

# P270 Series

## Acrylic Tube Variable Area Flowmeter



The P270 Series Flowmeters with molded construction are ideal for low flow rates of water, air and nitrogen in OEM applications.

The P270 flowmeter is highly optimized for the flow measurement of water, air and nitrogen by offering an accuracy of  $\pm 5\%$  F.S.

Optional contact alarm feature provides signal feedback to users when flowrates move outside the preset limits.



### Contact Information:

Parker Hannifin Corporation  
**Porter Instrument Division**  
245 Township Line Road  
Hatfield PA, 19440

**Phone 215 723 4000**  
**Fax 215 723 2199**  
**industrial@parker.com**

[www.porterinstrument.com](http://www.porterinstrument.com)

### Product Features:

- An excellent solution for measurement of flowrate for water, air and nitrogen.
- Available in standard flowrate ranges for easy selection
- Acrylic molded construction provides economical choice
- Easy to-read scales
- Optional alarm output

# Specification

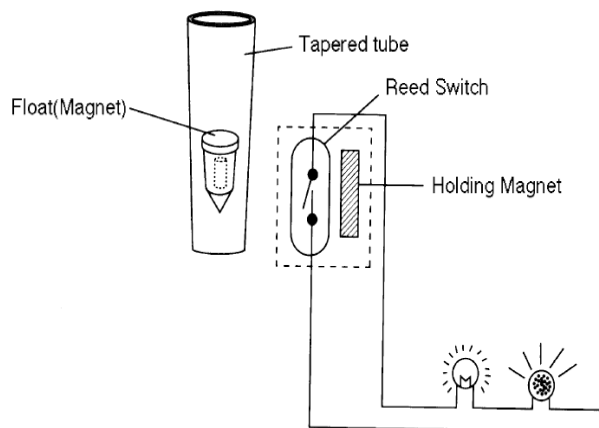
## Materials

Wetted	
Body	Polymethyl Methacrylate (PMMA)
Float	304 Stainless Steel, Glass, PTFE or Ruby
Packing	NBR (Nitrile Rubber)
Fitting	304 Stainless Steel
Valve	304 Stainless Steel
Non-wetted	
Cover	Polyoxymethylene Plastic (POM)
Connection Size and Type	Standard:
	<ul style="list-style-type: none"> <li>NPT or RC 1/4" With locknuts for front panel mounting (Small Flowrate)</li> <li>NPT or RC 3/8" With locknuts for front panel mounting (Large Flowrate)</li> </ul>

Proper material to be selected according to the specification.

## Reed Switch Specification

Number Of Point	1 point(High or Low) 2 point alarm also available as an option. Consult factory for details.
Alarm Setting Range	Standard 20 to 80% of full scale (H:50 to 80%, L:20 to 50%)
Contact	Reed switch(Self-holding type) Max. Contact capacity: AC10VA, DC10W Max. Voltage: AC125V, DC100V Max. Current: 0.5A
Connection	Lead wire connection (50cm) (2m is also available)
Reset-Span	25% Full Scale
Ambient Temperature	-10 to 60°C



Caution must be taken when mounting multiple alarmed meters. Close proximity may cause interference with alarm signal.

## Performance

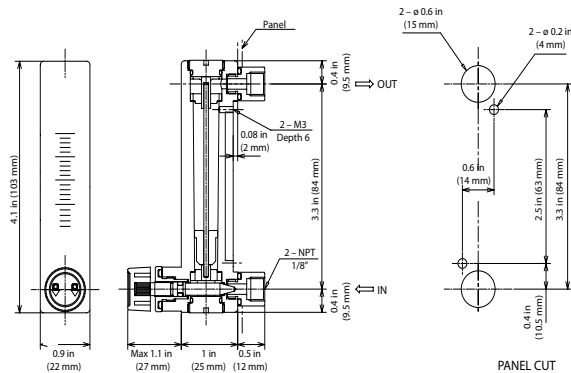
Flowrate Scale Ranges	
Water <sup>1</sup>	
Minimum	0.16–16 Gal/h (10–100 ml/min) Small Flowrate Type
	4.8–48 Gal/h (0.3–3 L/min) Large Flowrate Type
Maximum	4.8–48 Gal/h (0.3–3 L/min) Small Flowrate Type
	16–160 Gal/h (1–10 L/min) Large Flowrate Type
Air <sup>2</sup> or N <sub>2</sub>	
Minimum	0.4–4.2 ft <sup>3</sup> /h (nor) (0.2–20 L/min) (nor) Small Flowrate Type
	11–106 ft <sup>3</sup> /h (nor) (5–50 L/min) (nor) Large Flowrate Type
Maximum	11–106 ft <sup>3</sup> /h (nor) (5–50 L/min) (nor) Small Flowrate Type
	64–636 ft <sup>3</sup> /h (nor) (30–300 L/min) (nor) Large Flowrate Type
Turndown	10:1
Accuracy	±5% F.S.
Approximate Weight	0.2 lbs. (95 g) Small Flowrate Type
	0.27 lbs. (120 g) Large Flowrate Type
Flow Direction	Bottom Rear to Top Rear
Alarm Type	Reed Switch Alarm
Operating Conditions	
Max. Operating Pressure	72.5 psig (5 barg)
Max. Operating Temperature	122°F (50°C)

<sup>1</sup>Liquid equivalent to water density 1.0g/cm<sup>3</sup>, viscosity 1.0cp

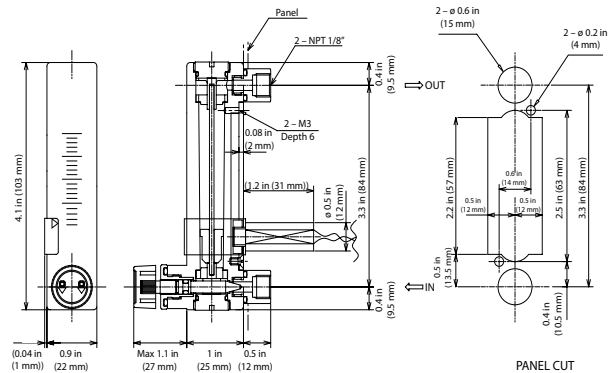
<sup>2</sup>Gases equivalent to Air @ 0 °C 1 atm

# Dimensional Drawing

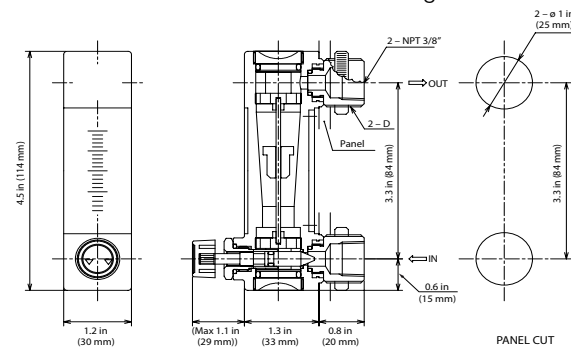
Standard Connection Size NPT 1/4" Small Flowrate



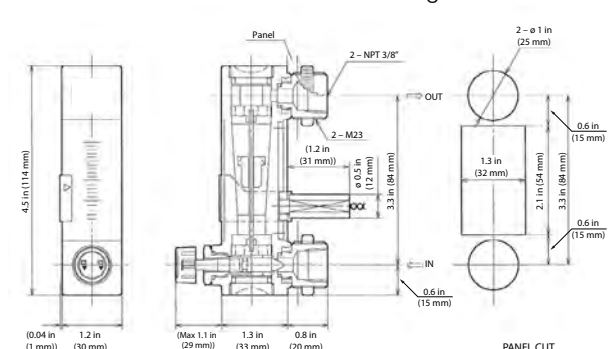
Alarm Outlet Connection Size NPT 1/4" Small Flowrate



Standard Connection Size NPT 3/8" Large Flowrate



Alarm Outlet Connection Size NPT 3/8" Large Flowrate



# Flow Range Alarm Settings

Small Air <sup>1</sup> Flow Rate Table						
Flow Range Code	If No Alarm Output		If LO, LC, HO, or HC alarm output			
	Air or N <sub>2</sub>		Air or N <sub>2</sub>		Alarm Setting Range	
	ft <sup>3</sup> /h	L/min(nor)	ft <sup>3</sup> /h	L/min(nor)	ft <sup>3</sup> /h	L/min(nor)
A	0.4-4.2	0.2-2	N/A	N/A	N/A	N/A
B	1.1-11	0.5-5	N/A	N/A	N/A	N/A
C	2.1-21	1-10	N/A	N/A	N/A	N/A
D	4.2-42	2-20	N/A	N/A	N/A	N/A
E	6.4-64	3-30	N/A	N/A	N/A	N/A
F	11-106	5-50	11-106	5-50	21-85	10-40

Small Water <sup>2</sup> Flow Rate Table						
Flow Range Code	If No Alarm Output		If LO, LC, HO, or HC alarm output			
	Water		Water		Alarm Setting Range	
	Gal/h	L/min	Gal/h	L/min	Gal/h	L/min
1	0.2-2	10-100 ml/min	N/A	N/A	N/A	N/A
2	0.6-6	40-400 ml/min	N/A	N/A	N/A	N/A
3	1.6-16	0.1-1	1.6-16	0.1-1	3.2-13	0.2-0.8
4	3.2-32	0.2-2	3.2-32	0.2-2	6.3-25	0.4-1.6
5	7.9-40	0.5-2.5	7.9-40	0.5-2.5	16-32	1-2
6	4.8-48	0.3-3	4.8-48	0.3-3	10-38	0.6-2.4

Large Air <sup>1</sup> Flow Rate Table						
Flow Range Code	If No Alarm Output		If LO, LC, HO, or HC alarm output			
	Air or N <sub>2</sub>		Air or N <sub>2</sub>		Alarm Setting Range	
	ft <sup>3</sup> /h	L/min (nor)	ft <sup>3</sup> /h	L/min (nor)	ft <sup>3</sup> /h	L/min (nor)
F	11-106	5-50	N/A	N/A	N/A	N/A
G	21-212	10-100	21-212	10-100	42-170	20-80
H	42-424	20-200	42-424	20-200	85-339	40-160
J	64-636	30-300	64-636	30-300	127-509	60-240

Large Water <sup>2</sup> Flow Rate Table						
Flow Range Code	If No Alarm Output		If LO, LC, HO, or HC alarm output			
	Water		Water		Alarm Setting Range	
	Gal/h	L/min	Gal/h	L/min	Gal/h	L/min
6	4.8-48	0.3-3	4.8-48	0.3-3	9.5-38	0.6-2.4
7	7.9-79	0.5-5	7.9-79	0.5-5	16-63	1-4
8	16-159	1-10	16-159	1-10	32-127	2-8

<sup>1</sup>Air measured at 0 °C 1 atm

<sup>2</sup>Liquid equivalent to water density 1.0g/cm<sup>3</sup>, viscosity 1.0cP

# Part Number Selection

Model: P27

## Required Information:

Flow / Direction	1	Bottom rear to top rear (standard)
	Z	Special
Valve	A	None
	B	Bottom
	Z	Special
Alarm Output	1	None
	2	Reed Switch - Contact closes (becomes ON) when value is more than set point
	3	Reed Switch - Contact opens (becomes OFF) when value is more than set point
	4	Reed Switch - Contact closes (becomes ON) when value is less than set point
	5	Reed Switch - Contact opens (becomes OFF) when value is less than set point
	Z	Special
Fluid	A	Water
	B	Air
	C	Nitrogen
	Z	Special
Scale Range	1	Water: 10 - 100 ml/min (Small flow rate type)
	2	Water: 40 - 400 ml/min (Small flow rate type)
	3	Water: 0.1 - 1 L/min (Small flow rate type)
	4	Water: 0.2 - 2.0 L/min (Small flow rate type)
	5	Water: 0.25 - 2.5 L/min (Small flow rate type)
	6	Water: 0.3 - 3.0 L/min (Large flow rate type)
	7	Water: 0.5 - 5.0 L/min (Large flow rate type)
	8	Water: 1 - 10 L/min (Large flow rate type)
	A	Air / N2: 0.2 - 2 L/min (Small flow rate type)
	B	Air / N2: 0.5 - 5 L/min (Small flow rate type)
	C	Air / N2: 1.0 - 10 L/min (Small flow rate type)
	D	Air / N2: 2.0 - 20 L/min (Small flow rate type)
	E	Air / N2: 3.0 - 30 L/min (Small flow rate type)
Connection Type	F	Air / N2: 5.0 - 50 L/min (Large flow rate type)
	G	Air / N2: 10 - 100 L/min (Large flow rate type)
	H	Air / N2: 20 - 200 L/min (Large flow rate type)
	J	Air / N2: 30 - 300 L/min (Large flow rate type)
	Z	Special
	A	NPT thread (Standard with locknuts for front panel mounting)
	Z	Special
Connection Size	1	1/8" (Standard For Small Flowrate Type)
	2	1/4" (Available for small and large flowrate type)
	3	3/8" (Standard For Large Flowrate Type)
	Z	Special

Fluid Name:

Operating Density or Specific Gravity:

Viscosity:

Flowrate

Maximum:

Operating Or Normal:

Scale Range:

Pressure

Maximum:

Operating or Normal:

Temperature

Maximum:

Operating or Normal:

Alarm Settings

Alarm 1:

Alarm 2:

Other Options

**Example: P27 1 A 1 A 1 A 1**

Water density 1.0g/cm<sup>3</sup>, viscosity 1.0cp  
Air @ 0 °C 1 atm

### ⚠ WARNING - USER RESPONSIBILITY

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

This document and other information from Parker-Hannifin Corporation, its subsidiaries and authorized distributors provide product or system options for further investigation by users having technical expertise.

The user, through its own analysis and testing, is solely responsible for making the final selection of the system and components and assuring that all performance, endurance, maintenance, safety and warning requirements of the application are met. The user must analyze all aspects of the application, follow applicable industry standards, and follow the information concerning the product in the current product catalog and in any other materials provided from Parker or its subsidiaries or authorized distributors.

To the extent that Parker or its subsidiaries or authorized distributors provide component or system options based upon data or specifications provided by the user, the user is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the components or systems.

### Offer of Sale

The items described in this document are hereby offered for sale by Parker-Hannifin Corporation, its subsidiaries or its authorized distributors. This offer and its acceptance are governed by the provisions stated in the detailed "Offer of Sale" elsewhere in this document or available at [www.parker.com/offersale](http://www.parker.com/offersale)

# P520 and P530 Series

## Acrylic Flowmeters



Parker P520 and P530 Series acrylic flowmeters are constructed to the same high quality standards as the entire P series line. They represent a cost effective alternative to glass tube flowmeters in less critical applications. The economical machined cast acrylic block construction is ideal for OEM use and the P530 Series includes an inlet precision metering valve for applications requiring flow control.



## Contact Information: Product Features and Options:

Parker Hannifin Corporation  
**Porter Instrument Division**  
245 Township Line Road  
Hatfield, PA 19440

phone 215 723 4000  
fax 215 723 2199  
Industrial@parker.com

[www.parker.com/porter](http://www.parker.com/porter)

- Brass, PVC or stainless steel process connections.
- Metering tube of machined cast acrylic.
- Max temperature: 130°F (54°C) for liquids, 100°F (38°C) for gases.
- Capacities: 7 GPH to 20 GPM for water, 2.6 SCFH to 60 SCFH for air
- Certified calibrations conforming to ISA RP 16.6 available.
- Scales can be produced in any volumetric unit.



ENGINEERING YOUR SUCCESS.

# Specifications

## Materials

<b>Metering Tube</b>	Machined Cast Acrylic
<b>Internal Components</b>	316L Stainless Steel
<b>Inlet/Outlet Fittings</b>	NPT, Horizontal Control Valve Optional
<b>Fitting Material</b>	<b>Standard</b> PVC (Brass for 2C Block Size) <b>Optional</b> 316L Stainless Steel or Brass
<b>Elastomers</b>	<b>Standard</b> EPR <b>Optional</b> Buna, Viton® and Kalrez®

Viton® and Kalrez® are registered trademarks of DuPont Performance Elastomers L.L.C.

## Options

<b>Certified Calibrations</b>	Conform to ISA RP 16.6
<b>Scales</b>	Can be produced in any volumetric unit

## Performance

<b>Capacities</b>	<b>Water</b> 7 GPH to 20 GPM <b>Air</b> 2.6 SCFH to 60 SCFM
<b>Scale</b>	50mm, 75 mm, 100mm, 127mm, 250mm Direct reading
<b>Accuracy</b>	50mm ±6% of Full Scale Flow 75 mm ±4% of Full Scale Flow 100mm ±4% of Full Scale Flow 6C-04, 6C-06 ±7% of Full Scale Flow 127mm ±3% of Full Scale Flow 250mm ±2% of Full Scale Flow
<b>Turndown</b>	10:1 to 12.5:1, unless otherwise indicated
<b>Repeatability</b>	50mm 3% 75 mm 2% 100mm 2% 6C-04, 6C-06 4% 127mm 2% 250mm 1/2%
<b>Maximum Temperature</b>	<b>Gases</b> 100°F (38°C) <b>Liquids</b> 130°F (54°C)
<b>Maximum Pressures</b>	<b>Water</b> 125 psig <b>Air</b> 100 psig
<b>Ambient Temperature</b>	33°F to 125°F (1°C to 52°C)

## Materials of Construction

Model Number	P520	P520	P530	P530
Block Number	2C	3C, 5C, 6C, 7C	2C	3C, 5C, 6C, 7C
<b>Meter Tube</b>	Cast Acrylic	Cast Acrylic	Cast Acrylic	Cast Acrylic
<b>Fittings</b>	– Brass* 316L SS	PVC* Brass 316L SS	– Brass* 316L SS	PVC* Brass 316L SS
<b>O-Rings</b>	EPR* Buna Viton®	EPR* Buna Viton®	EPR* Buna Viton®	EPR* Buna Viton®
<b>Valve Assembly</b>	Not Available	Not Available	Brass* 316L Stainless Steel	Brass* 316L Stainless Steel

\*Standard Construction

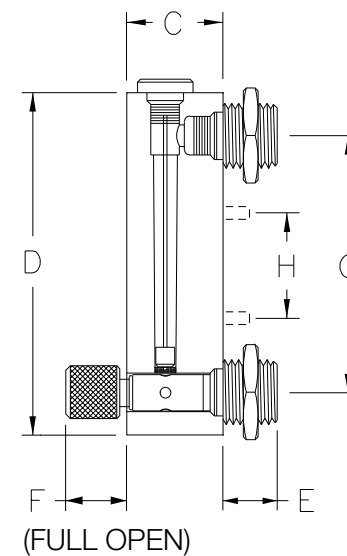
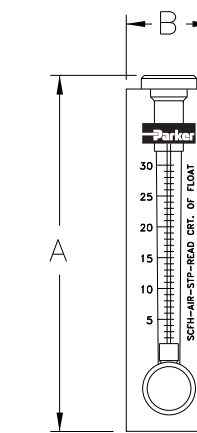
## Connections and Mounting Dimensions

Block Number	Connection Size	Centerline H	Thread J	Diameter L
2C	1/4" FNPT	–	–	0.625
3C	1/2" MNPT x 1/4" FNPT	3	.25 – 20	1
5C	1/2" MNPT x 1/4" FNPT	3.937	.25 – 20	1
6C	1" MNPT	4	.25 – 20	1.375
7C	1/2" FNPT	8.75	.375 – 24	1.25

Block 2C is supplied with .875" hex mounting nuts on plumbing connections.

Blocks 3C, 5C, 6C and 7C have mounting studs depicted in dimension "H" and thread "J." (Mounting nuts not supplied.)

## Order Numbers, Flow Rates and Dimensions



Order Number	Flow Water	Order Number	Flow Air	Dimensions (Inches)						
				A	B	C	D	E	F	G
<b>Block #2C, 50mm (2") Scale</b>										
–	–	2C-01	2.6 SCFH	4.125	1	1.125	4	.50	1.05	3
–	–	2C-03	5 SCFH	4.125	1	1.125	4	.50	1.05	3
–	–	2C-05	10 SCFH	4.125	1	1.125	4	.50	1.05	3
–	–	2C-07	20 SCFH	4.125	1	1.125	4	.50	1.05	3
2C-02	7 GPH	2C-09	30 SCFH	4.125	1	1.125	4	.50	1.05	3
2C-04	12 GPH	2C-11	60 SCFH	4.125	1	1.125	4	.50	1.05	3
2C-06	22 GPH	2C-13	100 SCFH	4.125	1	1.125	4	.50	1.05	3
2C-08	44 GPH	2C-15	180 SCFH	4.125	1	1.125	4	.50	1.05	3
2C-10	60 GPH	2C-17	4 SCFM	4.125	1	1.125	4	.50	1.05	3
2C-12	75 GPH	–	–	4.125	1	1.125	4	.50	1.05	3
<b>Block #3C, 75mm (3") Scale</b>										
3C-02	1 GPM	3C-01	4 SCFM	6.875	1.20	1.35	6.625	1	1.37	5
3C-04	2 GPM	3C-03	8 SCFM	6.875	1.20	1.35	6.625	1	1.37	5
3C-06	3.5 GPM	3C-05	15 SCFM	6.875	1.20	1.35	6.625	1	1.37	5
3C-08	5 GPM	3C-07	23 SCFM	6.875	1.20	1.35	6.625	1	1.37	5
<b>Block #5C, 127mm (5") Scale</b>										
5C-02	1 GPM	5C-01	4 SCFM	8.45	1.20	1.35	8.25	1	1.25	6.437
5C-04	100 GPH	5C-03	6.8 SCFM	8.45	1.20	1.35	8.25	1	1.37	6.437
5C-06	2 GPM	5C-05	8.2 SCFM	8.45	1.20	1.35	8.25	1	1.37	6.437
5C-08	5 GPM	5C-07	22 SCFM	8.45	1.20	1.35	8.25	1	1.37	6.437
5C-10	10 GPH	5C-11	42 SCFH	8.45	1.20	1.35	8.25	1	1.37	6.437
5C-12	20 GPH	5C-13	100 SCFH	8.45	1.20	1.35	8.25	1	1.37	6.437
5C-14	40 GPH	5C-15	175 SCFH	8.45	1.20	1.35	8.25	1	1.37	6.437
<b>Block #6C, 100mm (4") Scale</b>										
6C-02	10 GPM	6C-01	40 SCFM	9.125	1.78	1.812	8.875	1.25	1.875	6.50
6C-04	15 GPM	6C-03	60 SCFM	9.125	1.78	1.812	8.875	1.25	1.875	6.50
6C-06	20 GPM	–	–	9.125	1.78	1.812	8.875	1.25	1.875	6.50
<b>Block #7C, 250mm (10") Scale</b>										
7C-02	2 GPM	7C-01	8 SCFM	14.50	1.78	1.812	14.25	.75	1.75	12.25
7C-04	3.5 GPM	7C-03	14.4 SCFM	14.50	1.78	1.812	14.25	.75	1.75	12.25
7C-06	5 GPM	7C-05	20 SCFM	14.50	1.78	1.812	14.25	.75	1.75	12.25
7C-08	10 GPM	7C-07	42 SCFM	14.50	1.78	1.812	14.25	.75	1.75	12.25

## Ordering Information

Use the following guide to determine the specific product number you require.

The following example describes a P520 flowmeter with brass fittings, EPR O-rings, no valve and a 5" (127mm) scale with 2 GPM water max flow rate.

**Example:** P5201105C06

Meter Series	Fitting Material	O-Ring Material	Valve Material	Order Number
P520 No Valve P530 With Valve	1 Brass 2 PVC 3 316L Stainless Steel	1 Ethylene Propylene Rubber 2 Buna 3 Viton®	0 Without Valve 1 Brass 2 316L Stainless Steel	See Order Numbers, Flow Rates and Dimensions Table

Viton® and Kalrez® is a registered trademark of DuPont Performance Elastomers L.L.C.

 **WARNING – USER RESPONSIBILITY**

**FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.**

This document and other information from Parker-Hannifin Corporation, its subsidiaries and authorized distributors provide product or system options for further investigation by users having technical expertise.

The user, through its own analysis and testing, is solely responsible for making the final selection of the system and components and assuring that all performance, endurance, maintenance, safety and warning requirements of the application are met. The user must analyze all aspects of the application, follow applicable industry standards, and follow the information concerning the product in the current product catalog and in any other materials provided from Parker or its subsidiaries or authorized distributors.

To the extent that Parker or its subsidiaries or authorized distributors provide component or system options based upon data or specifications provided by the user, the user is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the components or systems.

**Offer of Sale**

The items described in this document are hereby offered for sale by Parker-Hannifin Corporation, its subsidiaries or its authorized distributors. This offer and its acceptance are governed by the provisions stated in the detailed "Offer of Sale" elsewhere in this document or available at [www.parker.com/offerofsale](http://www.parker.com/offerofsale).