

5850EMH Series

Thermal Mass Flow



Model 5850EMH

High Temperature, Metal Sealed, Thermal Mass Flow Controllers

Overview

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.

Product Description

The Brooks Model 585xEMH High Temperature Metal Sealed Mass Flow Controller 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 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.

Model Descriptions

5850EMH Low Flow High Temperature Metal Sealed Mass Flow Controller with Analog
5851EMH High Flow High Temperature Metal Sealed Mass Flow Controller with Analog

Product Features

- High leak integrity (less than 10^{-11} Pa.m³/s (10^{-10} atm.cc/s) He)
- Normally closed valve (normally open valve optional)
- Particulate-free
- High purity 316L Stainless Steel
- High flow capability (100 slpm N₂)
- Helium leak check ports
- Wide flow range (0.003 – 100 slpm)
- Electrically-activated valve override
- Low command flow cutoff
- TTL compatible "valve off" function

Product Specifications

| Performance | 5850EMH | 5851EMH |
|---|--------------------------------|------------------------------|
| Flow Range | 0.003 - 30 lpm (N2 equivalent) | 10 - 100 lpm (N2 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 | 85 - 105°C (41 - 221°F) | |
| Maximum Pressure Rating | 1 MPaG (145 psig) | |
| Pressure Differential (Controller)* | 50 - 350 kPa (7 - 50 psid) | 50 - 350 kPa (7 - 50 psid) |
| * Specify the operating differential pressure at time of request. | | |
| Leak Integrity | 1x10 ⁻¹¹ Pa.m ³ /s (1 x 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) |

Model Code

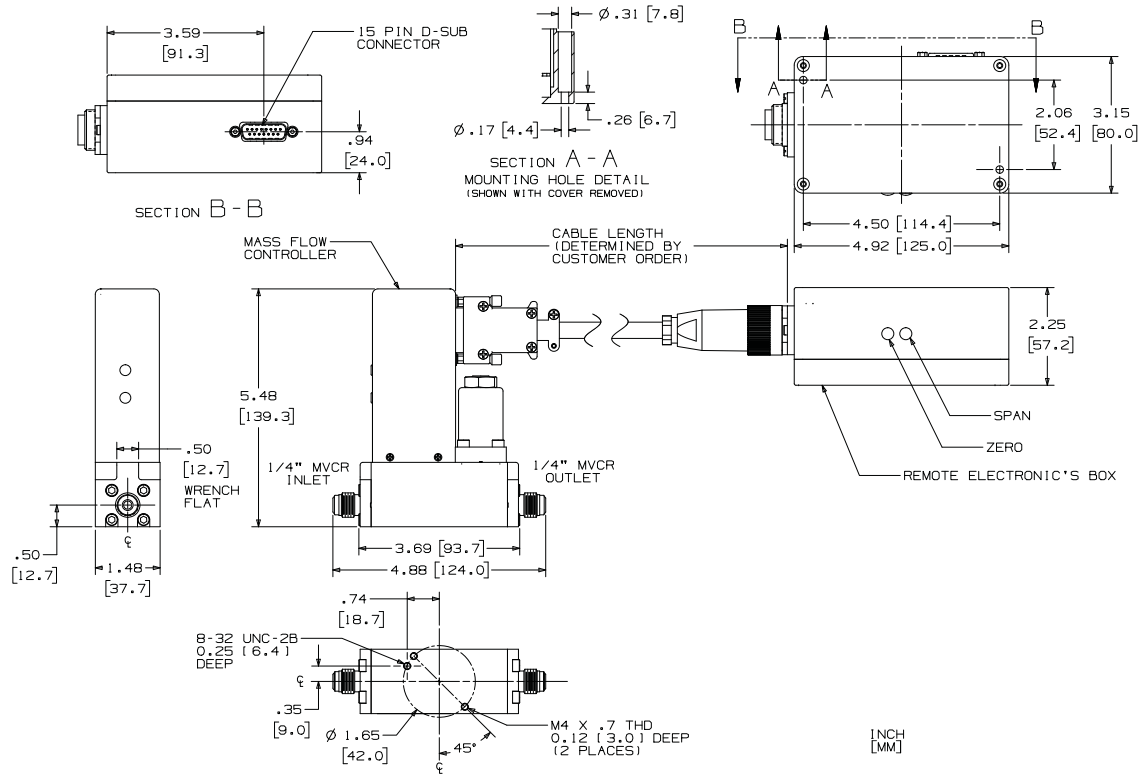
| Code Description | Code Option | Option Description |
|----------------------|-------------|--|
| I. Base Model Number | 585 | SLA Series |
| II. Flow Range | 0 | Low Flow (0.003 - 30 lpm N2 equivalent) |
| | 1 | High Flow (10 - 100 lpm N2 equivalent) |
| III. Model Series | EMH | E-Series, Metal Seal, 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 meters cable |
| | 3 | 3 meters cable |
| | 5 | 5 meters cable (only available on 85°C calibration device) |
| 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 |

Sample Standard Model Code

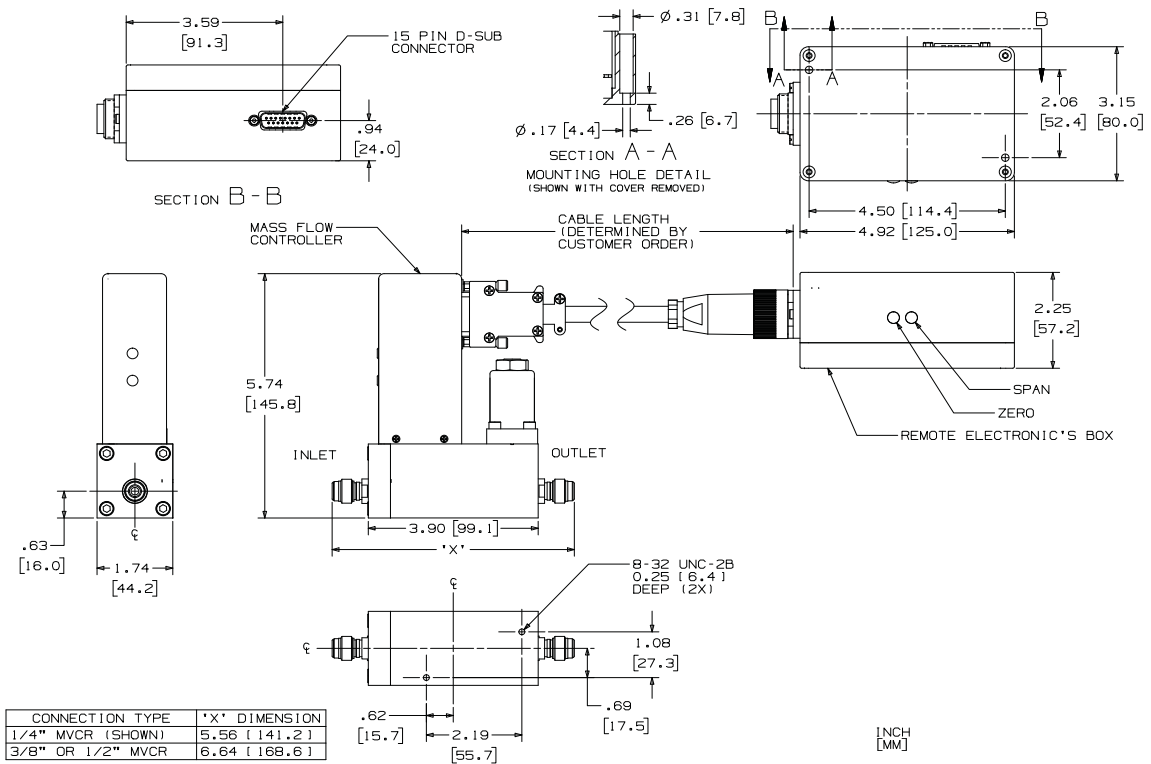
| I | II | III | IV | V | VI | VII | VIII | IX |
|-----|----|-----|----|---|----|-----|------|----|
| 585 | 0 | EMH | 5 | A | 3 | 2 | C | G |

Product Dimensions

5850EMH



5851EMH



Brooks Service and Support

Brooks is committed to assuring all of our customers receive the ideal flow solution 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.

CUSTOMER 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.

TRADEMARKS

Brooks Brooks Instrument, LLC
All other trademarks are the property of their respective owners.



Global Headquarters

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

Toll-Free (USA): 888-554-FLOW
T: 215-362-3500
F: 215-362-3745

BrooksAM@BrooksInstrument.com

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

©Copyright 2017 Brooks Instrument, LLC All rights reserved. Printed in U.S.A.

BROOKS[®]
INSTRUMENT