

# Technical Data for **PCX-SFF** Series Pressure Controllers

**500 TorrA** through **100 PSIA** full scale in absolute pressure applications

Standard specifications. Consult Alicat for available options.



SENSOR AND CONTROL PERFORMANCE	
Pressure accuracy <sup>1</sup>	Standard accuracy: $\pm 0.25\%$ of full scale High-accuracy option: $\pm 0.125\%$ of full scale
Pressure repeatability ( $2\sigma$ ) <sup>2</sup>	$\pm 0.025\%$ of full scale
Steady state control range	0.01 – 100% of full scale (10,000:1 turndown ratio)
Temperature sensitivity	Zero shift: 0.02% full scale per °C (500 torr model), 0.01% full scale per °C (> 500 torr model) Span shift: 0.01% full scale per °C
Operating temperature range	–20 – 85° C
Valve function	Normally closed
Sensor response time	< 1 ms
Typical control response time	As fast as 30 ms, flow rate and valve size dependent, user-adjustable
Typical indication response time	< 10 ms
Typical warm-up time	< 1 s

<sup>1</sup> Stated accuracy is after tare under equilibrium conditions, includes repeatability and linearity.

<sup>2</sup> Under equilibrium conditions. Includes repeatability and linearity.

MECHANICAL			
Valve type	KOXPB/BOXPB	KOXBK/BOXBK	KOXBK/BOXBK
Wetted materials	316L and PCTFE	316L and FFKM	316L and EPDM
Fluid compatibility	Compatible with all non-corrosive gases and liquids, and many corrosive gases <sup>3</sup>		
Leak integrity, external	< 1×10 <sup>-10</sup> atm-cc/sec helium		
Leak integrity, through closed valve	< 1×10 <sup>-3</sup> atm-cc/sec helium at zero set point	< 1×10 <sup>-5</sup> atm-cc/sec helium at zero set point	
Sensor burst pressure	Damage possible above 200 PSIA		
Relative humidity range	0 – 95%, non-condensing		
Ingress protection	IP40		
Mounting orientation sensitivity	None		
Footprint compatibility	SEMI F36 compliant		
Mounting holes	2× M4x0.7 threaded ⚓ 0.315" [8.00 mm]		

<sup>3</sup> Verify wetted material compatibility

POWER AND COMMUNICATIONS	
Digital input and output options	RS-232 Serial and Modbus RTU (default), RS-485 Serial and Modbus RTU, Modbus TCP/IP, DeviceNet, EtherCAT, EtherNet/IP, PROFINET, PROFIBUS, IO-Link
Digital data update rate <sup>4</sup>	40 Hz at 19200 Baud
Analog input and output options	4 – 20 mA, 0 – 5 Vdc, 1 – 5 Vdc, 0 – 10 Vdc
Analog data update rate <sup>4</sup>	1 kHz
Analog signal accuracy	$\pm 0.1\%$ of full scale additional uncertainty
Interactive display	Monochrome LCD or color TFT display with integrated touchpad; simultaneously displays setpoint and pressure.
Display update rate	10 Hz
Electrical connection options	9-pin DB-9 male, 8-pin mini-DIN, 9-pin DB-9 female, 6-pin locking, 8-pin M12, 15-pin DB-15
Power requirements <sup>4</sup>	24 Vdc, 270 mA Add 40 mA if equipped with 4–20 mA output

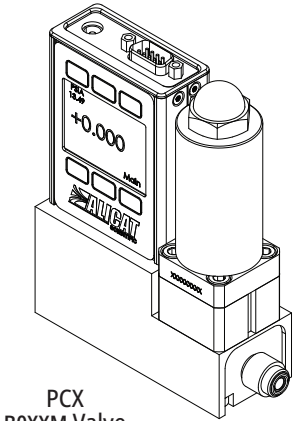
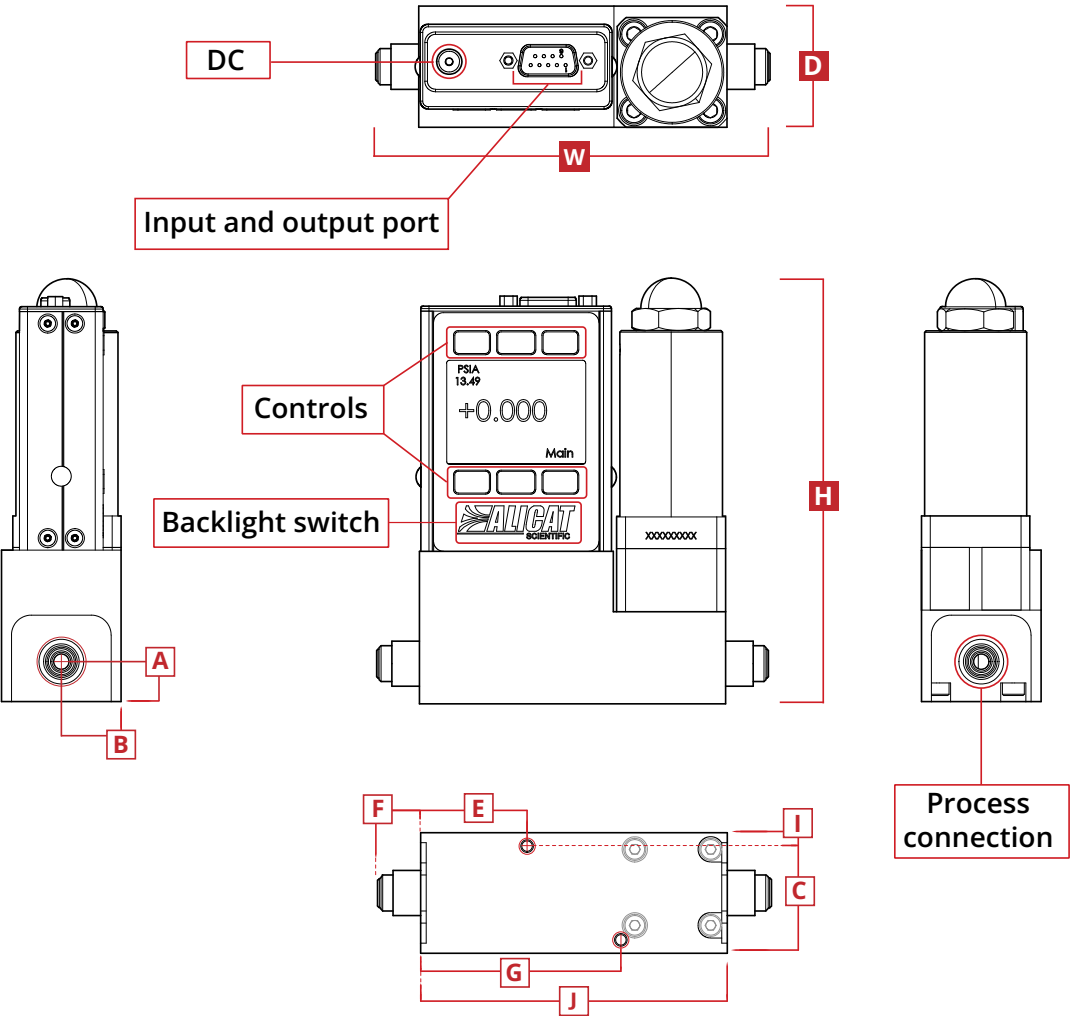
<sup>4</sup> For specific industrial protocol models' power requirements and data transmission specifications, please consult their individual operating bulletins.

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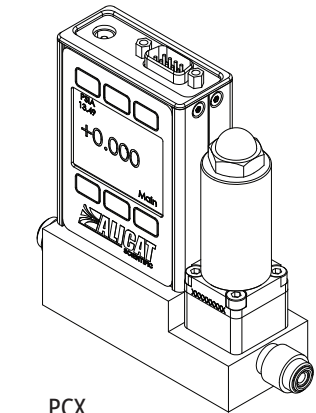
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## Representative Example



PCX  
BOXXM Valve



PCX  
K0XXM Valve

DIMENSIONS												WEIGHT
Valve configuration	Width	Depth	Height	A	B	C	E	F	G	I	J	
Low flow valve (K0XXM)	4.88"	1.50"	4.43"	0.50"	0.75"	1.33"	1.18"	0.68"	2.34"	0.17"	3.52"	≈ 2.4 lb
	124.0 mm	38.1 mm	112.5 mm	12.7 mm	19.1 mm	33.8 mm	30.0 mm	17.3 mm	59.4 mm	4.2 mm	89.4 mm	≈ 1.1 kg
High flow valve (BOXXM)	4.88"	1.50"	5.30"	0.50"	0.75"	1.33"	1.33"	0.53"	2.49"	0.17"	3.82"	≈ 4.0 lb
	124.0 mm	38.1 mm	134.7 mm	12.7 mm	19.1 mm	33.8 mm	33.8 mm	13.5 mm	63.2 mm	4.2 mm	97.0 mm	≈ 1.8 kg