BROOKS® INSTRUMENT

Beyond Measure

5850EMH Series

Metal Sealed, High Temperature Thermal Mass Flow Controllers for Gases

Originally developed and manufactured in Japan as a solution to support the growing fiber optic cable industry in Asia, the 585xEMH Series of high temperature mass flow controllers continue to be manufactured using the same supply chain and manufacturing process by Brooks Instrument in our Hatfield, Pennsylvania, USA facility. The 585xEMH Series remains the mass flow controller of choice for critical silicon precursor and dopant vapor delivery in optical fiber preform manufacturing.

The Brooks Model 585xEMH series offers state of the art performance in high temperature gas measurement and control. It combines the outstanding leak integrity of metal seals with a variety of options which allow maximum application flexibility. The heart of the 585xEMH series is the highly stable sensor which provides an electrical output signal linear with flow rate. This signal is used for indicating, recording and/or control purposes without the need for an auto-zero circuit.

Features

High leak integrity (less than 10^{-11} Pa.m3/s (10^{-10} atm. cc/s) He)	Helium leak check ports
Normally closed valve (normally open valve optional)	Wide flow range (0.003 – 100 slpm)
Particulate-free	Electrically-activated valve override
High purity 316L Stainless Steel	Low command flow cutoff
High flow capability (100 slpm N_2)	TTL compatible “valve off” function

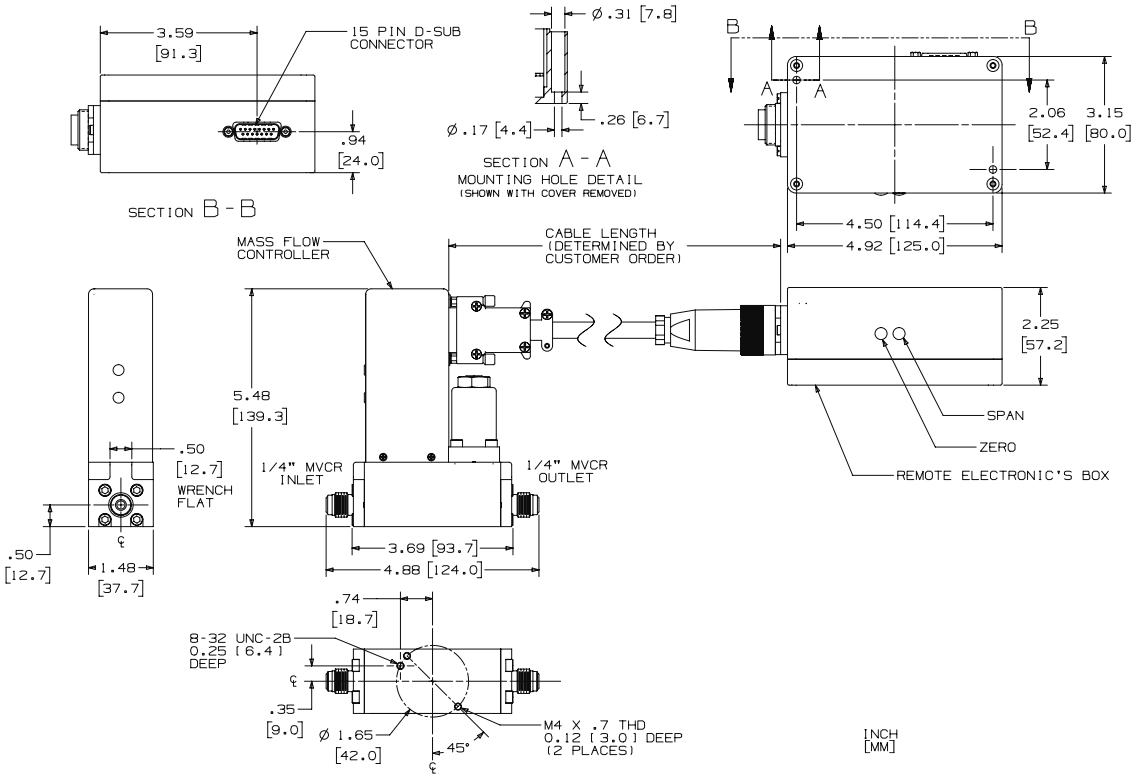
Product Specifications

	5850EMH	5851EMH
Performance		
Flow Range	0.003 - 30 lpm (N_2 equivalent)	10 - 100 lpm (N_2 equivalent)
Flow Accuracy	±1% full scale	
Control Range	5 - 100%	
Repeatability	±0.25% of rate	
Linearity	Included in accuracy	
Response Time (Settling time within ±2% for 0 - 100% command step)	< 3 sec	
Ratings		
Operating Temperature Range	50 - 105 °C (122 - 221 °F)	
Maximum Pressure Rating	1 MPaG (145 psig)	
Pressure Differential (Controller)*	50 - 350 kPa (7 - 50 psid)	
Leak Integrity	$1x10^{-11}$ Pa.m3/s (1×10^{-10} atm.cc/s) Helium	
Mechanical		
Valve Type	Normally Closed, Normally Open	
Primary Wetted Materials	316L and high alloy ferritic stainless steel	
Valve Seat Material	316L stainless steel	
Process Connection	1/4" MVCR	1/2" MVCR or 1/4" MVCR
Communication Protocol		
Electrical Connection	1 x 15-pin Male D-sub	
Input Signal	0 - 5 Vdc linearly proportional to required flow	
Output Signal	0 - 5 Vdc linearly proportional to flow rate	
Power Requirement	±15 Vdc @ 350 mA (max)	

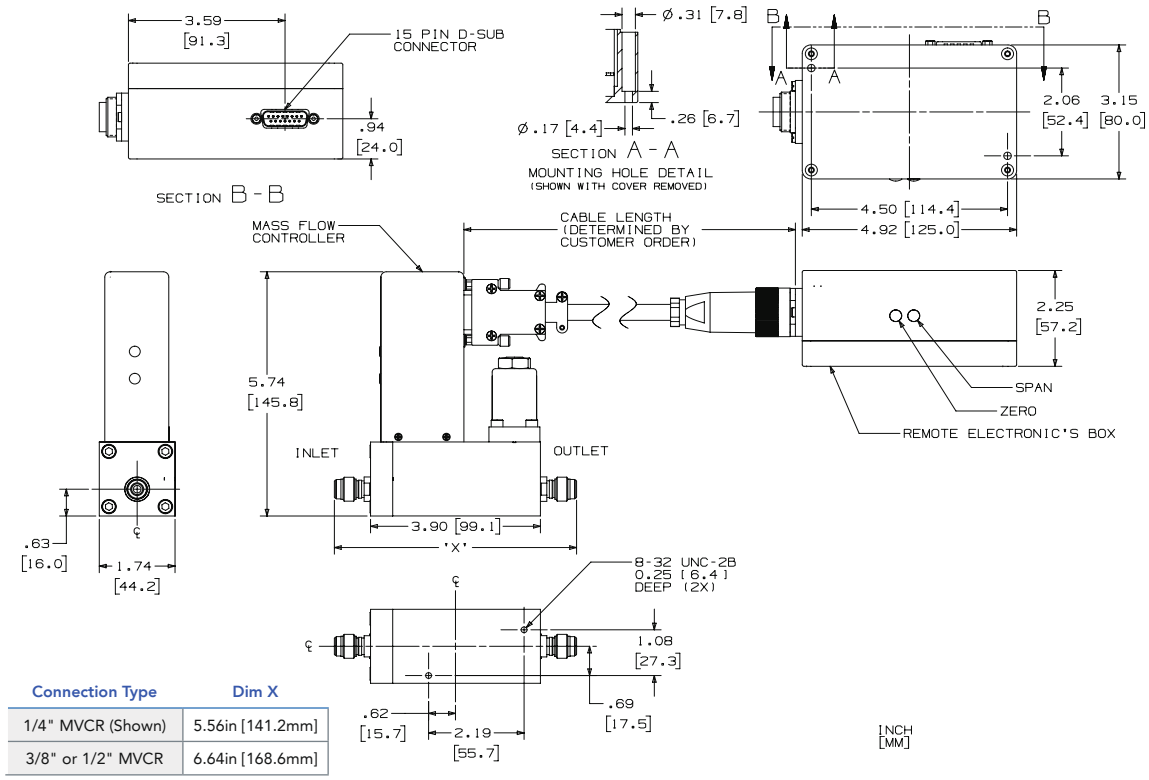
*Specify the operating differential pressure at time of request.

Product Dimensions

5850EMH



5851EMH



Connection Type	Dim X
1/4" MVCR (Shown)	5.56in [141.2mm]
3/8" or 1/2" MVCR	6.64in [168.6mm]

Model Code

Code Description	Code Option	Option Description
I. Base Model Code	585	High Temperature SLA Series
II. Flow Range	0	Low Flow (0.003 - 30 lpm N_2 equivalent)
	1	High Flow (10 - 100 lpm N_2 equivalent)
III. Model Series	EMH	E-Series, Metal Seal, High Temperature
IV. Valve	1	Normally Closed Control Valve
	5	Normally Open Control Valve
V. Temperature Range	A	85 °C Calibration Temperature
	B	90 °C Calibration Temperature
	C	95 °C Calibration Temperature
	D	100 °C Calibration Temperature
	E	105 °C Calibration Temperature
VI. Cable Length	2	2 meter cable
	3	3 meter cable
VII. Orientation	1	Horizontal, Base Down
	2	Vertical, Inlet Up
	3	Horizontal, Either Side Down
	4	Vertical, Inlet Down
	5	Horizontal, Upside Down
VIII. Orifice	C	Consult Factory
IX. Restrictor	G	Consult Factory
X. Process Connection	A	1/4" male VCR
	K	3/8" - 1/2" male VCR

Sample Model Code

I	II	III	IV	V	VI	VII	VIII	IX	X
585	0	EMH	5	A	3	2	C	G	A

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.

ISO 9001 QUALITY SYSTEM

Data-Sheet-5850EMH-EN/2024-05

Global Headquarters
Brooks Instrument
407 West Vine Street
Hatfield, PA
19440-0903 USA

Toll-Free (USA): 888-554-FLOW
T: 215-362-3500
BrooksAM@BrooksInstrument.com

A list of all Brooks Instrument locations and contact details can be found at www.BrooksInstrument.com

BROOKS® INSTRUMENT
Beyond Measure