

# CATALOG

air cylinders

## **CST Series**

*Stopper Cylinders*



# NUMATICS®

Numatics, Inc. is a leading manufacturer of pneumatic products and motion control products. Our broad spectrum of standard, custom developed products and application components, have made a significant impact on pneumatic innovation as well as pneumatic and motion control technology. Our company has an extensive history of generating innovative concepts and technological breakthroughs. Many of today's standard features in pneumatic technology were industry firsts from Numatics. We continue our innovative approach to product development by developing electric motion control solutions and enhancing our embedded Fieldbus and I/O products to continually meet and solve our customer's application requirements.



Today Numatics is proud to be a part of the Industrial Automation Division of Emerson Electric Co.

Emerson (NYSE: EMR) is a global company that brings together technology and engineering to provide innovative solutions for customers in a wide range of industrial, commercial, and consumer markets.

Numatics, along with the vast resources of the Emerson organization will assure that our proud history of innovation and service will continue to meet the needs of our global customers.



**EMERSON™**  
Industrial Automation

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## **CST Series** ..... 2-8

### ***Stopper Cylinders***

Features .....	2
How to Order .....	3
Selection Guide .....	4
Component Identification and Weight Table .....	4
Quick Reference to Components .....	5
Round Shaft, Non-Rotating and Roller Styles .....	6
Standard Lever and Lever with lockout cup styles .....	7

### ***Magnetically Actuated Sensors***

Features .....	8
Dimensions .....	8
Electrical Characteristics .....	9



### CST Series Stopper Cylinders

#### Features

- Magnetic piston is included as a bold standard feature.
- Rugged body is machined from aluminum extrusion and mounts rigidly to equipment using minimal space.
- A variety of styles are offered to meet different application requirements.
- The direction of rollers are adjustable for use in different applications.
- Shock absorbers are available as safety stops.
- Magnetic sensors can be mounted on cylinder surfaces when input signals are required for controllers.



#### Standard Stroke Table

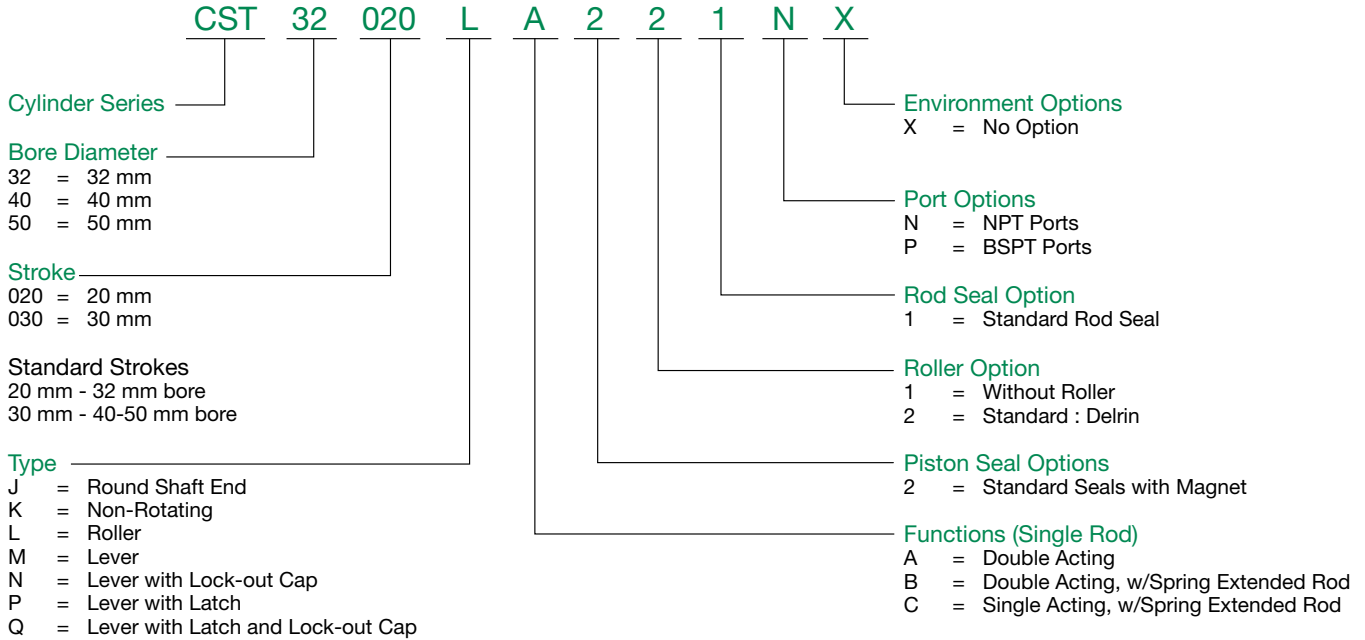
BORE	STANDARD STROKE
32mm	20mm
40mm	30mm
50mm	30mm

#### Specifications

ACTION	DOUBLE ACTING, MAGNETIC PISTON
Bore Size	32, 40 and 50 mm
Operating Media	Compressed air
Max. Operating Pressure	145 psi (10 bar)
Piston Speed	50 - 100 mm/sec
Temperature Range	-10°C to + 70°C (14°F to 158°F)
Cushion	Buna-N bumpers at both ends
Stroke Tolerance	+1.4/-0
Sensors	See pages 8 & 9 for information



### How To Order



#### Example Order:

CST 32020 LA221NX

- CST = Series
- 32 = 32mm Bore
- 020 = 20mm Stroke
- L = Roller Type
- A = Double Acting
- 2 = Standard Seals with magnet
- 2 = Standard : Delrin Roller
- 1 = Standard Rod End Seal
- N = NPT Ports
- X = No Environment Options

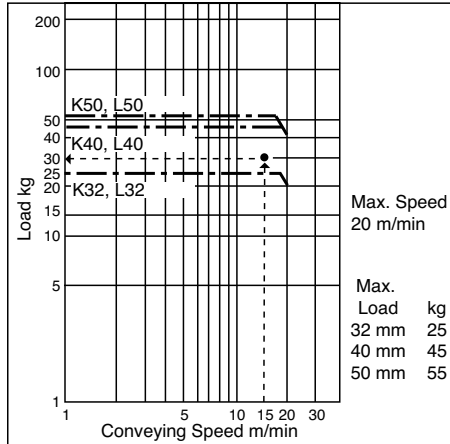
Note: Please order sensors separately from the tables on pages 8 and 9.



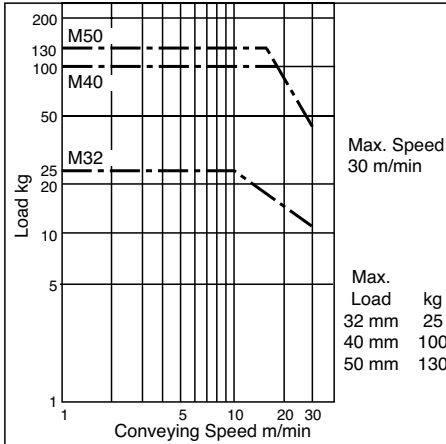
## CST Series

### Selection Guide

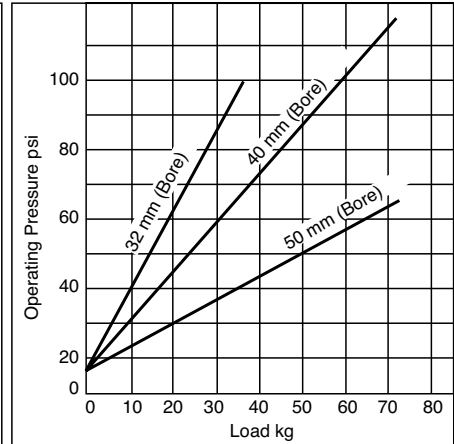
**Round Bar, Non-Rotating or Roller Style**



**Lever (with shock absorber) Style**



**Min. Operating Pressure for Load & Model**



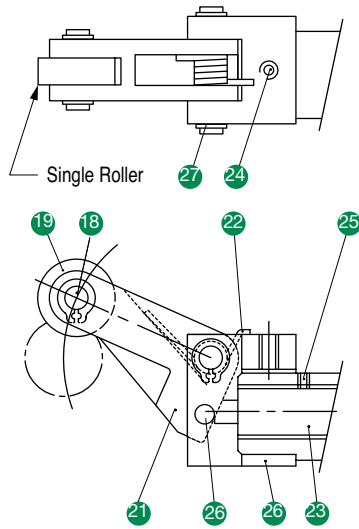
Conversions: 1 Kg = 2.2 lbs; 1m = 3.3 ft

Example:

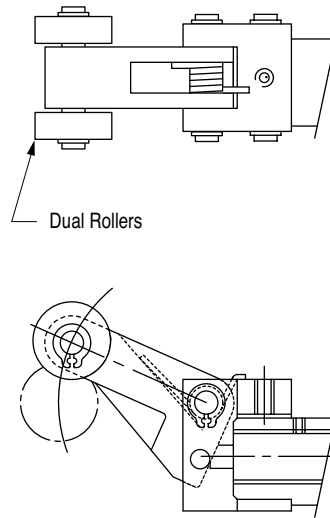
Roller Style Stopper Cylinder with 30 kg load moving at 15 m/min. Locate intersection of conveying speed & load in the chart (shown as black dotted lines on the chart). Choose nearest next larger size, for the model which is acceptable for the application.

### APPROXIMATE WEIGHT (LBS)

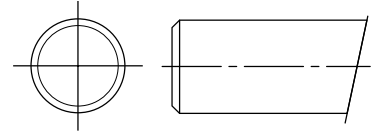
BORE MM	ROD END STYLE	STROKE				
		10	15	20	25	30
ø32	Round Shaft, Non-Rotating, Roller	0.92	0.97	1.01	-	-
	Lever	1.12	1.17	1.21	-	-
ø40	Round Shaft, Non-Rotating, Roller	-	-	1.62	1.76	1.89
	Lever	-	-	2.13	2.22	2.31
ø50	Round Shaft, Non-Rotating, Roller	-	-	2.26	2.35	2.44
	Lever	-	-	2.77	2.86	2.95



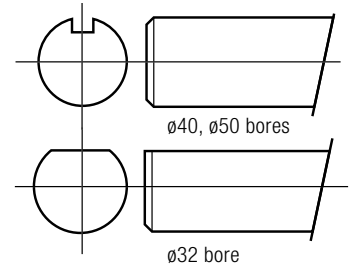
Model "M" Lever style  
ø32 – Single Roller



Model "M" Lever style  
ø40, ø50 – Dual Rollers



Model "J"  
Round Shaft Style

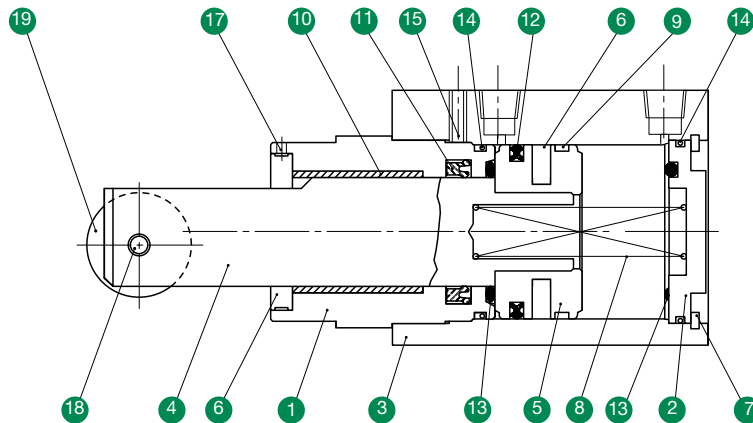


‡ Model "K" Non-Rotating style:  
ø32 Bore - Flatted shaft with matching plate;  
ø40 & ø50 bores - pin, roller & slot in shaft.

† Shock absorber (No. 23) is a standard feature of all Lever Style Models. It is easily removed for screw adjustment of the damping characteristics.

Non-Rotating plate (No. 16) can be released from locking set screws to orient rod flat on non-rotating (K), rollers (L) or lever (M, N or P) to other positions.

### Roller Style (L) – Function "B" shown



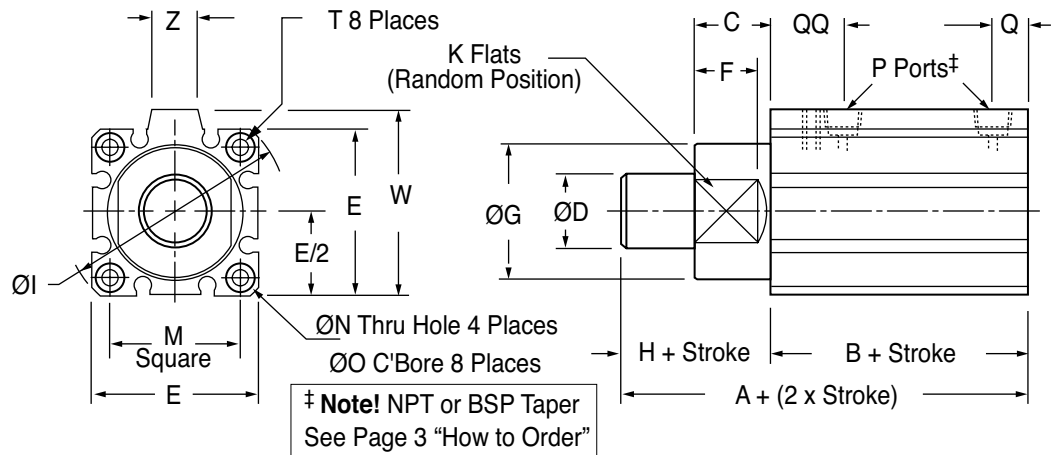
#### QUICK REFERENCE TO COMPONENTS

NO.	DESCRIPTION	MATERIAL	QTY.	NO.	DESCRIPTION	MATERIAL	QTY.
1	Front end cover	Anodized aluminum alloy	1	15	Set screw	Carbon steel	1
2	Rear end cover	Anodized aluminum alloy	1	16	Non-Rotating plate ‡	Delrin	1
3	Housing	Anodized aluminum alloy	1	17	Set screw	Carbon steel	1
4	Piston rod	Hard chrome plated carbon steel	1	18	Pin	Hardened alloy steel	2
5	Piston	Aluminum alloy	1	19	Roller	Delrin	See Dwg.
6	Magnet	Magnet	1	20	Connector	Cast Iron	1
7	Snap ring	Carbon steel	1	21	Driven block	Carbon steel	1
8	Spring	Piano Wire	1	22	Spring	Piano wire	1
9	Wear ring	Synthetic resin	1	23	Shock absorber †	–	1
10	Bushing	Oil filled, sintered bronze	1	24	Set screw	Carbon steel	2
11	Seal	Buna-N	1	25	Set screw †	Carbon steel	1
12	Seal	Buna-N	1	26	Steel ball	Carbon steel	1
13	O' Ring	Buna-N	2	27	Snap ring	Carbon steel	4
14	O' Ring	Buna-N	1				

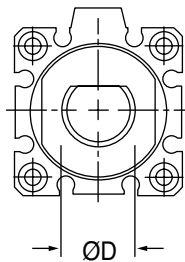


## CST Series

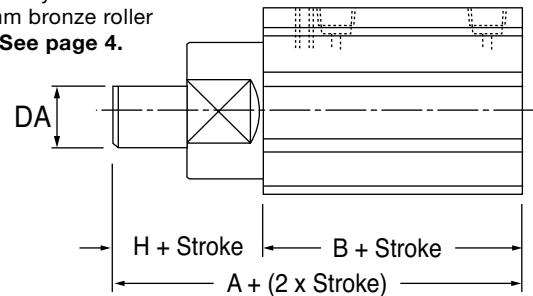
### Round Shaft Style (J)



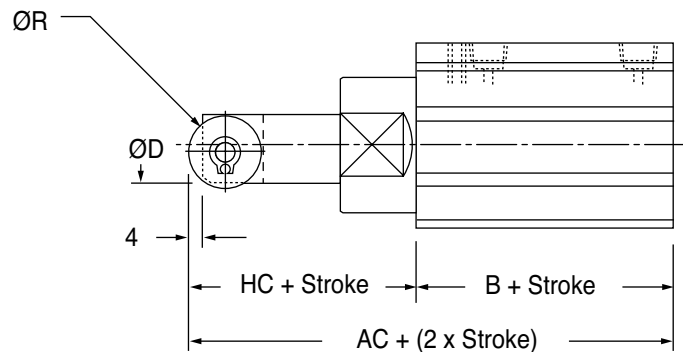
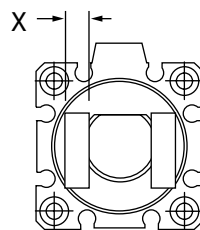
### Non-Rotating Style (K)



DA applies to 32mm only. 40mm and 50mm use Ø7mm bronze roller on pin in shaft slot. **See page 4.**



### Roller Style (L)



### Dimensions

BORE (MM)	A	AC	B	C	ØD	DA	E	F	ØG	H	HC	I	K	M
Ø32	68	88.5	48	20	20	18	45	13	36	20	40.5	60	32	34
Ø40	80.5	106	52.5	28	25	-	52	15	44	28	53	69	41	40
Ø50	82	107	54	28	25	-	64	15	56	28	53	86	50	50



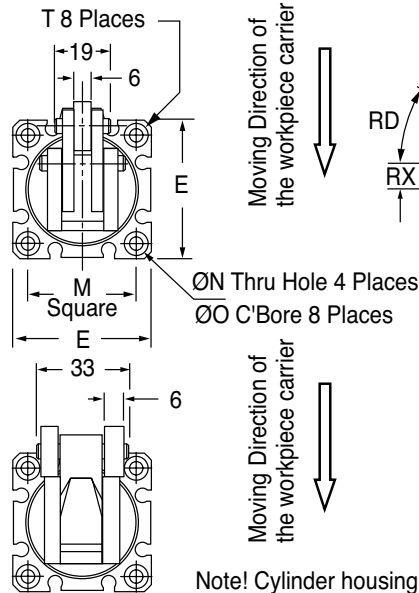


BORE (MM)	ØN	ØO	P	Q	QQ	ØR	T THREADS	W	X	Z
Ø32	5.5	9 x 7 dp	1/8	9	20	20	M6 x 1.0 - 10 dp	49.5	6	18
Ø40	5.5	9 x 7 dp	1/8	10	24.5	24	M6 x 1.0 - 10 dp	57	8	18
Ø50	6.6	11 x 8 dp	1/4	10	24.5	24	M8 x 1.25 - 14 dp	71	8	22

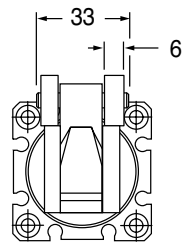
### Lever Style (M)



Ø32  
Single Roller



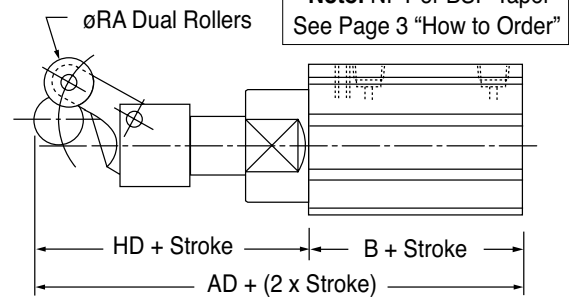
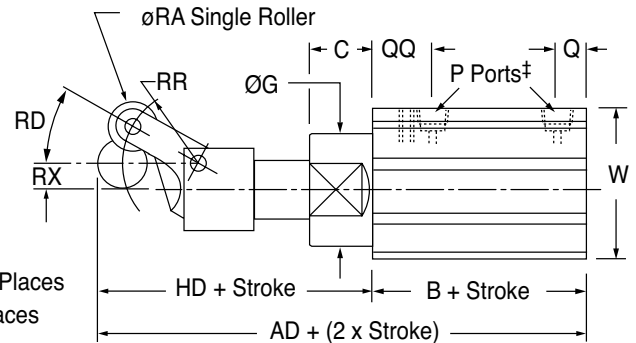
Ø40, Ø50  
Dual Rollers



Moving Direction of the workpiece carrier

Moving Direction of the workpiece carrier

Note! Cylinder housing dimensions not shown are the same as Round Shaft (J)



### Lever Style (N) – with lockout cap

A ball-chain retained lockout cap fits over the shock absorber stem to position the roller out of the conveyor stream.



### Lever Style (P) – with latch

When a work piece pushes the lever through the shock absorber stroke, the latch locks the lever in alignment to the rod. This reduces additional strokes to the shock absorber. The latching mechanism is released when the rod fully retracts.



### Lever Style (Q) – with latch and lockout cap.

Latch is the same as (Q); lockout cap is the same as (N).

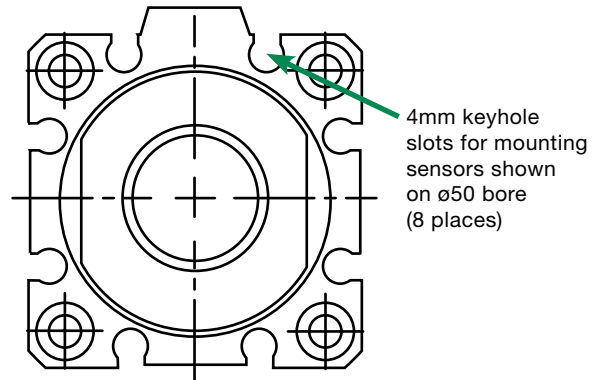
BORE (MM)	AD	HD	ØRA	RD	RR	RX
Ø32	120.5	72.5	15	30°	28	10.5
Ø40	152.5	100	20	24°	38	14
Ø50	154	100	20	24°	38	14



## Magnetically Actuated Sensors

Magnetic Piston is a standard feature of Numatics stopper cylinders. When position sensing is desired for input to signal controllers, Numatics sensors mount easily and securely in slots on the cylinder body.

*Round Profile Sensors* feature surge suppression, polarity protection, LED indicator, and extremely fast switching speeds. They slide into mating 4mm keyhole slots on either side of the cylinder housing and are easily positioned and locked in place with a set screw. They are offered in two styles: a quick connect style with a 6 inch pigtail and male connector, or a pre-wired style with a 9 foot lead.



Female Cordsets are available in 3 pin configuration in a 5 meter length.

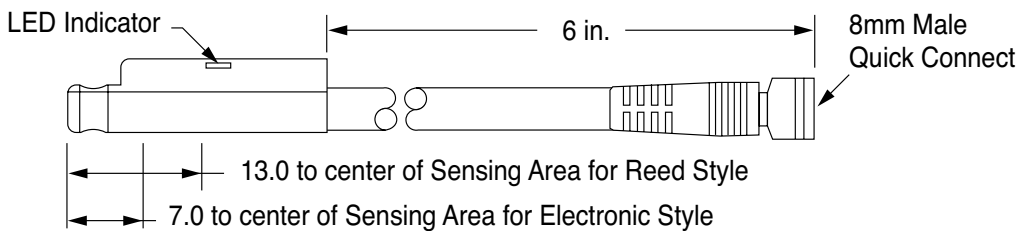
Order sensors and cordsets separately from the tables below and page 9.



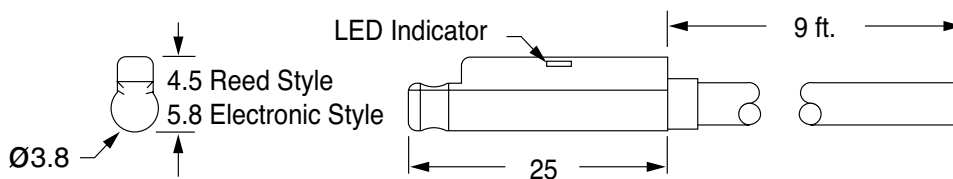
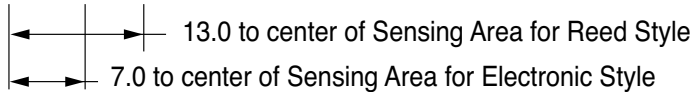
8mm Female Cordsets for Quick Connect Sensors

CORDSET DESCRIPTION	PART NO.
5 meters, 3-Pin	PXCST

## Sensor Dimensions (mm unless noted)



All sensors feature surge suppression, polarity protection, LED indicator, and extremely fast switching speeds.



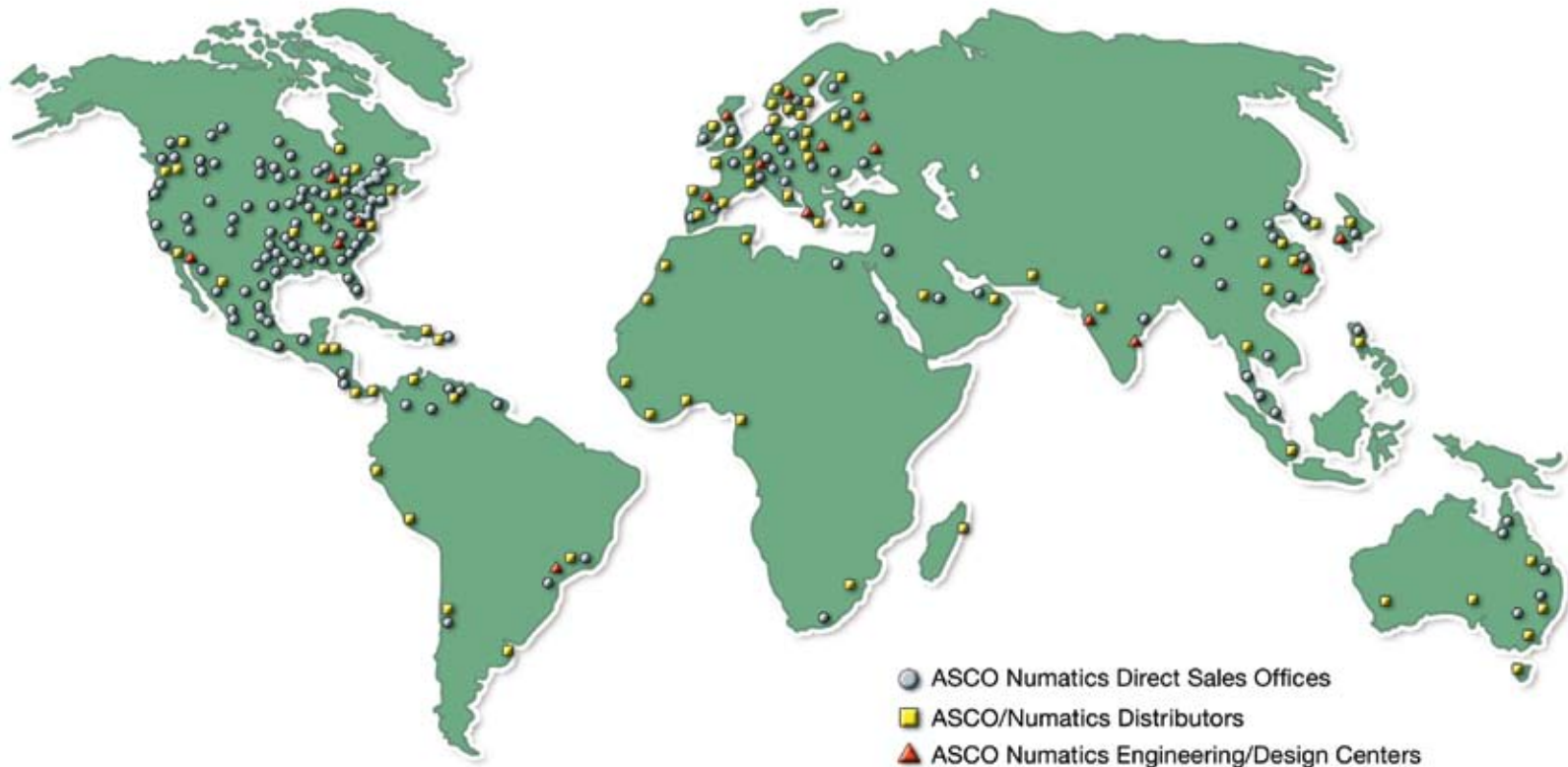


MAGNETIC SENSORS - ELECTRICAL CHARACTERISTICS							PART NUMBERS AND PRICES	
Sensor Type	Function	Switching Voltage	Switching Current	Switching Power	Switching Speed	Voltage Drop	Prewired 9 ft. Part No.	Quick Connect Part No.
Reed Switch for PLC's w/LED (current limiting)	SPST Normally Open	5-120V AC/DC 50/60 Hz	0.04 Amp max 0.005 Amp min.	4 Watts max.	0.5 ms operate 0.1 ms release	2.5 Volts	9C49-000-002	9C49-000-302 Requires 3 pin cordset
Electronic LED and Sourcing	PNP Normally Open	6-30 VDC	0.2 Amp max.	6 Watts max.	1.5µs operate 0.5µs release	1.5 Volts	9C49-000-031	9C49-000-331 Requires 3 pin cordset
Electronic LED and Sinking	NPN Normally Open	6-30 VDC	0.2 Amp max.	6 Watts max.	1.5µs operate 0.5µs release	1.5 Volts	9C49-000-032	9C49-000-332 Requires 3 pin cordset

Specifications and prices subject to change without notice or incurring obligation

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of Pneumatic Components*



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