BROOKS® INSTRUMENT

Beyond Measure

PC100 Series

Metal Sealed, Ultra-High Purity Pressure Controllers with Flow Measurement

PC100 Series serves a broad range of applications including electronic pressure regulation, bubbler head pressure control, ballast gas pressure control, pressure balancing and dilution lines in deposition. Designed for semiconductor and MOCVD applications, PC100 Series delivers outstanding performance, reliability, and system simplicity to reduce gas consumption and associated abatement costs. Unlike traditional pressure control devices, the PC125 Pressure Controller leverages the mass flow measurement capability and accuracy of the GF100 Thermal Mass Flow Meter.

Features	Benefits
Enhanced Diagnostics and User Interface	Instantaneous troubleshooting and in-line evaluation resulting in limited service interruption and reduced downtime
High Purity Flow Path	All metal Semi F20 compliant wetted flow path for efficient purging and dry-down. No elastomer seals that can shed particles or allow oxygen permeation
Drop-in Device Functionality	Broad range of product family options to support legacy and next gen system pressure control applications.
Fast Response and Settling Time	Real-time adjustments to compensate for changing system conditions to ensure precise and consistent pressure control.
User Programmable Ramp Function	Highly customizable pressure ramping to avoid rapid changes in system pressure which can disturb or create particles.

Product Specifications

	PC115XD	PC125XD	PC115XU
Performance[1]			
Pressure Control Mode	Downstream		Upstream
Embedded Thermal Flow Sensor	Not Applicable	Ability to Monitor Flow	Not Applicable
Full Scale Pressure Range	1000 Torr		
Full Scale Range	10-10000 sccm	2600-10000 sccm	10-5000 sccm
Pressure Reading			
Accuracy	±1% of reading		
Zero Temperature Coefficient	±0.02% of F.S./°C		
Span Temperature Coefficient	±0.04% of reading/°C		
Pressure Control			
Measurement Range	2-100% F.S.		
Accuracy	<10% F.S. = ±0.2% F.S., 10-100% F.S. = ±1% S.P.		
Response Time	<1 sec typ. (excluding system time constant)		
Flow Reading			
Measurement Range	---	2-100% of F.S.	---
Accuracy	---	>35% ±1% of reading 2-35% ±0.35% F.S.	---
Repeatability	---	±0.2% of F.S.	---
Zero Temp. Coefficient	---	<0.05% of F.S./°C	---
Span Temp. Coefficient	---	<0.08% of reading/°C	---
Zero Stability	---	<0.5% per year	---
Valve Leak-by	<1% of F.S.		
Ratings			
Operating Temperature Range	10 to 50°C		
Transducer Pressure Range	1000 Torr		
Transducer Over Pressure Limit	2000 Torr		
Differential Pressure	45 psid max		150 Torr min
Leak Integrity (external)	1×10^{-10} atm. cc/sec He		

[1] Based on factory N_2 calibration

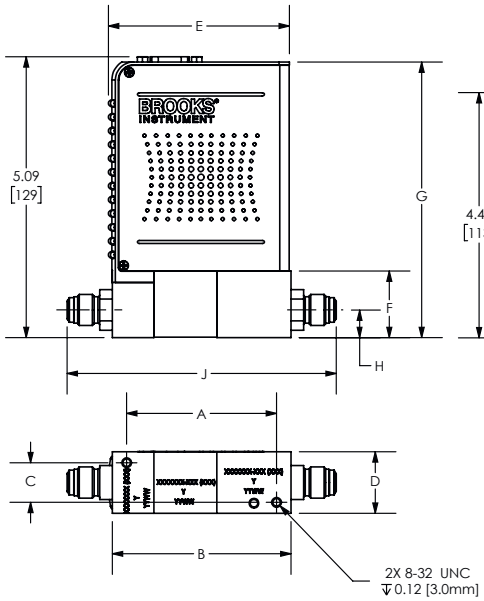
Product Specifications

	PC115XD	PC125XD	PC115XU
Electrical			
Electical Connection	RS485/Analog via 9-Pin "D" connector, DeviceNet™ via 5-pin "M12" connector	5-pin M12 Connector	RS485/Analog via 9-Pin "D" connector, DeviceNet™ via 5-pin "M12" connector
Digital Communications	RS485 (model specific), DeviceNet (model specific)	DeviceNet (model specific)	RS485 (model specific), DeviceNet (model specific)
Diagnostic / Service Port	RS485 via 2.5mm jack		
Power Supply / Consumption	DeviceNet: 545mA max. @ +11-25 Vdc, 250 mA max. @ 24 Vdc RS485/Analog: 6 Watts max @ ±15 Vdc. (±10%) or +24 Vdc (±10%)	DeviceNet: 545mA max. @ +11-25 Vdc, 250 mA max. @ 24 Vdc	DeviceNet: 545mA max. @ +11-25 Vdc, 250 mA max. @ 24 Vdc RS485/Analog: 6 Watts max @ ±15 Vdc. (±10%) or +24 Vdc (±10%)
Diagnostics & Display			
Status Light	MFC Health, Network Status		
Display Type	Top Mount Rotatable Integrated LCD (model specific)		
Viewing Distance Fixed	10 ft.		
Units Displayed	Resolution Flow (%), Temp. (°C), Pressure (Torr, psia, kPa)/0.1 (unit)		
Mechanical			
Valve Type	Normally Closed		
Wetted Materials	SEMI F20 HP Compliant, 316L VIM/VAR, 304 Stainless Steel, Hastelloy C-22		
Surface Finish	5µ inch Ra (0.1 µm Ra)		
Compliance			
EMC	EC Directive 2004/108/EC CE: EN61326: 2006 (FCC Part 15 & Canada IC-subset of CE testing),		
Environmental Compliance	RoHS Directive (2011/65/EU & 2015/863/EU) REACH Directive EC 1907/2006		

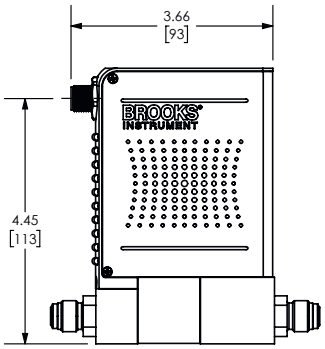
Product Dimensions

PC100 Series - Downport Configurations

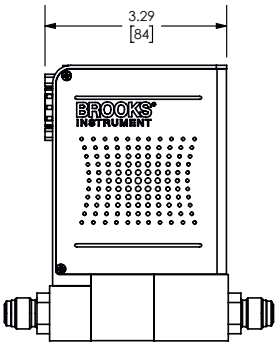
Electrical Connector G1/GX/TX Specific Dimensions



Electrical Connector DX Specific Dimensions



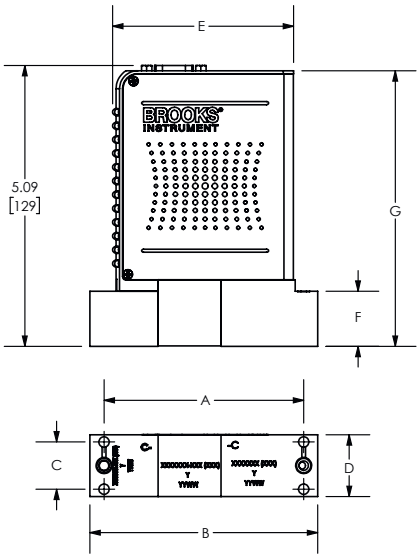
Electrical Connector SX Specific Dimensions



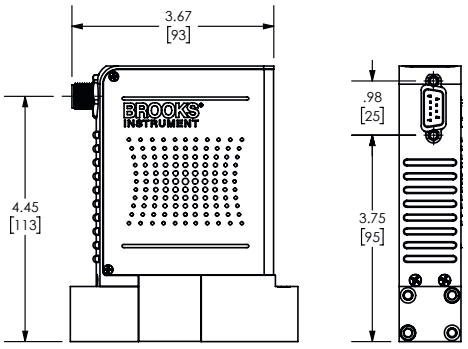
Fitting Option Code	Seal Type	Dim A	Dim B	Dim C	Dim D	Dim E	Dim F	Dim G	Dim H	Dim J
VX	1/4" VCR	69mm [2.72in]	82mm [3.24in]	18mm [0.72in]	28mm [1.12in]	83mm [3.28in]	31mm [1.21in]	127mm [5.00in]	13mm [0.50in]	124mm [4.88in]

PC100 Series - Downport Configurations

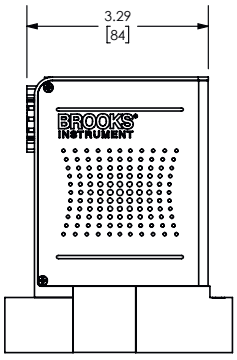
Electrical Connector G1/GX/TX Specific Dimensions



Electrical Connector DX Specific Dimensions



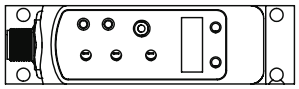
Electrical Connector SX Specific Dimensions



Fitting Option Code	Seal Type	Dim A	Dim B	Dim C	Dim D	Dim E	Dim F	Dim G
CX	C-SEAL	92mm [3.62in]	105mm [4.13in]	22mm [0.86in]	28mm [1.12in]	83mm [3.28in]	25mm [1.00in]	127mm [5.00in]
WX	W-SEAL	92mm [3.62in]	105mm [4.13in]	22mm [0.86in]	28mm [1.12in]	83mm [3.28in]	25mm [1.00in]	127mm [5.00in]
LX	C-SEAL	92mm [3.62in]	105mm [4.13in]	22mm [0.86in]	28mm [1.12in]	83mm [3.28in]	25mm [1.00in]	127mm [5.00in]

Product Connections

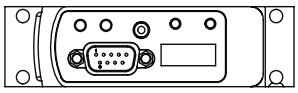
Base I/O Options



Description: Industry standard ODVA compliant DeviceNet interface

Model Code Option: DX

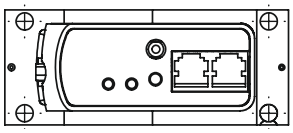
Pin	Description
1	Drain
2	V+ (11-25 Vdc)
3	V-
4	CAN-H
5	CAN-L



Description: Industry standard Analog only interface

Model Code Option: TX

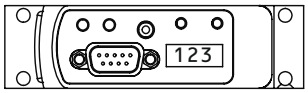
Pin	Description	
1	Valve Control	
2	Output (0-5 Vdc)	
3	+15 Vdc	+24 Vdc
4	Pwr Com	NC
5	-15 Vdc	Pwr Com
6	Setpoint (0-5 Vdc)	
7	Signal Common	
8	No Connection	
9	No Connection	



Description: Industry standard Analog 9-Pin Sub D connector and dual RJ11 RS485 ports

Model Code Option: SX

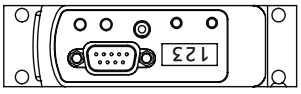
Pin	Description	
1	Valve Control	
2	Output (0-5 Vdc)	
3	+15 Vdc	+24 Vdc
4	Pwr Com	NC
5	-15 Vdc	Pwr Com
6	Setpoint (0-5 Vdc)	
7	Signal Common	
8	Signal Common	
9	Valve Test Point	
RJ11 Pin	**Description**	
3	RS-485 (DX-)	
4	RS-485 (DX+)	



Description: Industry standard Analog / RS485 interface

Model Code Option: G1

Pin	Description	
1	Valve Control	
2	Output (0-5 Vdc)	
3	+15 Vdc	+24 Vdc
4	Pwr Com	NC
5	-15 Vdc	Pwr Com
6	Setpoint (0-5 Vdc)	
7	Signal Common	
8	RS-485 (DX+)	
9	RS-485 (DX-)	

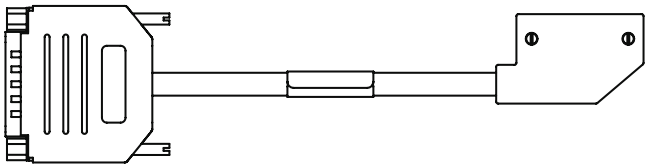


Description: OEM specific Analog / RS485 interface. Display and top plate re-oriented 180°

Model Code Option: GX

Pin	Description	
1	Valve Control	
2	Output (0-5 Vdc)	
3	+15 Vdc	+24 Vdc
4	Pwr Com	NC
5	-15 Vdc	Pwr Com
6	Setpoint (0-5 Vdc)	
7	Signal Common	
8	RS-485 (DX+)	
9	RS-485 (DX-)	

Adapter Cables with Base I/O Option



A range of low profile adapter cables have been developed to support replacing older generation PC's with different pinout configurations. The base PC will be G1, GX or SX configuration, depending on the product being replaced. Other adapter options are available for the PC100 Series. Please contact Customer Service for more information.

Model Code Option: UX

Pin	Description	
9	Valve Off	
6	Output (0-5 Vdc)	
4	+15 Vdc	+24 Vdc
7	Pwr Com	Nc
11	-15 Vdc	Pwr Com
15	Setpoint (0-5 Vdc)	
1,13,14	Signal Common	
2	Zero Alarm	
12	Valve Test Point	
8	Case Ground	
3,5,10	No Connection	

Description: SX base I/O with 7003550 adapter

Model Code Option: FX/JX

Pin	Description	
1	Valve Control*	
2	Output (0-5 Vdc)	
3	+15 Vdc	+24 Vdc
4	Pwr Com	Nc
5	-15 Vdc	Pwr Com
6	Setpoint (0-5 Vdc)	
7	Signal Common	
8	Signal Common	
9	Valve Test Point	

Description: SX base I/O with 7003069 (FX)/7001814 (JX) adapter

Model Code Option: KX

Pin	Description	
3	Valve Control	
2	Output (0-5 Vdc)	
7	+15 Vdc	+24 Vdc
5	Pwr Com	Nc
6	-15 Vdc	Pwr Com
8	Setpoint (0-5 Vdc)	
11,12	Signal Common	
15	Case Ground	
1,4,9,10, 13,14	No Connection	

Description: G1 base I/O with 7003298 adapter

Model Code Option: BX

Pin	Description	
12	Valve Override	
2	Output (0-5 Vdc)	
5	+15 Vdc	+24 Vdc
9	Pwr Com	Nc
6	-15 Vdc	Pwr Com
8	Setpoint (0-5 Vdc)	
1,10	Signal Common	
3,4,7,11	No Connection	
13,14,15	No Connection	

Description: G1 base I/O with 7003590 adapter

Model Code Option: EX

Pin		Description
J		Valve Off
3		Output (0-5 Vdc)
4		+15 Vdc / +24 Vdc
2		Pwr Com / Nc
F		-15 Vdc / Pwr Com
A		Setpoint (0-5 Vdc)
B,C,10		Signal Common
1		Zero Alarm
5,6,8,9		No Connection
I,D,E,H		No Connection
7,G		Key Way
J2	J3	
3	3	Rs-485 (Dx-)
4	4	Rs-485 (Dx+)

Description: GX base I/O with 7003083 adapter

Model Code

Code Description	Code Option	Option Description
I. Base Model Code	PC115	Pressure Controller
	PC125	Pressure Controller with Flow Meter
II. Configurability	X	Specific Gas and Range Required
III. Flow Direction	U	Upstream Pressure Control Mode*
	D	Downstream Pressure Control Mode
IV. Full Scale Pressure Range	1000	Full Scale Pressure Transducer Range, 1000 Torr
V. Full Scale Measurement Unit	T	Torr
VI. Reference Pressure	0045	Downstream Pressure Condition, psia - Default Setting
	0004	Upstream Pressure Condition, psia - Default Setting
VII. Pressure Measurement Unit	P	PSIA
VIII. Full Scale Gas and Flow Range	XXXX XXXX	Specific Gas Code (H_2, N_2, He, Ar) & Range, i.e. "0013" = Nitrogen and "010L" = 10 slpm
IX. Fittings	VX	1-1/8" body width, 1/4" VCR male
	CX	1-1/8" body width, 92mm C Seal
	WX	1-1/8" body width, 92mm W Seal
	LX	1-1/8" body width, 92mm C Seal w/Poke Yoke
X. Communications/Connectors	BX	Cable adapter to 15 pin D Brooks*
	EX	Cable adapter to Card Edge (w/out VTP), RS485 through RJ11 jacks*
	FX	Cable adapter with 9 pin STEC pin-out & jack screws (w/ VTP)*
	GX	9 pin D with RS485; display and overlay 180° orientation*
	G1	9 pin D with RS485*
	JX	Cable adapter with 9 pin STEC pin-out & jack screws (w/ VTP)*
	KX	Cable adapter to MKS 15 pin D*
	SX	9 pin D with STEC pin-out (w/ VTP)*
	TX	9 pin D with UDT9 pin-out*
	UX	Cable adapter to 15 pin D (w/ VTP)*

Option	Power On State	Full Scale Setting	Full Scale Setting	Full Scale Setting	Poll I/O Instance Producer	Poll I/O Instance Consumer	Poll I/O State Transition	External Baud Rate
D0	Idle	Count	Integer	6000h	2	7	Executing	500KB
D1	Idle	Count	Integer	6000h	21	7	Executing	500KB
D2	Idle	SCCM	Float	7FFFh	13	19	Executing	500KB
D3	Idle	Count	Integer	6000h	22	7	Executing	500KB
D4	Executing	Count	Integer	6000h	22	8	Executing	500KB
D5	Idle	Count	Integer	6000h	6	8	Executing	500KB
D6	Idle	Count	Integer	7FFFh	3	7	Executing	500KB
D7	Idle	Count	Integer	7FFFh	6	8	Executing	500KB
D8	Idle	Count	Integer	6000h	3	7	Executing	500KB
D9	Executing	Count	Integer	6000h	2	7	Executing	500KB
DA	Idle	Count	Integer	7FFFh	22	7	Executing	500KB
DB	Idle	Count	Integer	6000h	22	8	Executing	500KB
DC	Idle	Count	Integer	7FFFh	3	7	Idle	500KB
DD	Executing	Count	Integer	7FFFh	22	8	Executing	500KB
DE	Executing	SCCM	Float	6000h	15	19	Executing	500KB

DX	To be defined by Customer Special Request

* For PC115 Only

XI. Customer Special Request	XXXX	Customer Special Request Number

XII. Reference Temperature	000	0°C Reference Calibration (Standard) - Default Setting

XIII. Firmware	XXX	Firmware Revision
	LFW	Latest Firmware Revision
	CSR	Firmware Defined by Customer Special Request in Section XI

Sample Model Code

I	II	III		IV	V	VI	VII		VIII		IX	X		XI		XII		XIII
PC125	X	D	-	1000	T	0045	P	-	0013 010L	-	VX	D0	-	XXXX	-	000	-	LFW

Service and Support

Brooks is committed to assuring all of our customers receive the ideal pressure controllers for their application, along with outstanding service and support to back it up. We operate first class repair facilities located around the world to provide rapid response and support. Each location utilizes primary standard calibration equipment to ensure accuracy and reliability for repairs and recalibration and is certified by our local Weights and Measures Authorities and traceable to the relevant International Standards.

Visit www.BrooksInstrument.com to locate the service location nearest to you.

START-UP SERVICE AND IN-SITU CALIBRATION

Brooks Instrument can provide start-up service prior to operation when required. For some process applications, where ISO-9001 Quality Certification is important, it is mandatory to verify and/or (re)calibrate the products periodically. In many cases this service can be provided under in-situ conditions, and the results will be traceable to the relevant international quality standards.

SEMINARS AND TRAINING

Brooks Instrument can provide customer seminars and dedicated training to engineers, end users, and maintenance persons. Please contact your nearest sales representative for more details. Due to Brooks Instrument's commitment to continuous improvement of our products, all specifications are subject to change without notice.

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Data-Sheet-PC100-EN/2026-08

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