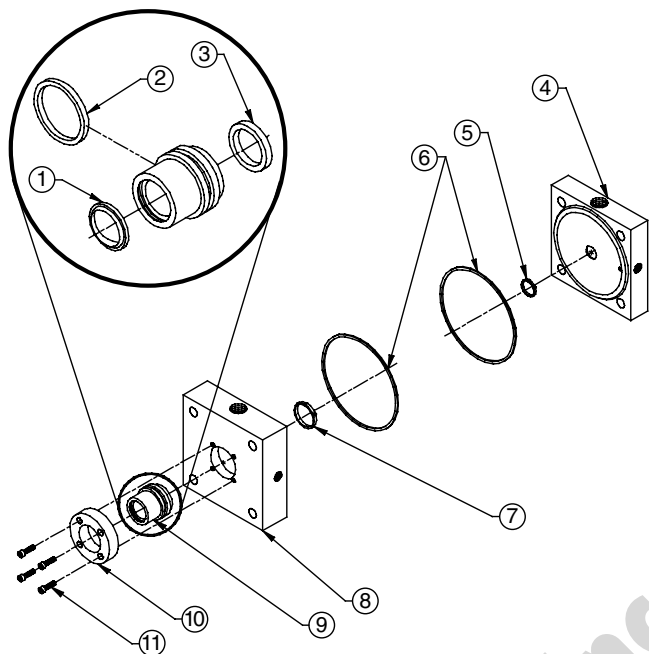
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### Diagrams

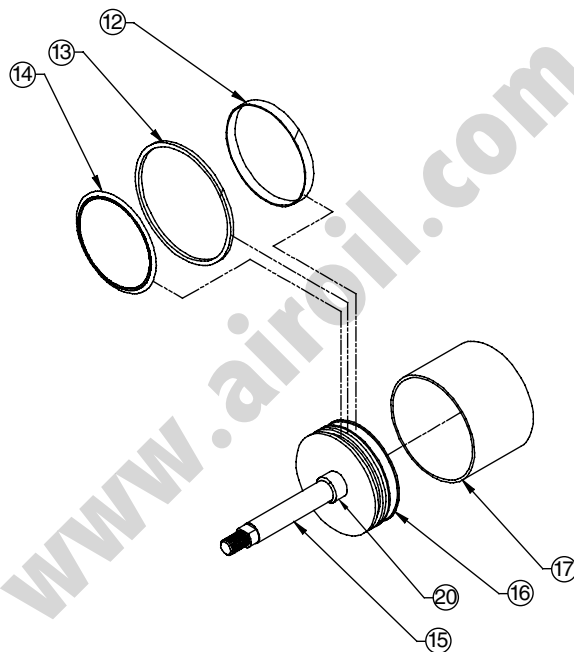
Pneumatic Service Temperatures:

Nitrile Seals: -10°F (-23°C) to 165°F (74°C)

Viton® Seals: 0°F (-17°C) to 400°F (204°C)

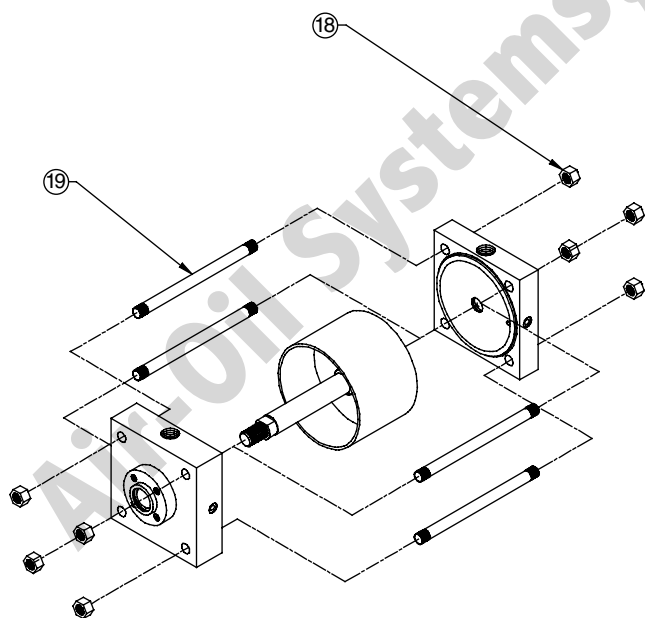


Head, Cap, and Bushing Assembly



Piston/Rod Assembly

### EQ Series



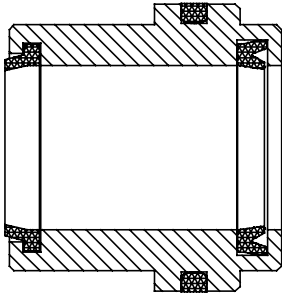
Cylinder Assembly and Tie Rod Torque

Part #	Description	Parts included in:		
		Seal Kit	Repair Kit	Piston/Rod Assembly
1	Rod Wiper	X		
2	Bushing O-ring	X		
3	Rod Seal	X		
4	Cap			
5	Cap Cushion Seal	X	X	
6	Tube End Seals	X	X	
7	Head Cushion Seal	X	X	
8	Head			
9	Loaded Bushing Assembly		X	
10	Bushing Retainer			
11	Retainer Screws			
12	Wearband	X	X	
13	Magnet			X
14	Piston Seal	X	X	
15	Rod			X
16	Piston			X
17	Tube			
18	Hex Nuts			
19	Tie Rods			
20	Head Cushion Spear			X

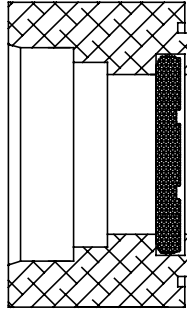




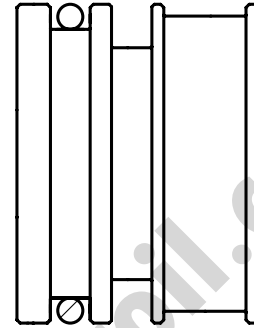
## Seal Installation Guide



Loaded Bushing



Cushioned Head or Cap



O' Ring Piston

### Torque Tolerances (lbs-ft) Tie Rod Nut Part #19

Bore	Min.	Max.
1-1/2"	8	10
2"	15	20
2-1/2"	15	20
3-1/4"	23	30
4"	23	30
5"	50	60
6"	50	60

### Retainer Screws Torque Tolerances (lbs-ft) Part #11

Size	Min.	Max.
#10-32	1	1.5
1/4-28	5	7
5/16-24	10	12

**Note: Sinker Tubes are not included in kits.  
They can be ordered using the part numbers  
from the provided chart.**

### Sinker Tube Part Numbers

Bore	Min.
1-1/2"	A06-K91
2"	A06-L91
2-1/2"	A06-M91
3-1/4"	A06-P91
4"	A06-R91
5"	A06-T91
6"	A06-U91



## EQ Series OEM Aluminum NFPA Interchangeable

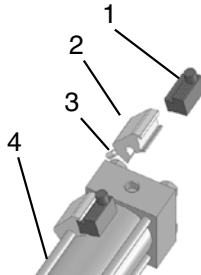
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### EQ Series Switch Information

### EQ Series World Switch Application Detail

#### Round Tube and Tie Rod Detail

1. World Switch
2. Tie Rod Bracket
3. Adjustment Screw
4. Cylinder Tie Rod



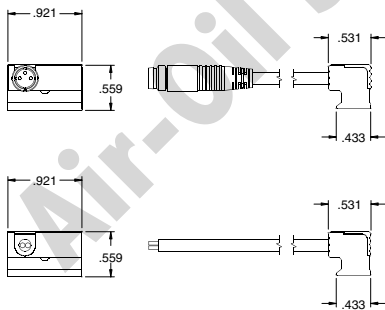
### EQ Series World Switch Bracket

Cylinders	Bore	Part Number
EQ series Tie Rod	1 1/2"	SB6-K01
EQ series Tie Rod	2"-2 1/2"	SB6-L01
EQ series Tie Rod	3 1/4"-4"	SB6-P01
EQ series Tie Rod	5"-6"	SB6-T01

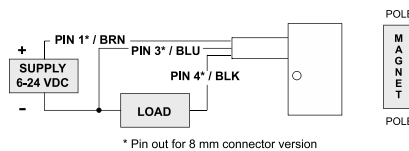
### EQ series World Switch Hall Effect Part Numbers

P/N	Switch Style	Switch Type	Function	Switching Voltage	Switching Current	Switching Power	Voltage Drop
SH6-031	3m Wire Version	Hall Effect for Reed Magnet & Light Sourcing	Normally Open Sourcing (PNP)	6 -24 VDC	0.3 Amps Max.	7.2 Watts Max.	0.5 Volts
SH6-021	8m Connector Pigtail	Hall Effect for Reed Magnet & Light Sourcing	Normally Open Sourcing (PNP)	6 -24 VDC	0.3 Amps Max.	7.2 Watts Max.	0.5 Volts
SH6-032	3m Wire Version	Hall Effect for Reed Magnet & Light Sourcing	Normally Open Sourcing (NPN)	6 -24 VDC	0.3 Amps Max.	7.2 Watts Max.	0.5 Volts
SH6-022	8m Connector Pigtail	Hall Effect for Reed Magnet & Light Sourcing	Normally Open Sourcing (NPN)	6 -24 VDC	0.3 Amps Max.	7.2 Watts Max.	0.5 Volts

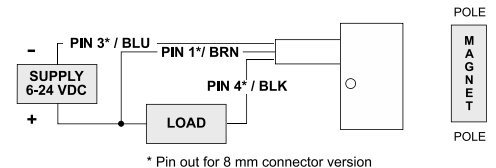
### Hall Effect Switch



#### PNP Sourcing



#### NPN Sinking

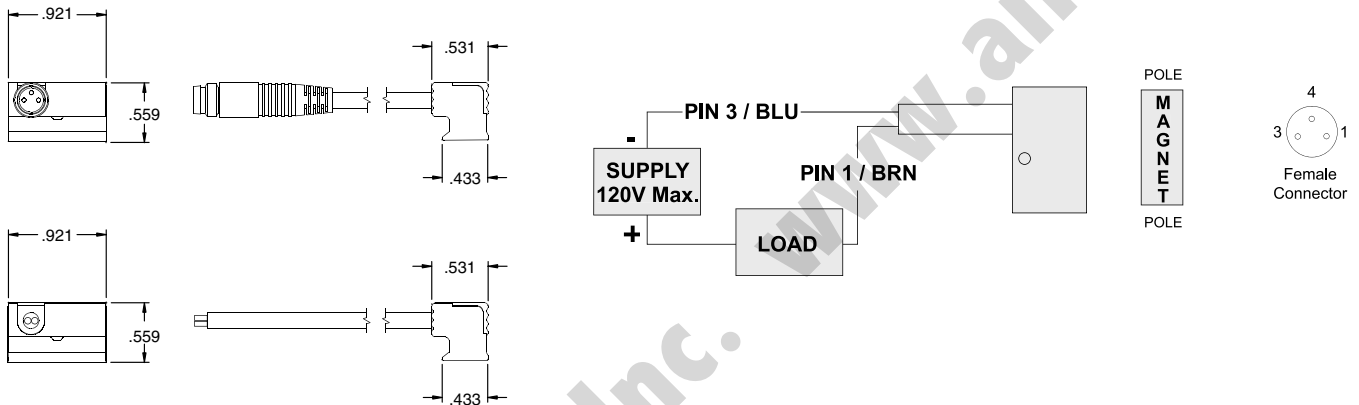




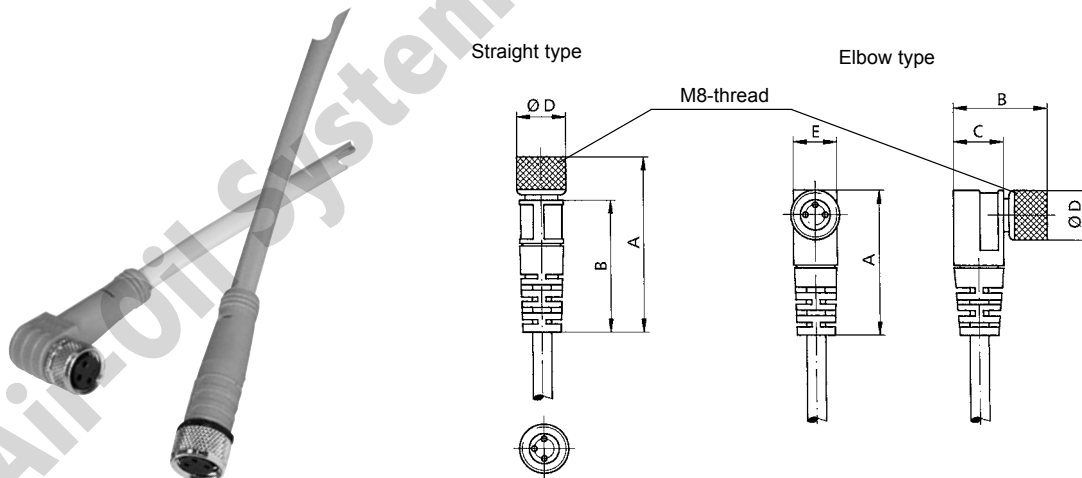
### EQ Series World Switch Reed Switch Part Numbers

P/N	Switch Style	Switch Type	Function	Switching Voltage	Switching Current	Switching Power	Voltage Drop
SR6-002	3m Wire Version	Reed Switch, LED	SPST Normally Open	5 -120V AC/DC	0.025 Amps Max. 0.001 Amps Min.	3 Watts Max.	3.5 Volts
SR6-004	3m Wire Version	Reed Switch, LED & MOV	SPST Normally Open	5 -120V AC/DC	0.5 Amps Max. 0.005 Amps Min.	10 Watts Max.	3.0 Volts
SR6-021	8mm Pigtail	Reed Switch	SPST Normally Open	0 -120V AC/DC	0.5 Amps Max.	10 Watts Max.	0 Volts
SR6-022	8mm Pigtail	Reed Switch, LED	SPST Normally Open	5 -120V AC/DC	0.025 Amps Max. 0.001 Amps Min.	3 Watts Max.	3.5 Volts
SR6-024	8mm Pigtail	Reed Switch, LED & MOV	SPST Normally Open	5 -120V AC/DC	0.5 Amps Max. 0.005 Amps Min.	10 Watts Max.	3.0 Volts

### Reed Switch - Normally Open Type SR6



### Cords M8-thread for Switches and Sensors with Connector



### Dimensions (mm)

Type		A	B	C	D	E	Weight (approx. kg)	Order Code
Straight with 5m-cable	(3x0.25 mm <sup>2</sup> )	32.3	24.4	—	9.0	—	0.143	SC6-001
Elbow with 5m-cable	(3x0.25 mm <sup>2</sup> )	26.3	17.1	9.2	9.0	8.0	0.145	SC6-002



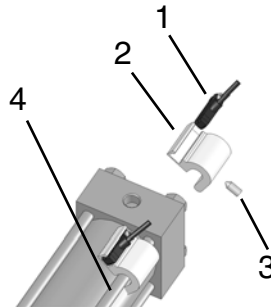
## EQ Series OEM Aluminum NFPA Interchangeable

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### EQ Series Global Application Detail

#### Round Tube and Tie Rod Detail

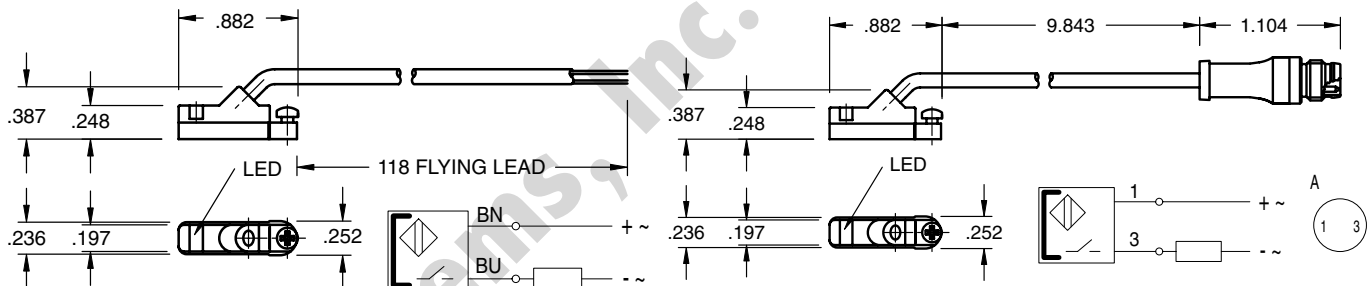
1. Global Switch
2. Tie Rod Bracket
3. Adjustment Screw
4. Cylinder Tie Rod



### EQ Series Global Switch Bracket

Cylinders	Bore	Part Number
EQ series Tie Rod	1 1/2"-2 1/2"	N199-1017
EQ series Tie Rod	3 1/4"-4"	N199-1018
EQ series Tie Rod	5"-6"	N199-1019
EQ series Tie Rod	5"-6"	SB6-T01

### Reed Switch (AC/DC NO), flying lead - RSS02, 8mm connector - RSQ02



#### 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 $I_o$ at $U_e$ d./und.	(mA)	0

Observe polarity for correct LED function

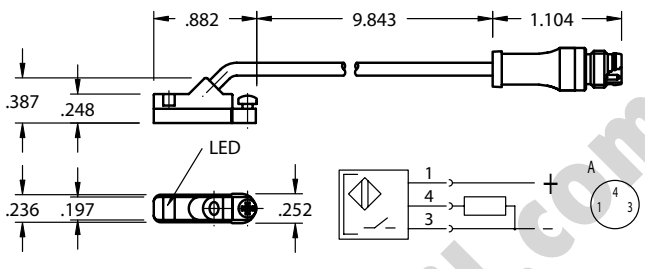
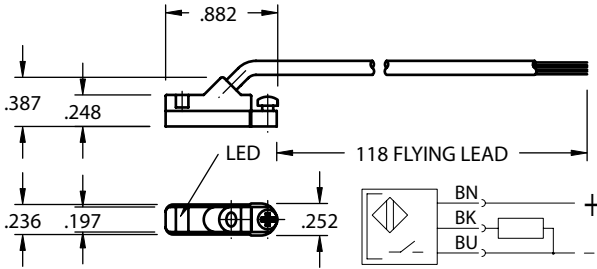
#### Mechanical Data

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	





### Electronic Switch (PNP NO), flying lead - HPNPS31, 8mm connector - HPNPQ31



#### Sensing Data

Ambient temperature range $t_d$	(°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

#### Mechanical Data

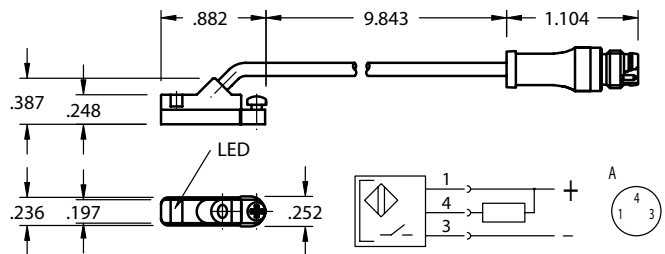
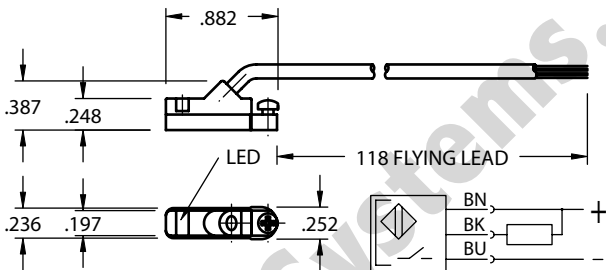
Housing material		Polyamide
Material of sensing face		Polyamide
Connection		PVC cable
Degree of Protection	IP	67
Rated shock: half-sinus, 30 g, 11 ms		
Rated vibration environment: 55 Hz, 1mm amplitude, 3 x 30		

#### 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 $I_o$ at $U_e$ d./und.	(mA)	25/13
Protected against polarity reversal		YES



### Electronic Switch (NPN NO), flying lead - HNPNS32, 8mm connector - HNPNQ32



#### Sensing Data

Ambient temperature range $t_d$	(°F/°C)	-13 to +158 (-25 to +70)
Temperature drift	(% of $S_T$ )	$\leq 0.3\%/^{\circ}\text{C}$
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

#### 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		

#### 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 $I_o$ at $U_e$ d./und.	(mA)	25/13
Protected against polarity reversal		YES



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