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# PNEUMATIC ACTUATORS AND ACCESSORIES

High Performance Actuation for Instrumentation Ball Valves

Catalog 4121-PACT | September 2025



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### **Parker Instrumentation Products Division**

provides highly engineered pressure and temperature process control instrumentation and systems. These range from compression tube fittings, cone and thread fittings, needle valves, ball valves, compact stream switching valves to modular process to instrument valve packages. These items are all developed and manufactured to increase our customer's up-time, maintain safety, improve production and quality control.

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# Actuated Ball Valve Assemblies

Parker offers a complete line of Rotork® GT Range double rack and pinion pneumatic actuators with accessories including Soldo® limit switches and Parker® NAMUR mounted solenoid valves for automating Parker ball valves. Actuators are available in 90° and 180° rotation models as double acting or spring return in either normally closed or normally open configurations.

The Rotork GT Range actuator has been proven over a 30-year history in many thousands of installations in diverse applications worldwide. For more detailed technical information on Rotork GT actuators, visit <https://www.rotork.com/en/products/light-duty-fluid-actuators/gt>

For technical information for selecting Parker Ball Valves, refer to *Catalog 4121-BV*.

## Actuator Specifications

Supply Air Pressure Range: 60 psig to 145 psig (4 bar to 10 bar)

Standard Temperature Range: -58 °F to 158 °F (-50 °C to 70 °C)

High Temperature Range (HT): 5 °F to 320 °F (-15 °C to 160 °C)

Buna N nitrile o-rings and Delrin® bushings/bearings

FKM o-rings and Ixef® PARA Polyarylamide bushings/bearings

*Note: Delrin® is a registered trademark of DuPont. Ixef® PARA is the registered trademark of Solvay Group*

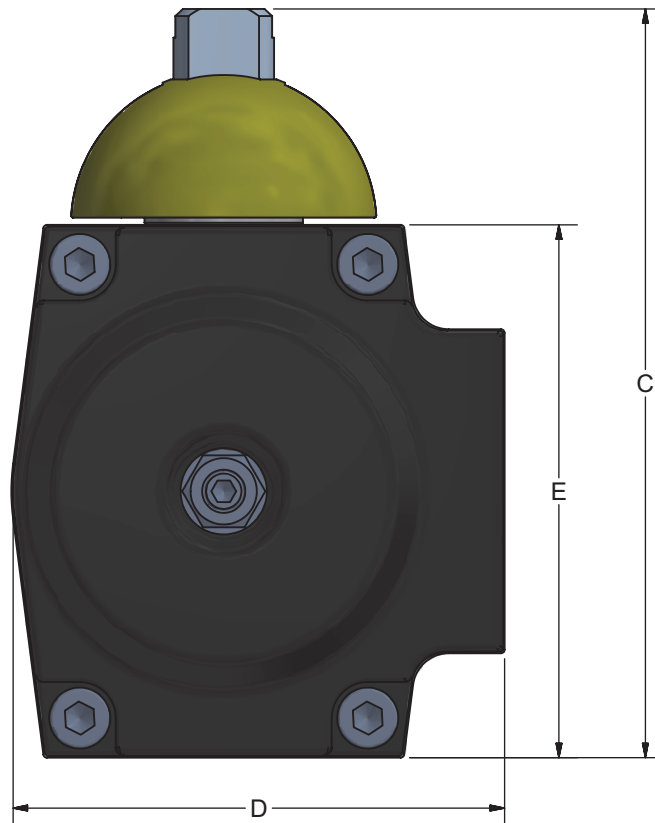
90° Actuators	Code
Normally Closed Spring Return	AC
Normally Open Spring Return	AO
Double Acting	AD

180° Actuators	Code
Spring Return	ACX
Double Acting	ADX

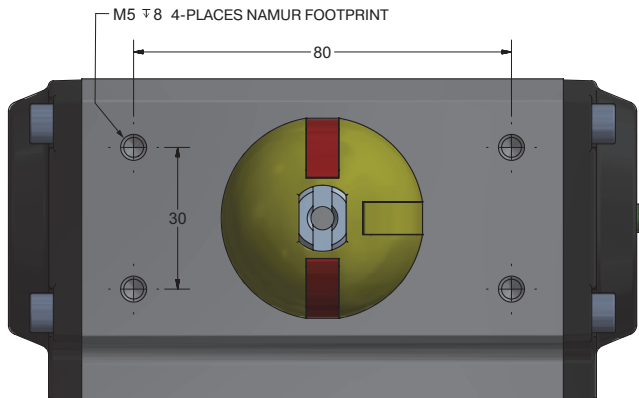
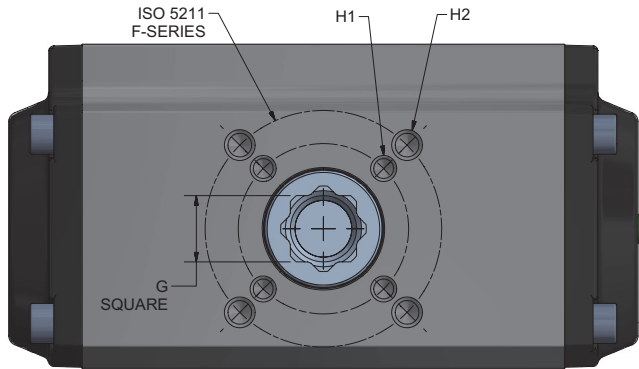
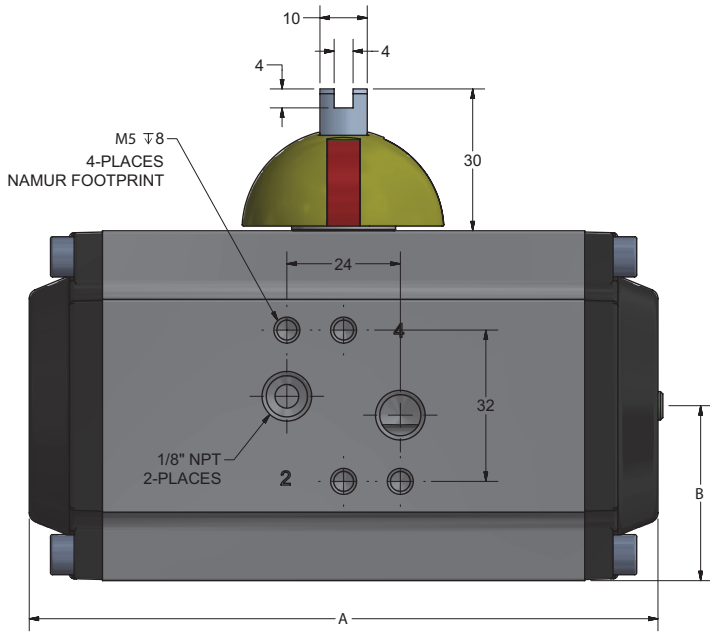


## Actuator Dimensions

Type	Model	A		B		C		D		E		F-Series ISO 5211	H1	H2	G Square
		Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm				
90° Spring Return	AC/AO61	4.6	116	1.4	35	3.7	95	2.4	61	2.6	65	F04	M5	-	9 mm
	AC/AO62	5.2	133	1.5	39	4.1	104	2.7	69	2.9	74	F03/F05	M5	1/4-20 UNC	14 mm
	AC/AO63	5.4	137	1.8	46	4.7	118	3.2	80	3.5	88	F05/F07	1/4-20 UNC	5/16-18 UNC	14 mm
	AC/AO64	6.3	161	2.1	52	5.1	130	3.6	92	3.9	100	F05/F07	1/4-20 UNC	5/16-18 UNC	17 mm
	AC/AO65	7.1	180	2.2	56	5.4	138	3.9	100	4.3	108	F05/F07	1/4-20 UNC	5/16-18 UNC	17 mm
90° Double Acting	AD61	4.6	116	1.4	35	3.7	95	2.4	61	2.6	65	F04	M5	-	9 mm
	AD63	5.4	137	1.8	46	4.7	118	3.2	80	3.5	88	F05/F07	1/4-20 UNC	5/16-18 UNC	14 mm
180° Spring Return	ACX62	7.7	195	1.5	39	4.1	104	2.7	69	2.9	74	F03/F05	M5	1/4-20 UNC	14 mm
	ACX63	7.9	200	1.8	46	4.7	118	3.2	80	3.5	88	F05/F07	1/4-20 UNC	5/16-18 UNC	14 mm
	ACX64	9.3	237	2.1	52	5.1	130	3.6	92	3.9	100	F05/F07	1/4-20 UNC	5/16-18 UNC	17 mm
180° Double Acting	ADX62	7.7	195	1.5	39	4.1	104	2.7	69	2.9	74	F03/F05	M5	1/4-20 UNC	14 mm



## Actuator Dimensions



## Actuator Weight and Displacement

90° Spring Return				
Series	Weight		Displacement	
	lbs.	Kg	cuin	ml
AC/AO61	1.5	0.7	6	98
AC/AO62	2.2	1	8	130
AC/AO63	3.6	1.6	13	210
AC/AO64	5.4	2.5	20	320
AC/AO65	6.5	3	28	450

180° Spring Return				
Series	Weight		Displacement	
	lbs.	Kg	cuin	ml
ACX62	2.9	1.3	16	265
ACX63	4.5	2	26	420
ACX64	6.5	3	39	640

90° Double Acting				
Series	Weight		Displacement	
	lbs.	Kg	cuin	ml
AD61	1.3	0.6	11	180
AD63	3.2	1.5	25	400

180° Double Acting				
Series	Weight		Displacement	
	lbs.	Kg	cuin	ml
ADX62	6.5	3.0	39	640

## Actuator Torques

Normally Closed and Normally Open: 90° Spring Return Pneumatic Actuators									
Series	Position	Spring Torque		Pneumatic Torque					
				60 psig (4.1 bar)		80 psig (5.5 bar)		100 psig (6.9 bar)	
		in-lb	Nm	in-lb	Nm	in-lb	Nm	in-lb	Nm
AC/AO61	Start	56	6.3	45	5.1	78	8.8	107	12.1
	End	37	4.2	26	2.9	59	6.7	88	9.9
AC/AO62	Start	85	9.6	91	10.3	139	15.7	186	21
	End	51	5.8	56	6.3	104	11.8	152	17.2
AC/AO63	Start	117	13.2	131	14.8	202	22.8	273	30.8
	End	80	9	93	10.5	163	18.4	234	26.4
AC/AO64	Start	211	23.8	224	25.3	346	39.1	468	52.9
	End	139	15.7	151	17.1	273	30.8	395	44.6
AC/AO65	Start	297	33.6	335	37.8	512	57.8	689	77.8
	End	192	21.7	228	25.8	405	45.8	582	65.8

180° Spring Return Pneumatic Actuators									
Series	Position	Spring Torque		Pneumatic Torque					
				60 psig (4.1 bar)		80 psig (5.5 bar)		100 psig (6.9 bar)	
		in-lb	Nm	in-lb	Nm	in-lb	Nm	in-lb	Nm
ACX62	Start	106	12	115	13	168	19	221	25
	End	18	2	27	3.1	80	9	133	15
ACX63	Start	150	16.9	150	16.9	230	26	301	34
	End	53	6	44	5	133	15	204	23
ACX64	Start	274	31	257	29	398	45	522	59
	End	89	10.1	71	8	212	24	336	38

Double Acting: 90° Pneumatic Actuators							
Series	Pneumatic Torque						
	60 psig (4.1 bar)		80 psig (5.5 bar)		100 psig (6.9 bar)		
	in-lb	Nm	in-lb	Nm	in-lb	Nm	
AD61	86	9.7	115	13	143	16.2	
AD63	212	24	283	32	354	40	

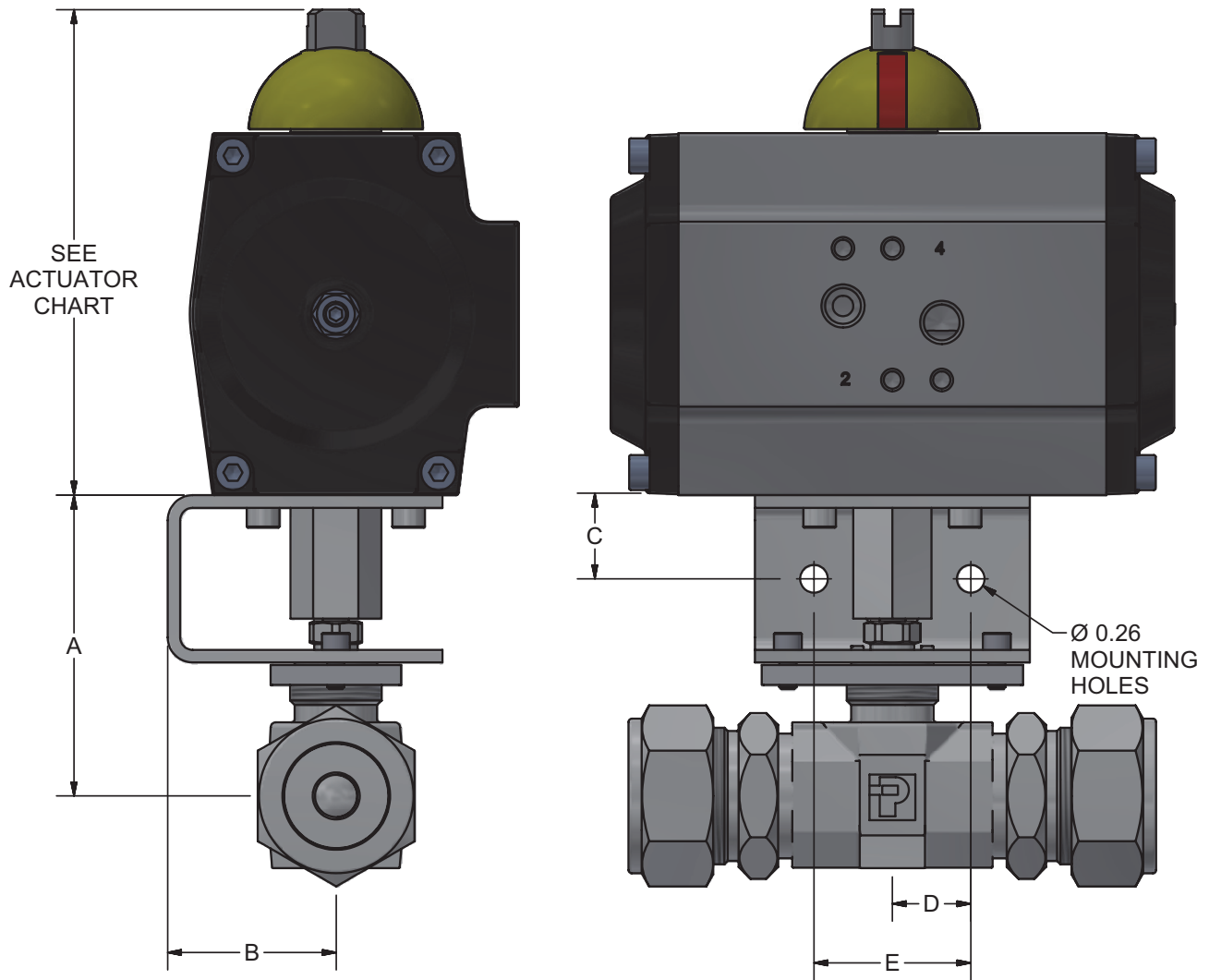
Double Acting: 180° Pneumatic Actuators						
Series	Air Torque					
	60 psig (4.1 bar)		80 psig (5.5 bar)		100 psig (6.9 bar)	
	in-lb	Nm	in-lb	Nm	in-lb	Nm
ADX62	143	16.2	190	21.5	238	26.9

## Recommended Actuator

Valve Series	Double Acting AD/ADX	Spring Return AC/AO/ACX
B2LJ	AD61	AC/AO61
B2LJ2	AD61	AC/AO61
B2XJ	ADX62	ACX62
B2XJ2	ADX62	ACX62
B6LJ	AD61	AC/AO61
B6LJ2	AD61	AC/AO61
B6LS2	AD61	AC/AO61
B6LPKR	AD61	AC/AO61
B6LSPKR	AD61	AC/AO61
B6XJ	ADX62	ACX62
B6XJ2	ADX62	ACX63
B6XS2	ADX62	ACX63
B6XPKR	ADX62	ACX63
B6XSPKR	ADX62	ACX63
B8LJ	AD61	AC/AO61
B8LJ2	AD61	AC/AO63
B8LS2	AD61	AC/AO62
B8LPKR	AD61	AC/AO62
B8LSPKR	AD61	AC/AO62
B8XJ	ADX62	ACX62
B8XJ2	ADX62	ACX64
B8XS2	ADX62	ACX64
B8XPKR	ADX62	ACX64
B8XSPKR	ADX62	ACX64
HB4LPKR	AD61	AC/AO62
HB4LK	AD61	AC/AO61
HB4XPKR	ADX62	ACX63
HB4XK	ADX62	ACX63
MB2A	AD61	AC/AO61
MB2L	AD61	AC/AO61
MB2X	ADX62	ACX62
MB4A	AD61	AC/AO61
MB4L	AD61	AC/AO61
MB4X	ADX62	ACX62
MB6A	AD61	AC/AO61
MB6L	AD61	AC/AO61
MB6X	ADX62	ACX62
SWB4	AD61	AC/AO61
SWB8	AD61	AC/AO63
SWB 12	AD61	AC/AO64
SWB 16	AD63	AC/AO65



## Mounted Actuator Dimensions



Valve Series	A		B		C		D		E	
	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
B2	2.23	56.6	1.61	40.9	0.8	20.3	0.75	19.1	1.5	38.1
B6	2.49	63.2								
B8	2.91	73.9								
MB2	2.33	59.2								
MB4	2.33	59.2	1.25	31.7	0.82	20.1	0.75	19.1	1.5	38.1
MB6	2.48	63								
HB4	2.7	68.6								
SWB4	2.57	65.2								
SWB8	2.79	70.9								
SWB12	2.95	74.9	1.25	31.7	0.82	20.1	0.75	19.1	1.5	38.1
SWB16	3.14	79.7								

## Accessories: NAMUR Solenoid Valves

The Parker High Flow Solenoid Valve is a single solenoid, pilot operated valve available in a 3/2, 5/2 configuration with a locking manual override. An included conversion plate allows for service on either spring return or double acting actuators.

### Valve Specifications

- Body Material: Aluminum
- Seals: FKM
- Inlet Pressure: 60 psig to 145 psig (4 bar to 10 bar)
- Temperature Rating: 14°F to 122°F (-10°C to 50°C)
- Media: Dry or Lubricated Air
- Flow Coefficient:  $C_v = 1.2$
- Air Connections: ¼ NPT

### Solenoid Coil Connections

- DIN 43650 type B for IP65 protection
- ½ NPT conduit with 24" lead wires for NEMA 2, 4, 4X for ordinary locations and NEMA 7 and 9 for hazardous locations.

### Hazardous Location Coil Certifications

#### FM

- Divisions I; Class I, Groups A, B, C, D
- Divisions II; Class I, Groups E, F, and G
- Class 1, Zone 1, Ex m II T4

#### CSA

- Divisions I; Class I, Groups A, B, C, D
- Divisions II; Class I, Groups E, F, and G
- Class 1, Zone 1, Ex m II T4

### Coil Voltages – Ordinary Location

12 VDC; 24 VDC; 120 VAC 50-60 Hz; 240 VAC 50-60 Hz

### Coil Voltages – Hazardous Location

12 VDC; 24 VDC; 120 VAC 60 Hz; 240 VAC 60 Hz

Solenoid coils are rated for 100% continuous duty.

DIN coils have Class F insulation rating.

½" NPT coils have Class H insulation rating.



## Accessories: Limit Switches

Parker offers two models of Rotork® Soldo® limit switches, the SB for safe areas and the SX for hazardous locations. Soldo® limit switches feature a split shaft design with self lubricating bushings, easy-set cams for switch calibration, 90° and 180° high profile visual indicator.

For more detailed technical information on Soldo Limit Switches, visit

<https://www.rotork.com/en/products/valve-automation/soldo-controls-limit-switch-boxes>

### SB Limit Switch Specifications

- Material: Aluminum body with polycarbonate cap
- Cable Entries: Two ½" NPT
- Wiring: Terminal board including pass-thru solenoid valve connections
- Switches: Two SPDT electro-mechanical with silver contacts
- Switch Rating: 5 A @ 250 VAC; 0.6 A @ 125 VDC
- Temperature Rating: -4°F to 176°F (-20°C to 80°C)
- Protection: NEMA 4 and 4X
- Approvals: UL for safe area

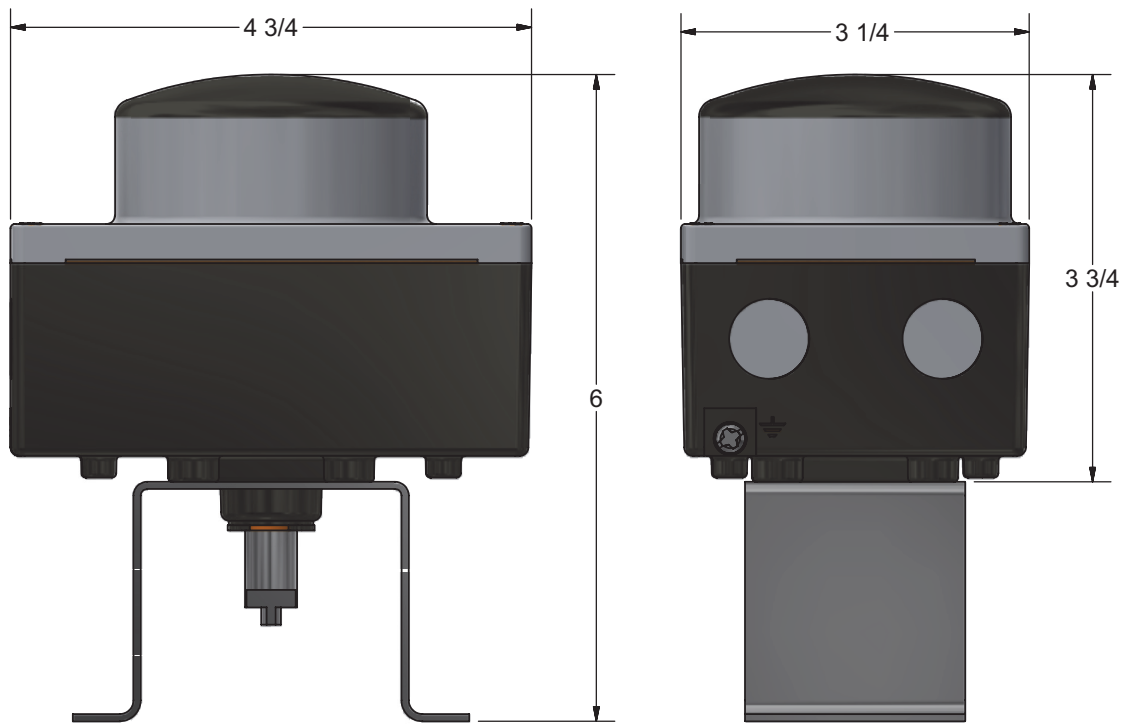


### SX Limit Switch Specifications

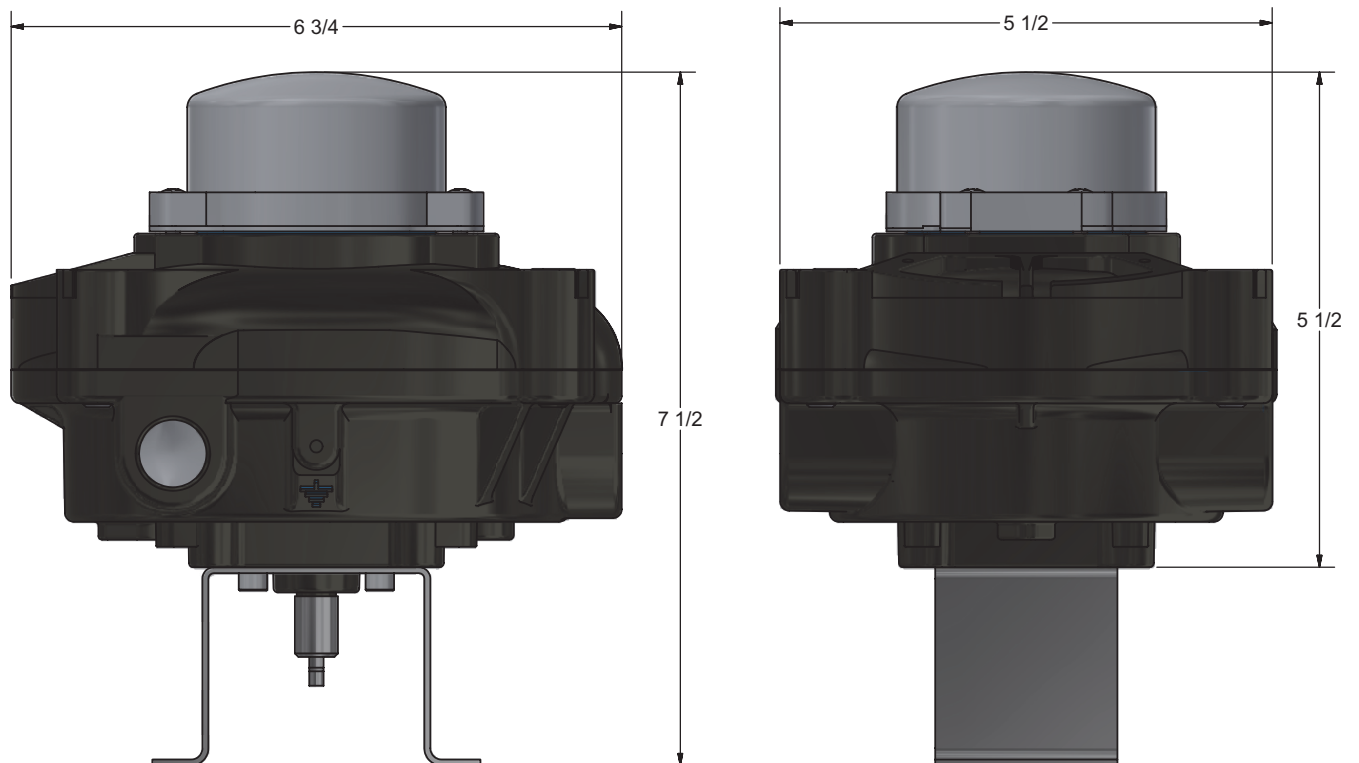
- Material: Heavyduty aluminum enclosure
- Cable Entries: Two ½" NPT
- Wiring: Terminal board including pass-thru solenoid valve connections
- Switches: Two SPDT hermetically sealed magnetic reed switches
- Switch Rating: 1.0 A @ 24 VDC
- Temperature Rating: -4°F to 176°F (-20°C to 80°C)
- Protection: NEMA 4, 4X, 7 and 9
- Approvals: Class I Division 1 Groups C, D Division II Groups A, B, C, D  
Class II Division 2 Groups E, F, G, Division 2 Groups F, G



## Accessories: Limit Switch Dimensions



**SB Limit Switch**



**SX Limit Switch**

## How to Order

### Factory Assembled Valves with Actuators

Select the corresponding actuator model designation based on the valve series from the Recommended Actuator Table on page 7 and add it as a suffix to the valve part number.

**Example 1: 4Z-B6LJ2-SS-AC61** -- This describes a B6 ball valve with a 90° normally closed spring return actuator.

**Example 2: 8Z-B8XJ2-SS-ADX62** -- This describes a B8 ball valve with a 180° double-acting actuator.

**Example 3: 4Z-B6LJ2-SS-AD61-HT** -- This describes a B6 ball valve with a high temperature 90° double-acting actuator.

### Factory Assembled Valves with Actuators, Solenoid Valves, Limit Switches, and other Options

Take the factory assembled valve with actuator part number and **add a suffix** to it based on the following key:

Actuator Accessories: Build your Suffix			
Option	Designator		Notes
Breather Block	(Blank)	None	Redirects instrument air into the spring chamber during venting
	B	Included	
Solenoid Valve	(Blank)	None	
Coil Connection	<b>A</b>	DIN	Safe Area
	B	1/2 NPT	Safe Area
	D	1/2 NPT	Hazardous Area
Coil Voltage	<b>1</b>	24 VDC	Hazardous Area 60 Hz Only
	2	120 VAC	
	3	240 VAC	
Limit Switch	(Blank)	None	
Switch Type	<b>SB</b>	SB Box	Safe Area
	SX	SX Box	Hazardous Area

	Valve with Actuator	Accessories	Description
<i>Example 1</i>	4Z-B6LJ2-SS-AC61	<b>-A1SB</b>	This describes a B6L ball valve with a 90° normally closed spring return actuator with a <b>24 VDC</b> solenoid valve, <b>DIN</b> connection, and with a <b>SB</b> limit switch. Suitable for safe areas.
<i>Example 2</i>	8Z-B8XJ2-SS-ADX62	<b>-B2SB</b>	This describes a B8X ball valve with a 180° double-acting actuator with a 120 VAC solenoid valve, 1/2" NPT connection, and with a SB limit switch. Suitable for safe areas.
<i>Example 3</i>	4Z-HB4LPKR-SS-AC62	<b>-BD1SX</b>	This describes a HB4L ball valve with a 90° normally closed spring return actuator with a Breather Block, a 24 VDC solenoid valve, 1/2" NPT connection, and with a SX limit switch. Suitable for hazardous areas.

# How to Order

## Actuators Only

Select the corresponding actuator model designation based on the valve series from the Recommended Actuator Table on page 7.

*Example 1:* **AC62** -- A spring return normally closed 90° actuator standard temperature range.

*Example 2:* **ADX62** -- A double-acting 180° actuator standard temperature range.

*Example 3:* **AD61-HT** -- A double-acting 90° actuator high temperature range.

## Actuators with Valve Mounting Kits

Specify the valve series and seat material followed by the actuator model designation as determined from the Recommended Actuator Table on page 7.

*Example 1:* **B6XSPKR-ACX63** -- A spring return 180° actuator standard temperature range with a mounting kit for a B6X ball valve with spring loaded peek seats.

*Example 2:* **HB4LPKR-AD62** -- A double-acting 90° actuator standard temperature range with a mounting kit for a HB4L ball valve with peek seats.

*Example 3:* **B8LJ2-AD61-HT** -- A double-acting 90° actuator high temperature range with a mounting kit for a B8L ball valve with PCTFE seats.

## Miscellaneous Options

- A dual valve mount is available for specific combinations of valve and actuator models with spring return or double acting 90° and 180° actuators. Contact the factory for specific valve and actuator combinations at [ipd.support@support.parker.com](mailto:ipd.support@support.parker.com).
- Mounting kits, which include brackets, screws and drive couplings are available. Contact the factory for ordering information at [ipd.support@support.parker.com](mailto:ipd.support@support.parker.com).

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**3. Price; Payment.** The Products set forth in the Quote are offered for sale at the prices indicated in the Quote. Unless otherwise specifically stated in the Quote, prices are valid for thirty (30) days and do not include any sales, use, or other taxes or duties. Seller reserves the right to modify prices for any reason and at any time by giving ten (10) days prior written notice. Unless otherwise specified by Seller, all prices are F.C.A. Seller's facility (INCOTERMS 2020). All sales are contingent upon credit approval and full payment for all purchases is due thirty (30) days from the date of invoice (or such date as may be specified in the Quote). Under any circumstances, Buyer as a deduction, set-off or recoupment of any amount, claim or dispute with Seller. Unpaid invoices beyond the specified payment date incur interest at the rate of 1.5% per month or the maximum al-

lowable rate under applicable law. Seller reserves the right to require advance payment or provision of securities for first and subsequent deliveries if there is any doubt, in Seller's sole determination, regarding the Buyer's creditworthiness or for other business reasons. If the requested advance payment or securities are not provided to Seller's satisfaction, Seller reserves the right to suspend performance or reject the purchase order, in whole or in part, without prejudice to Seller's other rights or remedies, including the right to full compensation. Seller may revoke or shorten any payment periods previously granted in Seller's sole determination. The rights and remedies herein reserved to Seller are cumulative and in addition to any other or further rights and remedies available at law or in equity. No waiver by Seller of any breach by Buyer of any provision of these terms will constitute a waiver by Seller of any other breach of such provision.

**4. Shipment; Delivery; Title and Risk of Loss.** All delivery dates are approximate, and Seller is not responsible for damages or additional costs resulting from any delay. All deliveries are subject to our ability to procure materials from our suppliers. Regardless of the manner of shipment, delivery occurs and title and risk of loss or damage pass to Buyer, upon placement of the Products with the carrier at Seller's facility. Unless otherwise agreed prior to shipment and for domestic delivery locations only, Seller will select and arrange, at Buyer's sole expense, the carrier and means of delivery. When Seller selects and arranges the carrier and means of delivery, freight and insurance costs for shipment to the designated delivery location will be prepaid by Seller and added as a separate line item to the invoice. Buyer shall be responsible for any additional shipping charges incurred by Seller due to Buyer's acts or omissions. Buyer shall not return or repackage any Products without the prior written authorization from Seller, and any return shall be at the sole cost and expense of Buyer.

**5. Warranty.** The warranty for the Products is as follows: (i) Goods are warranted against defects in material or workmanship for a period of twelve (12) months from the date of delivery or 2,000 hours of use, whichever occurs first; (ii) Services shall be performed in accordance with generally accepted practices and using the degree of care and skill that is ordinarily exercised and customary in the field to which the Services pertain and are warranted for a period of six (6) months from the date of completion of the Services; and (iii) Software is only warranted to perform in accordance with applicable specifications provided by Seller to Buyer for ninety (90) days from the date of delivery or, when downloaded by a Buyer or end-user, from the date of the initial download. All prices are based upon the exclusive limited warranty stated above, and upon the following disclaimer: EXEMPTION CLAUSE; DISCLAIMER OF WARRANTY, CONDITIONS, REPRESENTATIONS: THIS WARRANTY IS THE SOLE AND ENTIRE WARRANTY, CONDITION, AND REPRESENTATION, PERTAINING TO PRODUCTS. SELLER DISCLAIMS ALL OTHER WARRANTIES, CONDITIONS, AND REPRESENTATIONS, WHETHER STATUTORY, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THOSE RELATING TO DESIGN, NONINFRINGEMENT, MERCHANTABILITY, AND FITNESS FOR A PARTICULAR PURPOSE. SELLER DOES NOT WARRANT THAT THE SOFTWARE IS ERROR-FREE OR FAULTTOLERANT, OR THAT BUYER'S USE THEREOF WILL BE SECURE OR UNINTERRUPTED, UNLESS OTHERWISE AUTHORIZED IN WRITING BY SELLER. THE SOFTWARE SHALL NOT BE USED IN CONNECTION WITH HAZARDOUS OR HIGH-RISK ACTIVITIES OR ENVIRONMENTS. EXCEPT AS EXPRESSLY STATED HEREIN, ALL PRODUCTS ARE PROVIDED "AS IS".

**6. Claims; Commencement of Actions.** Buyer shall promptly inspect all Products upon receipt. No claims for shortages will be allowed unless reported to Seller within ten (10) days of delivery. Buyer shall notify Seller of any alleged breach of warranty within thirty (30) days after the date the nonconformance is or should have been discovered by Buyer. Any claim or action against Seller based upon breach of contract or any other theory, including tort, negligence, or otherwise must be commenced within twelve (12) months from the date of the alleged breach or other alleged event, without regard to the date of discovery.

**7. LIMITATION OF LIABILITY.** IN THE EVENT OF A BREACH OF WARRANTY, SELLER WILL, AT ITS OPTION, REPAIR OR REPLACE THE NON-CONFORMING PRODUCTS, RE-PERFORM THE SERVICES, OR REFUND THE PURCHASE PRICE PAID WITHIN A REASONABLE PERIOD OF TIME. IN NO EVENT IS SELLER LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES INCLUDING ANY LOSS OF REVENUE OR PROFITS, WHETHER BASED IN CONTRACT, TORT OR OTHER LEGAL THEORY. IN NO EVENT SHALL SELLER'S LIABILITY UNDER ANY CLAIM MADE BY BUYER EXCEED THE PURCHASE PRICE PAID FOR THE PRODUCTS.

**8. Confidential Information.** Buyer acknowledges and agrees that Confidential Information has been and will be received in confidence and will remain the property of Seller. Buyer further agrees that it will not use Seller's Confidential Information for any purpose other than for the benefit of Seller and shall return all such Confidential Information to Seller within thirty (30) days upon request.

**9. Loss to Buyer's Property.** Buyer's Property will be considered obsolete and may be destroyed by Seller after two (2) consecutive years have elapsed without Buyer ordering the Products manufactured using Buyer's Property. Also, Seller shall not be responsible for any loss or damage to Buyer's Property while it is in Seller's possession or control. **10. Special Tooling.** Seller may impose a tooling charge for any Special Tooling. Special Tooling shall be and remain Seller's property. In no event will Buyer acquire any interest in the Special Tooling, even if such Special Tooling has been specially converted or adapted for manufacture of Goods for Buyer and notwithstanding any charges paid by Buyer. Unless otherwise agreed, Seller has the right to alter, discard or otherwise dispose of any Special Tooling or other property owned by Seller in its sole determination at any time.

**11. Security Interest.** To secure payment of all sums due from Buyer, Seller retains a security interest in all Products delivered to Buyer and, Buyer's acceptance of these Terms is deemed to be a Security Agreement under the Uniform Commercial Code. Buyer authorizes Seller as its attorney to execute and file on Buyer's behalf all documents Seller deems necessary to perfect Seller's security interest.

**12. User Responsibility.** Buyer, through its own analysis and testing, is solely responsible for making the final selection of the Products and assuring that all performance, endurance, maintenance, safety and warning requirements of the application of the Products are met. Buyer must analyze all aspects of the application and follow applicable industry standards, specifications, and any technical information provided with the Quote or the Products, such as Seller's instructions, guides and specifications. If Seller provides options of or for Products based upon data or specifications provided by Buyer, Buyer is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the Products. In the event Buyer is not the end-user of the Products, Buyer will ensure such end-user complies with this paragraph.

**13. Use of Products, Indemnity by Buyer.** Buyer shall comply with all instructions, guides and specifications provided by Seller with the Quote or the Products. If Buyer uses or resells the Products in any way prohibited by Seller's instructions, guides or specifications, or Buyer otherwise fails to comply with Seller's instructions, guides and specifications, Buyer acknowledges that any such use, resale, or non-compliance is at Buyer's sole risk. Further, Buyer shall indemnify, defend, and hold Seller harmless from any losses, claims, liabilities, damages, lawsuits, judgments and costs (including attorney fees and defense costs), whether for personal injury, property damage, intellectual property infringement or any other claim, arising out of or in connection with: (a) improper selection, design, specification, application, or any misuse of Products; (b) any act or omission, negligent or otherwise, of Buyer; (c) Seller's use of Buyer's Property; (d) damage to the Products from an external cause, repair or attempted repair by anyone other than Seller, failure to follow instructions, guides and specifications provided by Seller, use with goods not provided by Seller, or opening, modifying, deconstructing, tampering with or repackaging the Products; or (e) Buyer's failure to comply with these Terms, including any legal or administrative proceedings, collection efforts, or other actions arising from or relating to such failure to comply. Seller shall not indemnify Buyer under any circumstance except as otherwise provided in these Terms.

**14. Cancellations and Changes.** Buyer may not cancel or modify, including but not limited to movement of delivery dates for the Products, any order for any reason except with Seller's written consent and upon terms that will indemnify, defend and hold Seller harmless against all direct, incidental and consequential loss or damage and any additional expense. Seller, at any time, may change features, specifications, designs and availability of Products.

**15. Assignment.** Buyer may not assign its rights or obligations without the prior written consent of Seller.

**16. Force Majeure.** Seller is not liable for delay or failure to perform any of its obligations by reason of any events or circumstances beyond its reasonable control. Such circumstances include without limitation: accidents, labor disputes or stoppages, government acts or orders, acts of nature, pandemics, epidemics, other widespread illness, or public health emergency, cyber related disruptions, cyber-attacks, ransomware sabotage, delays or failures in delivery from carriers or suppliers, shortages of materials, sudden increases in the price of raw material or components, shutdowns or slowdowns affecting the supply of raw materials or components, or the transportation thereof, oil shortages or oil price increases, energy crisis, energy or fuel interruption, war (whether declared or not) or the serious threat of same, riots, rebellions, acts of terrorism, embargoes, fire or any reason whether similar to the foregoing or otherwise. Seller will resume performance as soon as practicable after the event of force majeure has been removed. All delivery dates affected by an event of force majeure shall be tolled for the duration of such event of force majeure and rescheduled for mutually agreed dates as soon as practicable after the event of force majeure ceases to exist. The right to allocate capacity is in the Seller's sole discretion. An event of force majeure shall not include financial distress, insolvency, bankruptcy, or other similar conditions affecting one of the parties, affiliates and/or subcontractors. An event of force majeure in the meaning of these Terms means any circumstances beyond Seller's control that permanently or temporarily hinders performance, even where that circumstance was already foreseen. Buyer shall not be entitled to cancel any orders following its claim of an event of force majeure.

**17. Waiver and Severability.** Failure to enforce any provision of these Terms will not invalidate that provision; nor will any such failure prejudice either party's right to enforce that provision in the future. Invalidation of any provision of these Terms shall not invalidate any other provision herein and, the remaining provisions will remain in full force and effect.

**18. Duration.** Unless otherwise stated in the Quote, any agreement governed by or arising from these Terms shall: (a) be for an initial duration of one (1) year; and (b) shall automatically renew for successive one-year terms unless terminated by Buyer with at least 180-days written notice to Seller or if Seller terminates the agreement pursuant to Section 19 of these Terms.

**19. Termination.** Seller may, without liability to Buyer, terminate any agreement governed by or arising from these Terms for any reason and at anytime by giving Buyer thirty (30) days prior written notice. Seller may immediately terminate, in writing, if Buyer: (a) breaches any provision of these Terms, (b) becomes or is deemed insolvent, (c) appoints or has appointed a trustee, receiver or custodian for all or any part of Buyer's property, (d) files a petition for relief in bankruptcy on its own behalf, or one is filed against Buyer by a third party, (e) makes an assignment for the benefit of creditors; or (f) dissolves its business or liquidates all or a majority of its assets.

**20. Ownership of Rights.** Buyer agrees that (a) Seller (and/or its affiliates) owns or is the valid licensee of Seller's IP and (b) the furnishing of information, related documents or other materials by Seller to Buyer does not grant or transfer any ownership interest or license in or to Seller's IP to Buyer, unless expressly agreed in writing. Without limiting the foregoing, Seller retains ownership of all Software supplied to Buyer. In no event shall Buyer obtain any greater right in and to the Software than a right in a license limited to the use thereof and subject to compliance with any other terms provided with the Software. Buyer further agrees that it will not, directly or through intermediaries, reverse engineer, decompile, or disassemble any Software (including firmware) comprising or contained within a Product, except and only to the extent that such activity may be expressly permitted, either by applicable law or, in the case of open source software, the applicable open source license.

**21. Indemnity for Infringement of Intellectual Property Rights.** Seller is not liable for infringement of any Intellectual Property Rights except as provided in this Section. Seller will defend at its expense and will pay the cost of any settlement or damages awarded in an action brought against Buyer based on a third-party claim that one or more of the Products infringes the Intellectual Property Rights of a third party in the country of delivery of the Products by Seller to Buyer. Seller's obligation to defend and indemnify Buyer is contingent on Buyer notifying Seller within ten (10) days after Buyer becomes aware of any such claim, and Seller having sole control over the defense of the claim including all negotiations for settlement or compromise. If one or more Products is subject to such a claim, Seller may, at its sole expense and option, procure for Buyer the right to continue using the Products, replace or modify the Products to render them non-infringing, or offer to accept return of the Products and refund the purchase price less a reasonable allowance for depreciation. Seller has no obligation or liability for any claim of infringement: (i) arising from information provided by Buyer (including Seller's use of Buyer's Property); or (ii) directed to any Products for which the designs are specified in whole or part by Buyer; or (iii) resulting from the modification, combination or use in a system of any Products. The foregoing provisions of this Section constitute Seller's sole and exclusive liability and Buyer's sole and exclusive remedy for claims of infringement of Intellectual Property Rights.

**22. Governing Law.** These Terms, the terms of any Quote, and the sale and delivery of all Products are deemed to have taken place in, and shall be governed and construed in accordance with, the laws of the State of Ohio, as applicable to contracts executed and wholly performed therein and without regard to conflicts of laws principles. Buyer irrevocably agrees and consents to the exclusive jurisdiction and venue of the courts of Cuyahoga County, Ohio with respect to any dispute, controversy or claim arising out of or relating to the sale and delivery of the Products.

**23. Entire Agreement.** These Terms, along with the terms set forth in the Quote, forms the entire agreement between the Buyer and Seller and constitutes the final, complete and exclusive expression of the terms of sale and purchase. In the event of a conflict between any term set forth in the Quote and these Terms, the terms set forth in the Quote shall prevail. All prior or contemporaneous written or oral agreements or negotiations with respect to the subject matter shall have no effect. No modification to these Terms will be binding on Seller unless agreed to in a writing that is signed by an authorized representative of Seller, excluding email correspondence, 'click-wrap' or other purported electronic assent to different or additional terms. Sections 2-25 of these Terms shall survive termination or cancellation of any agreement governed by or arising from these Terms.

**24. No 'Wrap' Agreements/No Authority to Bind.** Seller's clicking any buttons or any similar action, such as clicking "I Agree" or "Confirm," to utilize Buyer's software or webpage for the placement of orders, is NOT an agreement to Buyer's Terms and Conditions. NO EMPLOYEE, AGENT OR REPRESENTATIVE OF SELLER HAS THE AUTHORITY TO BIND SELLER BY THE ACT OF CLICKING ANY BUTTON OR SIMILAR ACTION ON BUYER'S WEBSITE OR PORTAL.

**25. Compliance with Laws.** Buyer agrees to comply with all applicable laws, regulations, and industry and professional standards, including those of the United States of America, and the country or countries in which Buyer may operate, including without limitation the U.S. Foreign Corrupt Practices Act ("FCPA"), the U.S. Anti-Kickback Act ("Anti-Kickback Act"), U.S. and E.U. export control and sanctions laws ("Export Laws"), the U.S. Food Drug and Cosmetic Act ("FDCA"), and the rules and regulations promulgated by the U.S. Food and Drug Administration ("FDA"), each as currently amended. Buyer agrees to indemnify, defend, and hold harmless Seller from the consequences of any violation of such laws, regulations and standards by Buyer, its employees or agents. Buyer represents that it is familiar with all applicable provisions of the FCPA, the Anti-Kickback Act, Export Laws, the FDCA and the FDA and certifies that Buyer will adhere to the requirements thereof and not take any action that would make Seller violate such requirements. Buyer represents and agrees that Buyer will not make any payment or give anything of value, directly or indirectly, to any governmental official, foreign political party or official thereof, candidate for foreign political office, or commercial entity or person, for any improper purpose, including the purpose of influencing such person to purchase Products or otherwise benefit the business of Seller. Buyer further represents and agrees that it will not receive, use, service, transfer or ship any Products from Seller in a manner or for a purpose that violates Export Laws or would cause Seller to be in violation of Export Laws. Buyer agrees to promptly and reliably provide Seller all requested information or documents, including end-user statements and other written assurances, concerning Buyer's ongoing compliance with Export Law.

09/2022





If you have questions about the products contained in this catalog, or their applications, please contact:

**Instrumentation Products Division**

1005 A Cleaner Way  
Huntsville, AL 35805

Ph: **+1 (256) 881-2040**

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**WARNING**

The products described in this catalog can expose you to chemicals, including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.p65warnings.ca.gov](http://www.p65warnings.ca.gov).



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