DS-PR-SLA5800-SLAMf-Series-RevB-PC-RT-eng
June, 2016

Data Sheet

SLA5810/20/40 SLAMf10/20 Series

Pressure Controller (Thermal Mass Flow)

Model SLA5810/20/40 *Model SLAMf10/20*

Elastomer Sealed, Digital, Upstream, Downstream, and Remote Transducer Pressure Controllers

Overview

The SLA Series pressure controllers and pressure controlling flowmeters have gained broad acceptance as the standard for accuracy, stability and reliability. These products have a wide pressure measurement and control range and are suitable for a broad range of operating conditions making them well suited for applications in thin film processes, chemical and petrochemical research, laboratory, analytical, fuel cell and life science among others.

Highlights of the SLA Series pressure controller product include: industry leading long term stability, accuracy backed by superior metrology systems and methods using primary flow calibration systems directly traceable to international standards, and a broad range of analog and digital I/O options to suit virtually any application. An independent diagnostic/service port permits users to troubleshoot or change process conditions without removing the pressure controller from service. This product is also available with a NEMA 4X/IP66 approved enclosure, making it perfect for hosedown/washdown applications.

Product Description

Based on the core control technology present in our industry-leading thermal mass flow controllers, Brooks' SLA Pressure Controllers are able to control the pressure of a gas based on a set point signal by replacing the thermal mass flow sensor with a pressure sensor. It utilizes closed-loop control, which eliminates the droop and hysteresis associated with traditional mechanical spring diaphragm pressure regulators. With the wide range of options and features available, the SLA Pressure Controller Series provides users with a single platform to support a broad range of applications.

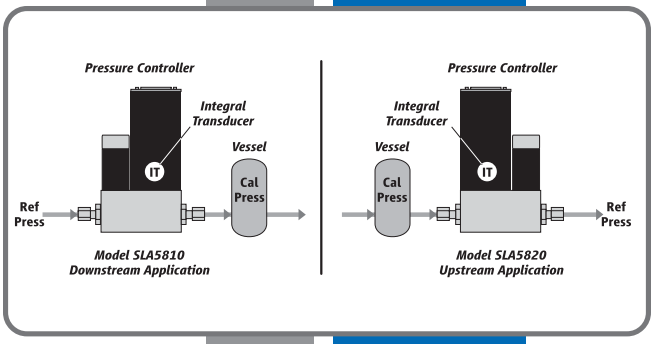
Features and Benefits

Features	Benefits
Closed loop control	Eliminates droop & hysteresis associated with traditional mechanical spring diaphragm pressure regulators
User accessible service port	Simplified installation, start-up, troubleshooting and access to diagnostics provides maximum uptime
Wide pressure range capabilities	Ability to control up to 4500 psig, giving it one of the widest pressure ranges on the market today
Advanced diagnostics	Ensures device is operating within user specified limits for high process yield and maximum uptime
Superior valve technology	Minimum leak-by, maximum turndown, fast response reduces overall gas panel cost and increases throughput
Adaptable mechanical configurations	Easily retrofit to existing systems
Primary standard calibration systems	Ensures measurement accuracy is traceable to international standards
Simple modular design	Easy-to-service elastomer sealed design provides options for factory or field service maximizing uptime and reducing total cost of ownership
IP66/NEMA 4X rated enclosure	Weatherproof protection optional for "Hosedown" applications such as: Food, Beverage, Pharmaceutical & Biotech
Hazardous area approvals	Designed to operate in non-incendive (Division 2/Zone 2) environments

Product Description

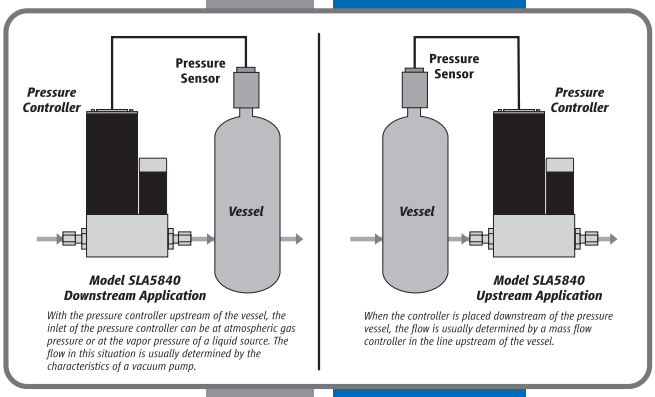
Flexible Pressure Control Capabilities

Brooks' Pressure Controllers can be built for both upstream pressure control and downstream pressure control. These designations are determined by the location of the vessel where the pressure is being controlled. Our upstream pressure controllers can also be considered back pressure regulators, and our downstream pressure controllers can also be considered pressure regulators. In addition, a remote transducer configuration can be used to combine the benefits of pressure control and flow measurement.



Advanced Diagnostics

Pressure Controllers can be some of the most complex components in a gas delivery system, but they are typically critical to the tool's success. When dealing with highly toxic or corrosive gases, removing the pressure controller to determine if it is faulty should be the last resort. In response to this, Brooks pioneered smarter products with embedded self test routines and introduced an independent diagnostic/service port and software to provide the user with a simple interface, for troubleshooting without disturbing pressure controller operation.



Wide Pressure Range

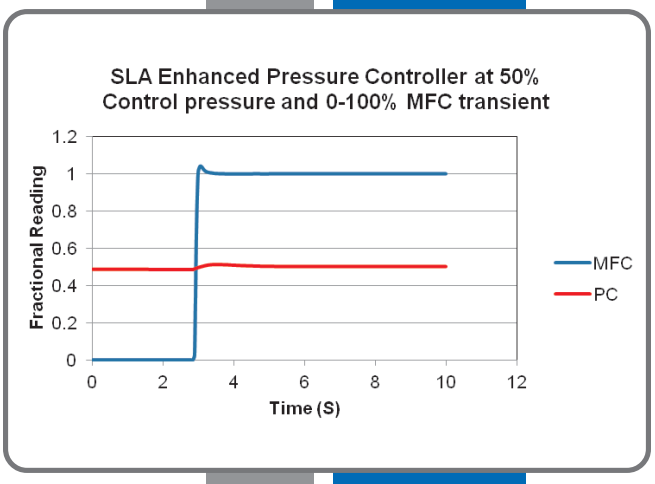
The SLA Pressure Controller Series covers an extremely broad range of pressures. Brooks Pressure Controllers can control pressures ranging from sub-atmosphere all the way to 4500 psi (310 bar), giving it the widest pressure range on the market today! Even with major changes to the flowrate, Brooks Pressure Controllers are able to maintain stable pressure which keeps processes running smoothly and efficiently.

Broad Array of Communication Options

Brooks offers traditional analog options as well as RS-485 digital communications ("S-protocol", based on HART) Brooks also offers control interfaces via digital network protocols like DeviceNet (DeviceNet not available on SLAMf 10/20), a high speed (up to 500k baud) digital communication network, and Profibus. Brooks' communication capabilities and device-profiles have been certified by the ODVA (Open DeviceNet Vendor's Association) and the ITK (Interoperability Test Kit). Other network protocols are in development. Talk to your Brooks representative about your specific needs.

Wash-down Enclosure

The SLAMf Series comes equipped with an IP66 / NEMA4X rated enclosure. This makes these instruments perfect for wash-down or outdoor environments. So no matter how harsh the surroundings, the SLAMf Series keeps the process under control.



Hazardous Area Approvals

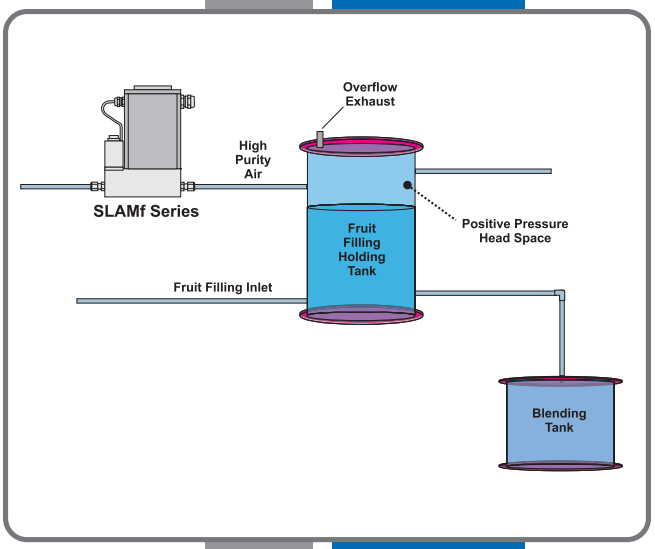
Brooks SLA Pressure Controller products come with various levels of Hazardous Area Approvals. The SLA5800 Series Pressure Controllers are approved for Class I, Division 2/Zone 2 areas, while the SLAMF Series Pressure Controllers have enclosures that can be used in Class II & Class III, Division 2/Zone 2.

Product Applications

Blanketing in Food Processing

Brooks Instrument has a long history of finding unique solutions to ensure that customers are obtaining superior results.

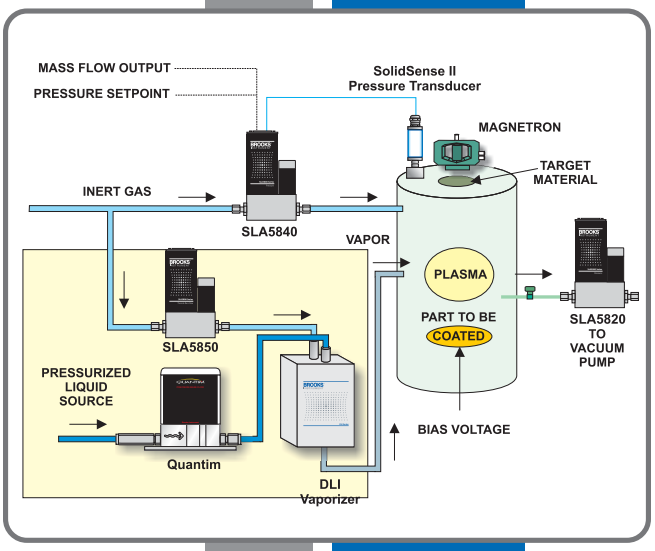
By using a Downstream Pressure Controller, the head pressure in a tank where the liquid level is constantly changing can be kept constant. Our NEMA 4X/IP66 Pressure Controllers prevent unwanted moisture or contamination from damaging the MFC, making it perfect for applications such as food processing.



Vacuum Processes

Brooks offers many products that deliver exceptional performance for vacuum processes. Brooks' pressure cotrollers offer a number of different solutions for these applications, including the ability to use remote signals to maintain the pressure in a vessel. Combining this flexibility with the large variety of digital and analog communication options makes Brooks pressure controllers ideal for bubbler and chamber pressure control.

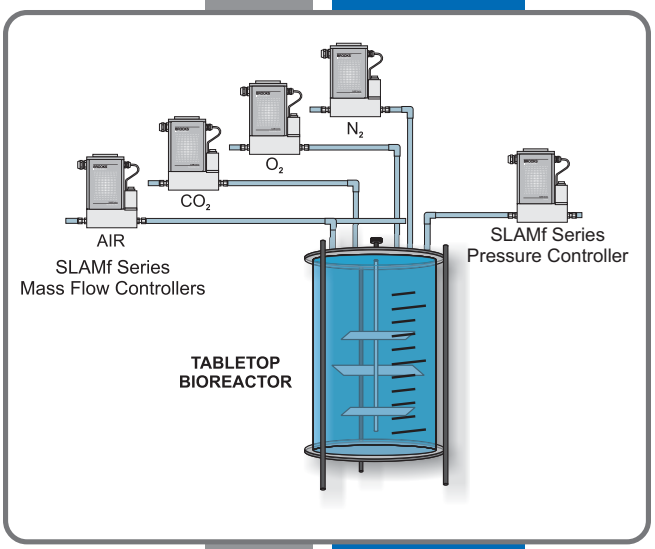
Combining electronic pressure controllers with the Brooks DLI Vaporizer, a highly efficient vaporizer system, will exponentially improve system results. See DLI Vaporizer data sheet for more details on this great product.



Bioreactors

Brooks has earned a leading reputation in controlling of gas flows for bioreactor applications.

In addition to maintaining the levels of dissolved oxygen and the pH of bioreactors, it is also critical that the pressure in the chamber be kept constant during the fermentation process. Brooks' pressure controllers add another dimension of control to bioreactors due to their ability to control a wide range of pressures. These pressure controllers can be offered with a NEMA 4X/IP66 enclosure to prevent dust/moisture ingress and can also be used in a washdown area.



Product Specifications

Flow Ranges and Pressure Ratings:

Pressure Controller Model	Pressure Controller Control Mode	Flow Ranges N2 Eq. Ratings (lpm)		Minimum Full Scale Pressure	Maximum Full Scale Pressure	Pressure Equipment Directive (PED) Module H Category
		Min. F.S.	Max. F.S.	Standard	Standard	
SLA5810/SLAMf10	Downstream (Pressure Regulator)	0.003	50	10 psi	1500 psia/103 bara	Sound Engineering Practices (SEP)
		0.1	10	1500 psi	4500 psia/310 bara	
SLA5820/SLAMf20	Upstream (Back Pressure Regulator)	0.003	50	10 psi	1500 psia/103 bara	Sound Engineering Practices (SEP)
		0.1	10	1500 psi	4500 psia/310 bara	
SLA5840	Remote Transducer Upstream or Downstream	0.003	50	10 psi	1500 psia/103 bara	Sound Engineering Practices (SEP)
		0.1	10	1500 psi	4500 psia/310 bara	

Performance	SLA58510/20 & SLAMf10/20	SLA5840
Pressure Accuracy (Including Linearity and Hysteresis)	±0.25% of Transducer F.S., F.S. > 300 psia ±0.12% of Transducer F.S., F.S. ≤ 300 psia	Dependent on Remote Pressure Transducer
Flow Accuracy (N2 equivalent)	N/A	±0.9% of S.P. (20-100% F.S.) ±0.18% of F.S. (2-20% F.S., 1-20% F.S. from 1-50 lpm)
Control Range	20:1 Typical - Application specific	
Repeatability & Reproducibility	0.20% S.P.	
Linearity	Included in accuracy	
Response Time (Settling time within ±2% F.S. for 0-100% command step)	System dependent	<1 second
Zero Stability	< ± 0.001% F.S. per 30 days	Dependent on Remote Pressure Transducer
Temperature Coefficient	±0.1% of F.S. per °C	Dependent on Remote Pressure Transducer
Pressure Coefficient (Flow Measurement Only)	N/A	±0.03% per psi (0-200 psi N2)
Attitude Sensitivity	The accuracy of the Pressure Sensor is not attitude dependent	

Ratings

Operating Temperature Range	-14 to 65°C (7 to 149°F)	
Transducer Pressure Ratings	100 psia/6.9 bara for < 100 psia full scale 300 psia/20.7 bara for 100-300 psia full scale 3000 psia/206.9 bara for 300-3000 psia full scale 4500 psia/310.3 bara for 3000-4500 psia full scale	Dependent on Remote Pressure Transducer
Leak Integrity (external)	$1x10^{-9}$ atm. cc/sec He	

Mechanical

Valve Type	Normally Closed, Normally Open
Primary Wetted Materials	316L Stainless Steel, High Alloy Stainless Steel, Viton® fluoroelastomers. Optional Buna-N, Kalrez®, Teflon®/Kalrez®, and EPDM

Diagnostics

Status Lights	MFC Health, Network Status
Alarms*	Sensor Output, Control Valve Output, Over Temperature, Power Surge/Sag, Network Interruption
Diagnostic/Service Port	RS485 via 2.5 mm jack (Located under the top cover in SLAMf version)

*Alarm modes are dependent on the communications interface. These are described in the corresponding digital communication interface manual.

Electrical Specifications

Communication Protocol	RS485	Profibus®	DeviceNet® ***
Electrical Connection (SLA58xx)	1 x 15-pin Male Sub-D, (A)	1 x 15-pin Male Sub-D 1 x 9-pin Female Sub-D	1 M12 with threaded coupling nut (B)
Electrical Connection (SLAMf)	PG11 Cable Gland, 1/2" NPT (F) Conduit, M20 x 1.5 Conduit		N/A
Analog I/O	0-5 V, 1-5 V, 0-10 V, 0-20 mA, 4-20 mA		N/A
Power Max./Purge	From +13.5 Vdc to +27 Vdc		From +11 Vdc to +25 Vdc
Power Requirements Watts, Max.	Valve Orifice > 0.032": 8.7 Watts Valve Orifice ≤ 0.032": 5.2 Watts		Valve Orifice > 0.032": 10 Watts Valve Orifice ≤ 0.032": 7 Watts
Voltage Set Point Input Specifications			
Nominal Range	0-5 Vdc, 1-5 Vdc or 0-10 Vdc		N/A
Full Range	(-0.5)-11 Vdc		N/A
Absolute Max.	18 V (without damage)		N/A
Input Impedence	>990 kOhms		N/A
Current Set Point Input Specifications			
Nominal Range	4-20 mA or 0-20 mA		N/A
Full Range	0-22 mA		N/A
Absolute Max.	24 mA (without damage)		N/A
Input Impedence	100 Ohms		N/A
Flow Output (Voltage) Specifications			
Nominal Range	0-5 Vdc, 1-5 Vdc or 0-10 Vdc		N/A
Full Range	(-1)-11 Vdc		N/A
Min Load Resistance	2 kOhms		N/A
Flow Output (Current) Specifications			
Nominal Range	0-20 mA or 4-20 mA		N/A
Full Range	0-22 mA		N/A
Max. Load	380 Ohms		N/A
Analog I/O Alarm Ouput*			
Type	Open Collector		N/A
Max. Closed (On) Current	25 mA		N/A
Max. Open (Off) Leakage	1µA		N/A
Max. Open (Off) Voltage	30 Vdc		N/A
Analog I/O Valve Override Signal Specifications**			
Floating/Unconnected	Instrument controls valve to command set point		N/A
VOR < 0.3 Vdc	Valve Closed		N/A
0.3 Vdc < VOR < 4.8 Vdc	Undefined		N/A
VOR > 4.8 Vdc	Valve Open		N/A
Input Impedence	60 kOhms		N/A
Absolute Max. Input	(-25 Vdc) < VOR < 25 Vdc (without damage)		N/A

*The Alarm Output is an open collector or "contact type" that is CLOSED (on) whenever an alarm is active. The Alarm Output may be set to indicate any one of various alarm conditions.

** The Valve Override Signal (VOR) is implemented as an analog input which measures the voltage at the input and controls the valve based upon the measured reading as shown in this section.

*** Available on SLA5810/20/40 only.

Product Dimensions

SLA5810/20, Thru-Flow, RS485

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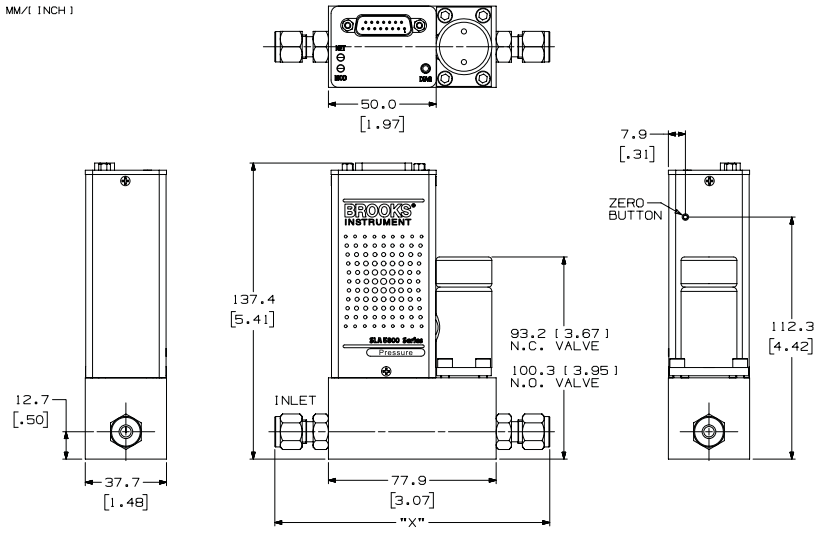
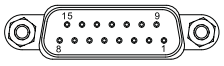
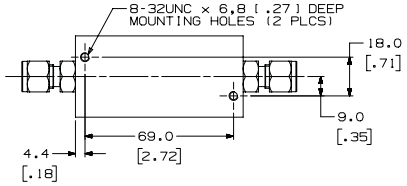




15-PIN SUB-D MALE CONNECTOR	
PIN #	FUNCTION
1	SETPOINT COMMON
2	PRESSURE OUTPUT (0-5V, 1-5V)
3	ALARM OUT
4	PRESSURE OUTPUT (0-20 mA, 4-20 mA)
5	POWER SUPPLY (13.5-27V)
6	NOT CONNECTED
7	SETPOINT INPUT (0-20mA, 4-20mA)
8	SETPOINT INPUT (0-5V, 1-5V)
9	POWER COMMON
10	PRESSURE OUT COMMON
11	NOT CONNECTED
12	VALVE OVERRIDE INPUT
13	AUX INPUT (0-5V, 0-10V)
14	RS-485, B (-), INPUT/OUTPUT
15	RS-485, A (+), INPUT/OUTPUT

FITTING	X" DIMENSION
1/8" TUBE COMP.	*122.7 [4.83]
1/4" TUBE COMP.	*127.8 [5.03]
3/8" TUBE COMP.	*130.8 [5.15]
1/4" VCR	124.0 [4.88]
1/4" VCO	117.6 [4.63]
1/4" NPT-F	125.5 [4.94]
3mm TUBE COMP.	*127.8 [5.03]
6mm TUBE COMP.	*127.8 [5.03]
10mm TUBE COMP.	*131.3 [5.17]
3/8"-1/2" VCR	138.9 [5.47]
3/8"-1/2" VCO	128.8 [5.07]

* OVERALL LENGTH FINGER TIGHT



Note : Aux. Input only used for Remote Transducer Pressure Controllers.

SLA5810/20, Thru-Flow, Profibus

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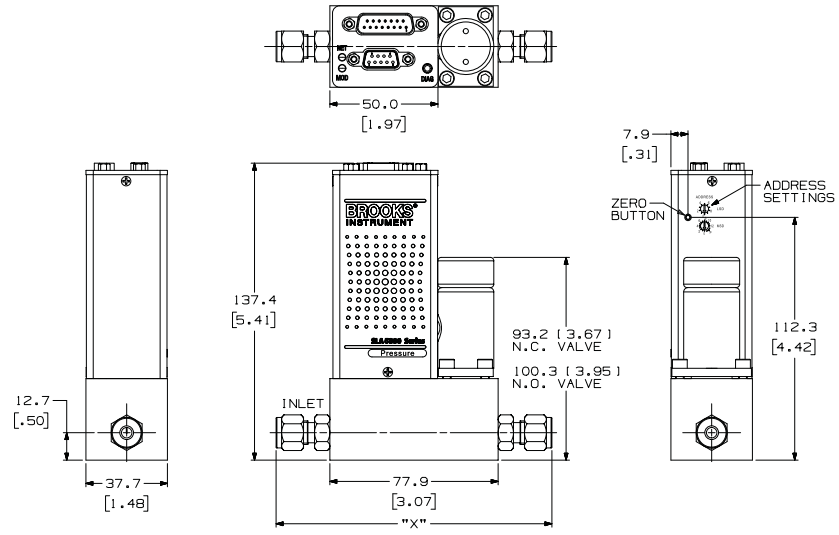
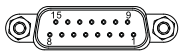
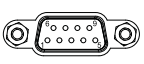




15-PIN SUB-D MALE CONNECTOR	
PIN #	FUNCTION
1	SETPOINT COMMON
2	PRESSURE OUTPUT (0-5V, 1-5V, 0-10V)
3	ALARM OUT
4	PRESSURE OUTPUT (0-20mA, 4-20mA)
5	POWER SUPPLY (13.5-27V)
6	NOT CONNECTED
7	SETPOINT INPUT (0-20mA, 4-20mA)
8	SETPOINT INPUT (0-5V, 1-5V, 0-10V)
9	POWER COMMON
10	PRESSURE OUT COMMON
11	NOT CONNECTED
12	VALVE OVERRIDE INPUT
13	AUX INPUT (0-5V, 0-10V)
14	NOT CONNECTED
15	NOT CONNECTED



9-PIN SUB-D FEMALE CONNECTOR	
PIN #	FUNCTION
1	NOT CONNECTED
2	NOT CONNECTED
3	RXD/TXD - B - red wire
4	NOT CONNECTED
5	GROUND
6	+5Vdc
7	NOT CONNECTED
8	RXD/TXD - A - green wire
9	NOT CONNECTED

FITTING	X" DIMENSION
1/8" TUBE COMP.	*122.7 [4.83]
1/4" TUBE COMP.	*127.8 [5.03]
3/8" TUBE COMP.	*130.8 [5.15]
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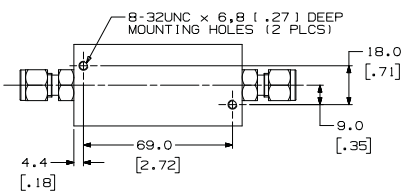

Note : Aux. Input only used for Remote Transducer Pressure Controllers.

Product Dimensions (continued)

SLA5810/20, Thru-Flow, DeviceNet

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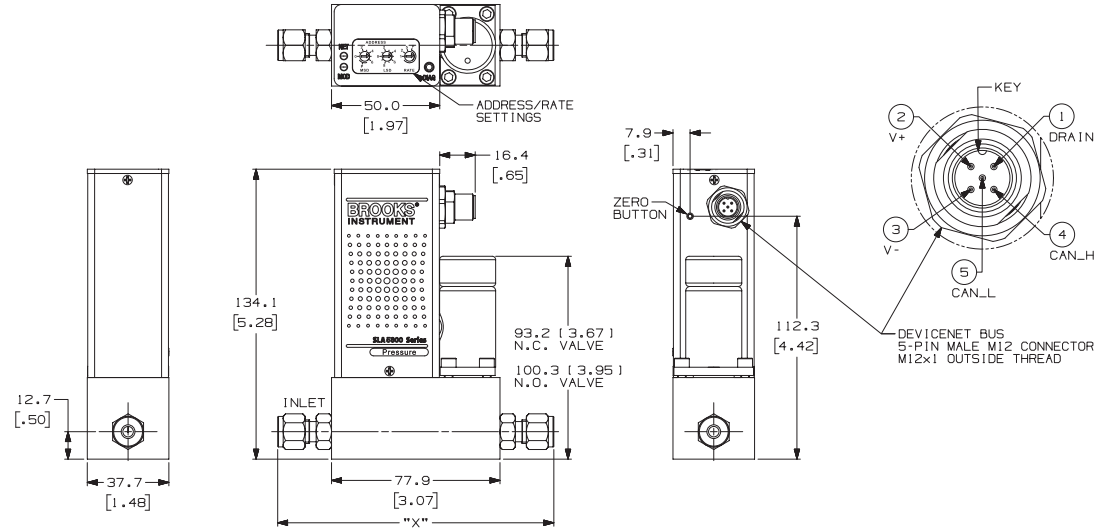

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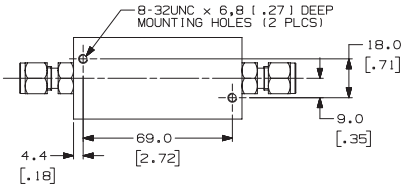

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SLA5840, Thru-Flow, Profibus

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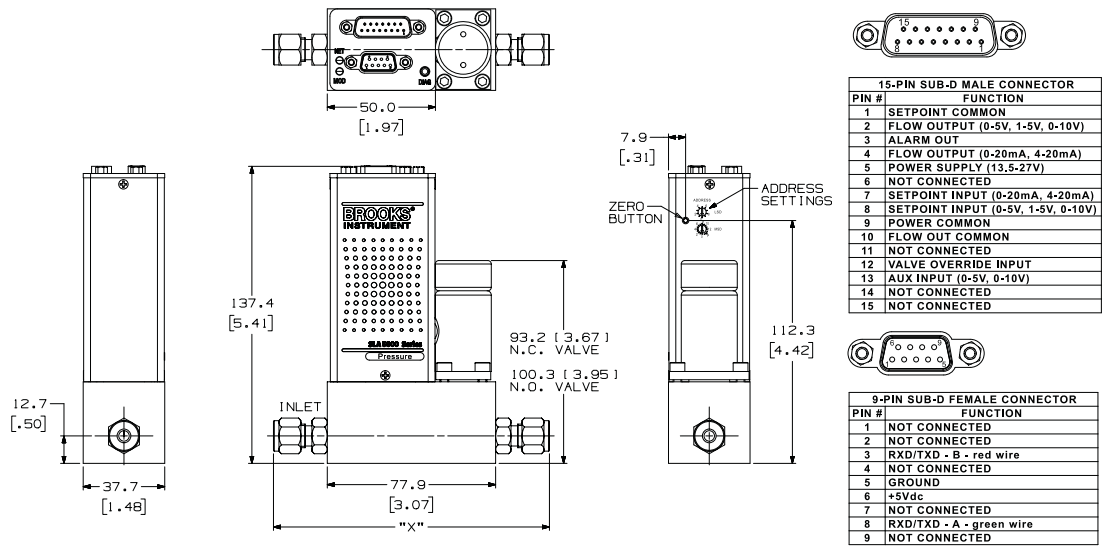

15-PIN SUB-D MALE CONNECTOR	
PIN #	FUNCTION
1	SETPOINT COMMON
2	FLOW OUTPUT (0-5V, 1-5V, 0-10V)
3	ALARM OUT
4	FLOW OUTPUT (0-20mA, 4-20mA)
5	POWER SUPPLY (13.5-27V)
6	NOT CONNECTED
7	SETPOINT INPUT (0-20mA, 4-20mA)
8	SETPOINT INPUT (0-5V, 1-5V, 0-10V)
9	POWER COMMON
10	FLOW OUT COMMON
11	NOT CONNECTED
12	VALVE OVERRIDE INPUT
13	AUX INPUT (0-5V, 0-10V)
14	NOT CONNECTED
15	NOT CONNECTED

9-PIN SUB-D FEMALE CONNECTOR	
PIN #	FUNCTION
1	NOT CONNECTED
2	NOT CONNECTED
3	RXD/TXD - B - red wire
4	NOT CONNECTED
5	GROUND
6	+5Vdc
7	NOT CONNECTED
8	RXD/TXD - A - green wire
9	NOT CONNECTED

FITTING	X" DIMENSION
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1/4" TUBE COMP.	*127.8 [5.03]
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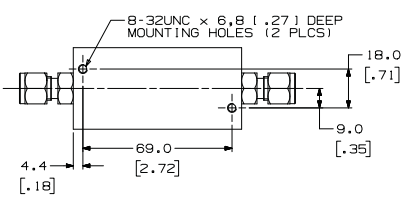

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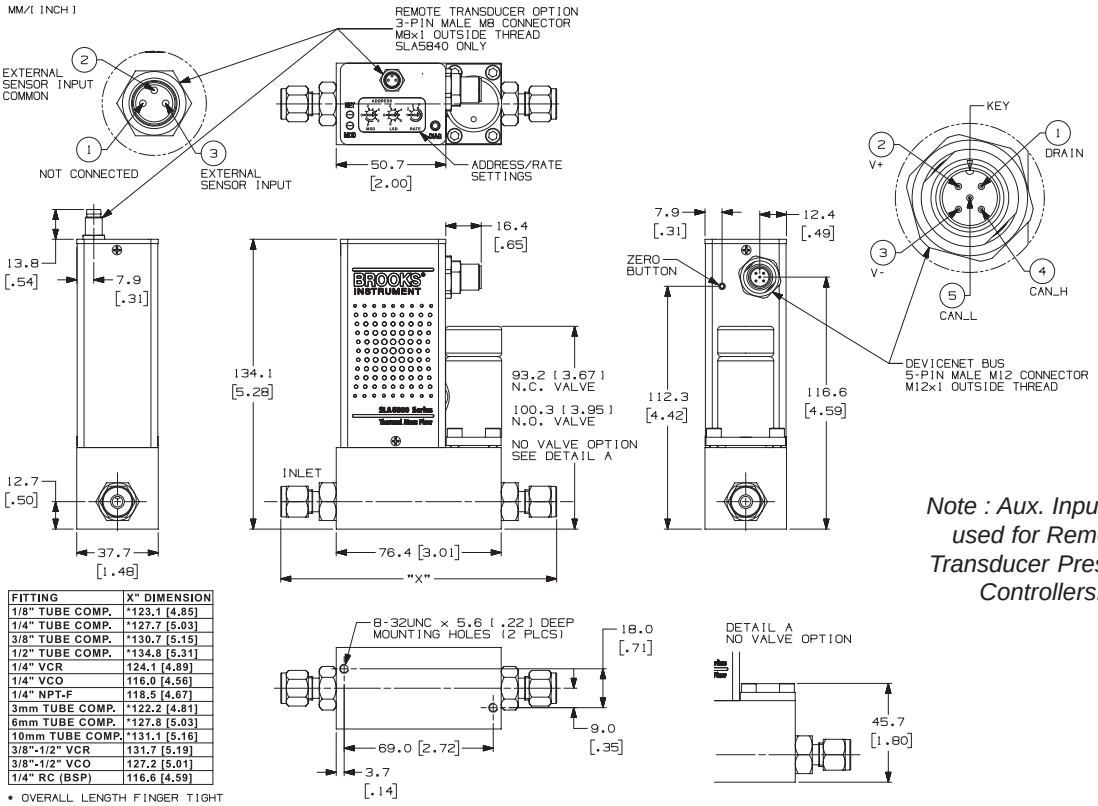
Product Dimensions (continued)

SLA5840, Thru-Flow, DeviceNet



FITTING	"X" DIMENSION
1/8" TUBE COMP.	*123.1 [4.85]
1/4" TUBE COMP.	*127.7 [5.03]
3/8" TUBE COMP.	*130.7 [5.15]
1/2" TUBE COMP.	*134.8 [5.31]
1/4" VCR	124.1 [4.89]
1/4" VCO	116.0 [4.56]
1/4" NPT-F	118.5 [4.67]
3mm TUBE COMP.	*122.2 [4.81]
6mm TUBE COMP.	*127.8 [5.03]
10mm TUBE COMP.	*131.1 [5.16]
3/8"-1/2" VCR	131.7 [5.19]
3/8"-1/2" VCO	127.2 [5.01]
1/4" RC (BSP)	116.6 [4.59]

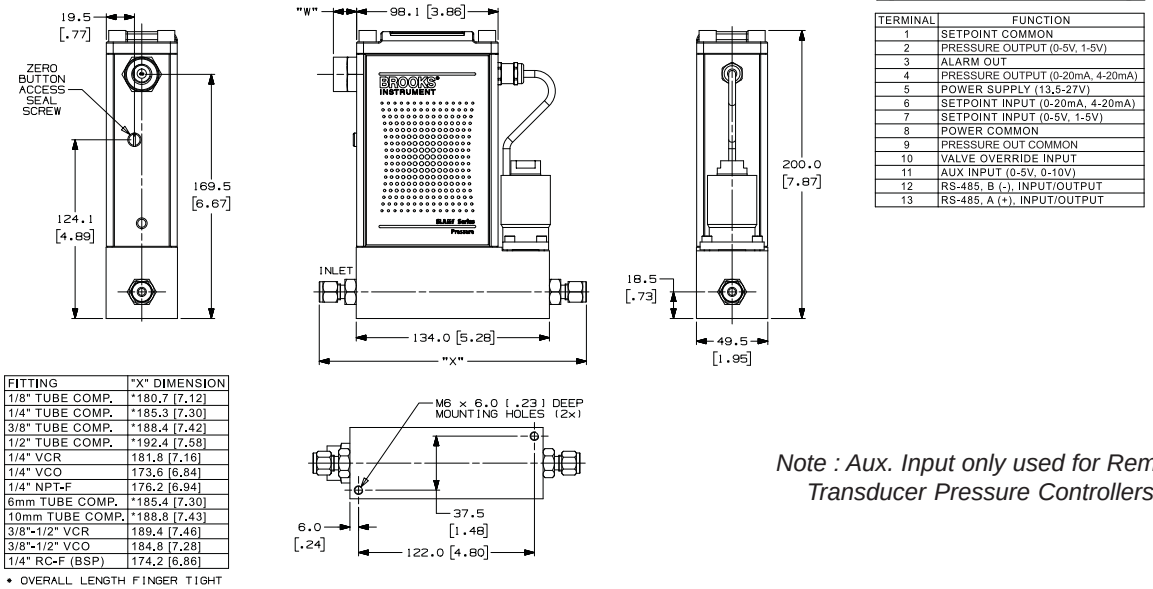
* OVERALL LENGTH FINGER TIGHT

Note : Aux. Input only used for Remote Transducer Pressure Controllers.

SLAMf10/20, Thru-Flow, RS485

MM/[INCH]

CABLE CONNECTOR	"W" DIMENSION
CABLE GLAND 0.20 [5.1] TO 0.39 [9.9] DIA. CABLE	28.6 [1.12]
1/2" NPT-F CONDUIT	16.5 [0.65]
M20x1.5 (F) CONDUIT	12.5 [0.49]



TERMINAL	FUNCTION
1	SETPOINT COMMON
2	PRESSURE OUTPUT (0-5V, 1-5V)
3	ALARM OUT
4	PRESSURE OUTPUT (0-20mA, 4-20mA)
5	POWER SUPPLY (13.5-27V)
6	SETPOINT INPUT (0-20mA, 4-20mA)
7	SETPOINT INPUT (0-5V, 1-5V)
8	POWER COMMON
9	PRESSURE OUT COMMON
10	VALVE OVERRIDE INPUT
11	AUX INPUT (0-5V, 0-10V)
12	RS-485, B (-), INPUT/OUTPUT
13	RS-485, A (+), INPUT/OUTPUT

FITTING	"X" DIMENSION
1/8" TUBE COMP.	*180.7 [7.12]
1/4" TUBE COMP.	*185.3 [7.30]
3/8" TUBE COMP.	*188.4 [7.42]
1/2" TUBE COMP.	*192.4 [7.58]
1/4" VCR	181.8 [7.16]
1/4" VCO	173.6 [6.84]
1/4" NPT-F	176.2 [6.94]
6mm TUBE COMP.	*185.4 [7.30]
10mm TUBE COMP.	*188.8 [7.43]
3/8"-1/2" VCR	189.4 [7.46]
3/8"-1/2" VCO	184.8 [7.28]
1/4" RC-F (BSP)	174.2 [6.86]

* OVERALL LENGTH FINGER TIGHT

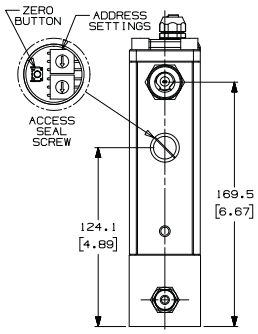
Note : Aux. Input only used for Remote Transducer Pressure Controllers.

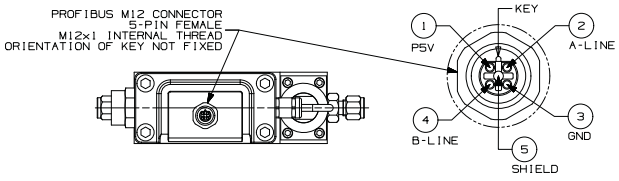
Product Dimensions (continued)

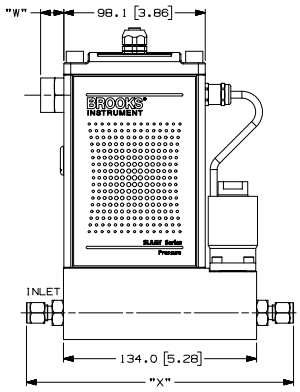
SLAMf10/20, Thru-Flow, Profibus

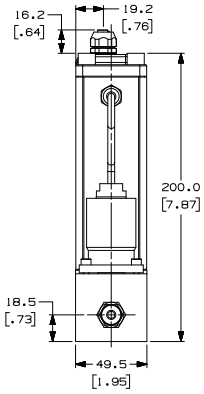
MM/[INCH]

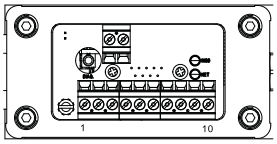
CABLE CONNECTOR	"W" DIMENSION
CABLE GLAND 0.20 [5.1] TO 0.39 [9.9] DIA. CABLE	28.6 [1.12]
1/2" NPT-F CONDUIT	16.5 [0.65]
M20x1.5 (F) CONDUIT	12.5 [0.49]











TERMINAL	FUNCTION	
1	POWER SUPPLY (13,5-27V)	
2	VALVE OVERRIDE INPUT	
3	POWER COMMON	
4	AUX COMMON	
5	AUX INPUT (0-5V, 0-10V)	
TERMINAL	PROFIBUS M12 CONNECTOR WIRES TO TERMINALS 6-10	
6	P5V	(BROWN)
7	RXD/TXD - B-LINE	(RED)
8	GROUND	(BLUE)
9	RXD/TXD - A-LINE	(GREEN)
10	SHIELD	(GRAY)

FITTING	"X" DIMENSION
1/8" TUBE COMP.	*180.7 [7.12]
1/4" TUBE COMP.	*185.3 [7.30]
3/8" TUBE COMP.	*188.4 [7.42]
1/2" TUBE COMP.	*192.4 [7.58]
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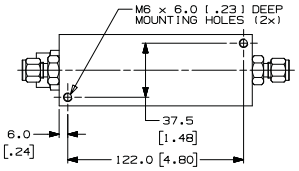
* OVERALL LENGTH FINGER TIGHT



Note : Aux. Input only used for Remote Transducer Pressure Controllers.

Model Code

Code	Description	Code Option	Option Description
I.	Base Model Numbers	**SLA**	Smart Link Advantage
II.	Package / Finish Specifications	**58**	Standard Elastomer Series
		MF	Standard Elastomer Series (NEMA 4X/IP66 Housing)
III.	Function	**1**	Downstream Pressure Controller
		2	Upstream Pressure Controller
		4	Remote Transducer Pressure Controller (SLA58xx only)
IV.	Gas or Range	**0**	3 ccm - 50 lpm
V.	Digital I/O Communication (SLA58xx Pressure Controllers)	**A**	None (select applicable analog I/O)
		D	DeviceNet I/O (with 5-pin micro connector) (Only on SLA5810/20/40)
		P	Profibus (2x sub-D)
		S	RS485 (select applicable analog I/O)
V.	Digital I/O Communication (SLAMfxx Pressure Controllers)	**A**	None (select applicable analog I/O)
		P	Profibus (5-pin female M12, M20 x 1.5 conduit)
		R	Profibus (5-pin female M12, PG11 cable gland)
		T	Profibus (5-pin female M12, 1/2" NPT (F) conduit)
		S	RS485 (select applicable analog I/O)
VI.	Mechanical Connection	**1A**	Without adapters, 9/16" - 18 UNF
		1B	1/4" tube compression
		1C	1/8" tube compression
		1D	3/8" tube compression
		1E	1/4" VCR
		1F	1/4" VCO
		1G	1/4" NPT
		1H	6mm tube compression
		1J	10mm tube compression
		1L	3/8"-1/2" VCR
		1M	3/8"-1/2" VCO
		1P	1/2" tube compression
		1T	1/4" RC (BSP)
		1Y	3mm tube compression
		B1	1/4" tube compression w/filter
		C1	1/8" tube compression w/filter
		D1	3/8" tube compression w/filter
		E1	1/4" VCR w/filter
		F1	1/4" VCO w/filter
		G1	1/4" NPT w/filter
		H1	6mm tube compression w/filter
		J1	10mm tube compression w/filter
		L1	3/8"-1/2" VCR w/filter
		M1	3/8"-1/2" VCO w/filter
		P1	1/2" tube compression w/filter
		T1	1/4" RC (BSP) w/filter
		Y1	3mm tube compression w/filter
VII.	O-ring Material	**A**	Viton
		B	Buna
		C	PTFE
		D	Kalrez
		E	EPDM
		J	FDA/USP Class VI - Viton
		L	FDA/USP Class VI - EPDM
VIII.	Valve Seat	**B**	Viton
		C	Buna
		D	Kalrez
		E	EPDM
		F	PTFE
		G	Metal (SLA5810/20/40 Only)
IX.	Valve Type	**1**	Normally closed (≤ 1500 psi)
		4	Normally closed High Pressure (1500 - 4500 psi)
		5	Normally open (SLA5810/20 Only) (≤ 1500 psi)

Model Code (continued)

Code	Description	Code Option	Option Description		
X.	Analog I/O Communications (SLA58xx Pressure Controllers)	A	None - Digital Communications only		
		B	0-5 Volt	0-5 Volt	
		C	4-20 mA	4-20 mA	
		L	1-5 Volt	1-5 Volt	
		M	0-20 mA	0-20 mA	
		0	0-10 Volt	0-10 Volt	
		1	0-5 Volt	4-20 mA	
		2	0-5 Volt	0-20 mA	
		3	4-20 mA	0-5 Volt	
		4	0-20 mA	0-5 Volt	
		9	0-10 Volt	0-5 Volt	
X.	Analog I/O Communications (SLAMfxx Pressure Controllers)	A	None - Digital Communications only		
		E	4-20 mA	0-5 Volt	PG11 Gland
		F	0-5 Volt	0-5 Volt	PG11 Gland
		G	4-20 mA	4-20 mA	PG11 Gland
		H	0-5 Volt	4-20 mA	PG11 Gland
		I	0-5 Volt	0-20 mA	PG11 Gland
		J	0-5 Volt	0-5 Volt	1/2" NPT (F) Conduit
		K	4-20 mA	4-20 mA	1/2" NPT (F) Conduit
		N	0-5 Volt	4-20 mA	M20 x 1.5 Conduit
		O	0-5 Volt	0-20 mA	M20 x 1.5 Conduit
		P	4-20 mA	0-5 Volt	M20 x 1.5 Conduit
		Q	0-20 mA	0-5 Volt	M20 x 1.5 Conduit
		R	1-5 Volt	1-5 Volt	PG11 Gland
		S	0-20 mA	0-20 mA	PG11 Gland
		T	1-5 Volt	1-5 Volt	1/2" NPT (F) Conduit
		U	0-20 mA	0-20 mA	1/2" NPT (F) Conduit
		V	0-5 Volt	0-5 Volt	M20 x 1.5 Conduit
		W	1-5 Volt	1-5 Volt	M20 x 1.5 Conduit
		X	0-20 mA	0-20 mA	M20 x 1.5 Conduit
		Y	4-20 mA	4-20 mA	M20 x 1.5 Conduit
		Z	0-20 mA	0-5 Volt	PG11 Gland
		5	0-5 Volt	4-20 mA	1/2" NPT (F) Conduit
		6	0-5 Volt	0-20 mA	1/2" NPT (F) Conduit
		7	4-20 mA	0-5 Volt	1/2" NPT (F) Conduit
		8	0-20 mA	0-5 Volt	1/2" NPT (F) Conduit
XI.	Power Supply Inputs	1	±15 Vdc		
		2	24 Vdc		
XII.	Output Enhancements	A	Standard response		
		B	Fast response		
XIII.	Certification	1	Safe Area		
		2	For Zone II Atex/IECEx		

Sample Standard Model Code

I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII
SLA	58	5	0	A	1A	A	B	1	B	1	A	1

Certifications

Certifications - SLA58XX

Mark	Agency	Certification	Applicable Standard	Details
c UL us	UL (Recogonized)	Class I, Div 2, Group A, B, C, D Class I, Zone 2, IIC T4 Class II, Zone 22	UL & CSA Standards	E73889 Vol 3, Sec 4
Ex	ATEX	II 3 G Ex nA IIC T4 Gc	EN60079-0:2012 EN 60079-15:2010	KEMA 04ATEX 1118X
	IECEx	II 3 G Ex nA IIC T4 Gc	IEC 60079-0:2011 IEC 60079-15:2010	IECEx DEK 14.0072X
KCs	KOSHA	Ex nA IIC T4		15-AV4BO-0641 15-AV4BO-0640
CE	CE	EMC Directive 2014/30/EU Directive 2011/65/EU	EN:61326-1:2013	EMC RoHS

Certifications (Continued)

Certifications -SLAMfxx

Mark	Agency	Certification	Applicable Standard	Details
	UL (Recogonized)	Class I, Div 2, Group A, B, C, D Class I, Zone 2, IIC T4 Class II, Zone 22 IP66	UL & CSA Standards	E73889 Vol 3, Sec 4
	UL (Listed)	Class I, Div 2, Group A, B, C, D Class I, Zone 2, IIC T4 Class II, Zone 22 IP66	UL & CSA Standards	E73889 Vol 1, Sec 25
	ATEX	II 3 G Ex nA IIC T4 Gc II 3 D Ex tc IIIC T 85 °C Dc IP66	EN 60079-0 : 2012 + A11 : 2013 EN 60079-15 : 2010 EN 60079-31 : 2014	KEMA 04ATEX1290 X
	IECEx	Ex nA IIC T4 Gc Ex tc IIIC T 85 °C Dc IP66	IEC 60079-0 : 2011 + Corr. 2012 + Cor. 2013 IEC 60079-15 : 2010 IEC 60079-31 : 2013	IEC KEM 07.0043X
	KOSHA	Ex nA IIC T4		15-AV4BO-0638 15-AV4BO-0639
CE	CE	EMC Directive 2014/30/EU Directive 2011/65/EU	EN:61326-1:2013	EMC RoHS

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Brooks Instrument
407 West Vine Street
P.O. Box 903
Hatfield, PA 19440-0903 USA
T (215) 362 3700
F (215) 362 3745
E-Mail BrooksAm@BrooksInstrument.com
www.BrooksInstrument.com

Brooks Instrument
Neonstraat 3
6718 WX Ede, Netherlands
T +31 (0) 318 549 300
F +31 (0) 318 549 309
E-Mail BrooksEu@BrooksInstrument.com

Brooks Instrument
ITW Japan Ltd.
1-4-4 Kitasuna Koto-Ku
Tokyo, 136-0073 Japan
T +81 3 5633 7100
F +81 3 5633 7101
E-Mail Sales-Japan@BrooksInstrument.com