

Title: **MP SERIES INSTALLATION, WIRING, AND DIMENSIONS**

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*Eldridge Products, Inc.*

***Master-Touch™***

**Thermal Mass Flow Meters**

**MP Series**

**Approved for use in hazardous locations**

**CSA/CUS, ATEX, IECEx, KOSHA**

***Installation, Wiring, and Dimensions***



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**Applicable Models:****Series 8000MP-8200MP, 8600MP-8800MP****Series 9100MP-9200MP, 9700MP-9800MP****Approvals****English**

For use in hazardous area locations:



CSA/CUS - FOR USE IN HAZARDOUS AREA LOCATIONS; CLASS I DIVISION 1, GROUP B,C,D; CLASS II GROUP E,F,G; CLASS III; ENCL TYPE 4X; CLASS I ZONE I; AEx d IIB+H2 IP66; Ex d IIB+H2 IP66; T2 OR T3 OR T4 AS MARKED; Ta = 0°C TO 50°C



ATEX - Ta = 0°C TO 50°C; IP66; Ex d IIB+H2 T4 Gb/EX t IIIC T135°C Db or; Exd IIB+H2 T3 Gb/EX t IIIC T200°C Db or; Ex d IIB+H2 T2 Gb/EX t IIIC T300°C Db;SIRA 12ATEX1302



IECEx - FOR USE IN HAZARDOUS AREA LOCATIONS; T2 OR T3 OR T4 AS MARKED; Ta = 0°C TO 50°C; Ex d IIB+H2 T2...T4 Gb IP66; Ex tD A21 IP66 T135°C...T300°C; IECEx CSA 11.0014



KOSHA - FOR USE IN HAZARDOUS AREA LOCATIONS; T2 OR T3 OR T4 AS MARKED; Ta = 0°C TO 50°C; Ex d IIB+H2 T2...T4 Gb IP66; Ex tD A21 IP66 T135°C...T300°C

**CAUTION:** Disconnect from supply before opening. Keep covers tight while circuits are alive. Certified conduit seals/stopping boxes with filling compound must be installed within [18" (450mm), 25mm Ex d], of the enclosure per local installation requirements. Refer to the gas/dust surface temperature rating as marked "X" on the product label (T2, T3 or T4). Connect power supply as marked "X" on the product label (24 VDC @ 1/4 A or 120 VAC @ 1/8 A or 240 VAC @ 1/16 A & 50/60 Hz). The maximum working pressure is 500 PSIG (3.4MPa) when properly installed. Attach by suitable means to prevent unintentional product removal and/or leaks.

**French**

Pour utilisation dans des locations/zones classifiées dangereuses:



CSA/CUS - FOR USE IN HAZARDOUS AREA LOCATIONS; CLASS I GROUP B,C,D; CLASS II GROUP E,F,G; CLASS III; ENCL TYPE 4X; CLASS I ZONE I; AEx d IIB+H2 IP66; Ex d IIB+H2 IP66; T2 OR T3 OR T4 AS MARKED; Ta = 0°C TO 50°C



ATEX - Ta = 0°C TO 50°C; IP66; Ex d IIB+H2 T4 Gb/EX t IIIC T135°C Db or; Exd IIB+H2 T3 Gb/EX t IIIC T200°C Db or; Ex d IIB+H2 T2 Gb/EX t IIIC T300°C Db;SIRA 12ATEX1302

**AVERTISSEMENT :** Débrancher l'alimentation avant d'ouvrir. Ne pas ouvrir le couvercle lorsque les circuits sont alimentés. Conduits électriques certifiés joints et/ou les barrières contre les gaz avec enduits

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devrons être installés dans une limite de [18 pouces (450mm), 25mm Ex d], du boîtier selon les recommandations locales. Veuillez vous référer à la classification de température de surface gaz/poussière indiquée par un X sur l'étiquette du produit (T2, T3 or T4). Brancher le bloc d'alimentation tel qu'indiqué par un X sur l'étiquette du produit (24 VDC @ ¼ A or 120 VAC @ 1/8 A or 240 VAC @ 1/16 A & 50/60 Hz). La pression maximum de travail est 500 PSIG (3.4 Mpa) lorsque l'installation est adéquate. Fixer convenablement afin d'éviter le déplacement inutile et/ou afin d'éviter les fuites.

**German**

Zur Verwendung in explosionsgefährdeten Bereichen:



ATEX - Ta = 0°C TO 50°C; IP66; Ex d IIB+H2 T4 Gb/EX t IIIC T135°C Db or; Exd IIB+H2 T3 Gb/EX t IIIC T200°C Db or; Ex d IIB+H2 T2 Gb/EX t IIIC T300°C Db; SIRA 12ATEX1302

ACHTUNG: Vor dem öffnen Spannung abschalten. Gehäusedeckel bei eingeschalteter Spannung verschlossen halten. Eine zertifizierte Leitungsdurchführung mit Füllmasse muss im Abstand von [18 Zoll (450 mm), 25mm Ex d], zum Gehäuse montiert werden. Die Temperatureinstufung (T-Klasse) der maximalen Oberflächentemperatur ist als „X“ auf dem Typenschild gekennzeichnet (T2, T3 oder T4). Die Spannungsversorgung ist ebenfalls als „X“ auf dem Typenschild gekennzeichnet (24 VDC @ ¼ A oder 120 VAC @ 1/8 A oder 240 VAC @ 1/16 A & 50/60 Hz). Der maximale Betriebsdruck beträgt 500 PSIG (3.4MPa) bei korrekter Installation. Befestigung mit geeigneten Mitteln um unbeabsichtigte mechanische Beanspruchung bzw. Bewegung des Gerätes und/oder Leckage zu vermeiden.

**Italian**

Per uso in area classificata:



ATEX - Ta = 0°C TO 50°C; IP66; Ex d IIB+H2 T4 Gb/EX t IIIC T135°C Db or; Exd IIB+H2 T3 Gb/EX t IIIC T200°C Db or; Ex d IIB+H2 T2 Gb/EX t IIIC T300°C Db; SIRA 12ATEX1302

ATTENZIONE: Interrompere l'alimentazione prima dell'apertura. Mantenere la custodia chiusa quando i circuiti sono alimentati. In caso di installazione in campo, i giunti di bloccaggio certificati, riempiti con sigillante, devono essere installati entro [18 pollici (450 mm), 25mm Ex d], dalla custodia. Verificare la classificazione della temperatura superficiale del gas o delle polveri dichiarata sulla targhetta dello strumento (T2, T3 oppure T4). Alimentare come dichiarato sulla targhetta dello strumento (24 VDC @ ¼ A oppure 120 VAC @ 1/8 A oppure 240 VAC @ 1/16 A & 50/60 Hz). Con una installazione corretta la Massima Pressione Operativa è pari a 500 psi g ( 3.4 MPa rel. ) . Fissare lo strumento con mezzi appropriati per prevenirne la rimozione accidentale e/o eventuali perdite.

**Polish**

Do stosowania w strefach zagrożonych wybuchem:



ATEX - Ta = 0°C TO 50°C; IP66; Ex d IIB+H2 T4 Gb/EX t IIIC T135°C Db or; Exd IIB+H2 T3 Gb/EX t IIIC T200°C Db or; Ex d IIB+H2 T2 Gb/EX t IIIC T300°C Db; SIRA 12ATEX1302

OSTRZEŻENIE: Bezwzględnie odłączyć urządzenie od zasilania przed otwarciem obudowy. Przy aktywnych obwodach wyjściowych obudowa musi być zamknięta. Należy stosować wyłącznie certyfikowane przepusty kablowe uszczelnienia i skrzynki połączeniowe zgodnie z lokalnymi wymaganiami instalacyjnymi dla urządzeń Ex d [18" (450mm), 25mm Ex d]. Należy stosować tylko dla gazów/pyłów o temperaturze powierzchni oznaczonej „X” na etykiecie urządzenia (T2, T3 lub T4). Należy stosować

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wyłącznie napięcie zasilania oznaczone na tabliczce znamionowej urządzenia (24 VDC @ ¼ A lub 120 VAC @ 1/8 A lub 240 VAC @ 1/16 A & 50/60 Hz). Przy prawidłowym montażu maksymalne ciśnienie robocze wynosi 500 PSIG (3.4Mpa). Dodatkowo należy zastosować środki chroniące przed przypadkowym demontażem urządzenia lub przeciekami.

**Spanish**

Para usar en localidades peligrosas entre estas líneas:



ATEX - Ta = 0°C TO 50°C; IP66; Ex d IIB+H2 T4 Gb/EX t IIIC T135°C Db or; Exd IIB+H2 T3 Gb/EX t IIIC T200°C Db or; Ex d IIB+H2 T2 Gb/EX t IIIC T300°C Db;SIRA 12ATEX1302

PRECAUCION: Desconecte del suministro eléctrico antes de abrir. Mantenga las tapas y/o cubiertas ajustadas mientras los circuitos están cargados. Conduit y sellos certificados/cajas de paro con relleno compuesto deberán ser instaladas a [18" (450mm), 25mm Ex d], la cubierta requiere instalación local. La "X" marcada en la etiqueta del producto se refiere a gas/polvo y rango de temperatura de la superficie (T2, T3 o T4). Conecte al suministro eléctrico marcado con "X" en la etiqueta del producto (24 VCD @ 1/4 A, 120VCA @ 1/8 A, 240VCA 1/16 A, Y 50/60 Hz). La máxima presión de trabajo es de 500 PSIG (3.4MPa) cuando ha sido instalado apropiadamente. Adjunto por medio disponible para prevenir el movimiento intencional del producto y/o fuga.

**Swedish**

För användning i risk klassade utrymmen enligt:



ATEX - Ta = 0°C TO 50°C; IP66; Ex d IIB+H2 T4 Gb/EX t IIIC T135°C Db or; Exd IIB+H2 T3 Gb/EX t IIIC T200°C Db or; Ex d IIB+H2 T2 Gb/EX t IIIC T300°C Db;SIRA 12ATEX1302

VARNING: Matningsspänningen måste brytas innan mätaren öppnas. Kåpor och tätningar skall vara monterad så länge som strömmen ej är bruten. Certifierade/klassade genomföringstätningar måste användas inom ett avstånd av [18" (450 mm) , 25mm Ex d], från varje installerad utrustning. Klassningen av ytemperaturen för gas/damm skall beaktas. Markeras med ett " X " på produktens etikett (T2, T3 eller T4). Anslut matningsspänningen som markeras med ett " X " på produktens etikett (24 VDC @ ¼ A eller 120 VAC @ 1/8 A eller 240 VAC @ 1/16 A & 50/60 Hz). Maximalt arbetstryck är 34 bar ö ( 3,4 Mpa ) vid installation enligt anvisning. Ansluts på ett sådant vis, så att läckor förebyggs och att utrustningen ej oavsiktligt kan demonteras.

**Title: MP SERIES INSTALLATION, WIRING, AND DIMENSIONS**

This document is the property of Eldridge Products Inc. and shall not be copied or used without written authorization.

**Table of Contents**

|   |           |
|---|-----------|
| <b>APPLICABLE MODELS:</b> .....                                     | <b>2</b>  |
| <b>APPROVALS</b> .....  | <b>2</b>  |
| <b>TABLE OF CONTENTS</b> .....                                      | <b>5</b>  |
| <b>INTRODUCTION, POWER REQUIREMENTS, AND SIGNAL INTERFACE</b> ..... | <b>7</b>  |
| INTRODUCTION .....  | 7         |
| UNPACKING YOUR INSTRUMENT .....                                     | 7         |
| POWER REQUIREMENTS.....   | 7         |
| SIGNAL INTERFACE.....   | 8         |
| <b>GENERAL INSTALLATION AND GUIDELINES</b> .....                    | <b>9</b>  |
| STRAIGHT RUN REQUIREMENTS .....                                     | 10        |
| INSTALLATION OF INLINE FLOW METERS.....                             | 11        |
| INSTALLATION OF INSERTION FLOW METERS.....                          | 12        |
| INSERTION DEPTH GUIDELINES.....                                     | 13        |
| INSTALLATION OF INSERTION STYLE FLOW AVERAGING TUBE™ (FAT™).....    | 14        |
| <b>WIRING DIAGRAMS</b> .....  | <b>15</b> |
| MP SERIES .....   | 15        |
| AC TRANSFORMER.....   | 16        |
| <b>DIMENSIONAL DIAGRAMS</b> .....                                   | <b>17</b> |
| SERIES 8000MP-8100MP .....  | 17        |
| SERIES 8000MP-8100MP WITH ACEX-DCEX OPTION .....                    | 18        |
| SERIES 8200MP .....   | 19        |
| SERIES 8200MP WITH ACEX-DCEX OPTION .....                           | 20        |
| SERIES 8600MP-8700MP .....  | 21        |
| SERIES 8800MP .....   | 22        |
| SERIES 9100MP .....   | 23        |
| SERIES 9200MP .....   | 24        |
| SERIES 9700MP .....   | 25        |

Title: **MP SERIES INSTALLATION, WIRING, AND DIMENSIONS**

This document is the property of Eldridge Products Inc. and shall not be copied or used without written authorization.

|   |           |
|---|-----------|
| <b>SERIES 9800MP .....</b>                          | <b>26</b> |
| <b>FACTORY CALIBRATION .....</b>                    | <b>27</b> |
| <b>GENERAL SPECIFICATIONS AND INFORMATION .....</b> | <b>28</b> |
| <b>MP SERIES .....</b>                              | <b>28</b> |
| <b>SPECIFICATION NOTICE.....</b>                    | <b>29</b> |
| <b>TERMS AND CONDITIONS.....</b>                    | <b>29</b> |
| <b>APPROVALS .....</b>                              | <b>29</b> |
| <b>APPROVED FLOW METER LABELS .....</b>             | <b>30</b> |
| <b>LIMITED WARRANTY .....</b>                       | <b>31</b> |
| <b>LIMITED ACCEPTANCE .....</b>                     | <b>31</b> |
| <b>SERVICE WORK.....</b>                            | <b>31</b> |
| <b>STORAGE.....</b>                                 | <b>32</b> |
| <b>EU DECLARATION OF CONFORMITY .....</b>           | <b>32</b> |
| <b>ADDITIONAL REFERENCES.....</b>                   | <b>34</b> |
| <b>EPITERM SOFTWARE .....</b>                       | <b>34</b> |
| <b>EPITERM INTERFACE USER MANUAL.....</b>           | <b>34</b> |
| <b>EPICOM LIVE USER MANUAL .....</b>                | <b>34</b> |
| <b>EPI LIVE MODBUS USER MANUAL .....</b>            | <b>34</b> |
| <b>EPIVAL QUICK START GUIDE.....</b>                | <b>34</b> |
| <b>BACNET QUICK START GUIDE .....</b>               | <b>34</b> |
| <b>CUSTOMER SATISFACTION SURVEY .....</b>           | <b>34</b> |

**Title: MP SERIES INSTALLATION, WIRING, AND DIMENSIONS**

This document is the property of Eldridge Products Inc. and shall not be copied or used without written authorization.

## **Introduction, Power Requirements, and Signal Interface**

### **Introduction**

Your Master-Touch™ flow meter includes a flow sensing element, temperature sensing element, digital SIM/Base board, digital controller board and a transmitter enclosure. The flow sensor is mounted in an insertion probe support / averaging tube or an inline flow section. Depending upon your requirements, all these components may be integrated into one flow transmitter assembly or you may have a flow transmitter and a second, remote electronics enclosure. In either configuration, the digital controller converts the nonlinear input signal received from the flow sensor to linear 0–5 VDC & 4–20 mA output signals. RS485 Modbus RTU communications are embedded in the firmware. HART, BACnet, and Profibus DP-compatible modules are optionally available.

### **Unpacking Your Instrument**

Although your Master-Touch™ thermal mass flow meter instruments are rugged, they should be inspected upon delivery to assure that no damage has taken place during transit. *If upon inspection it is found that damage has occurred, notify the carrier immediately and place a claim for damaged goods.* The shipping container or crate should be handled with care and carefully opened to avoid possible damage to the contents. After the container is opened the contents should be carefully removed and the individual pieces checked against the packing list. Please note that the packing list will show all the options that were ordered for your instrument. Most of these options will be incorporated into the flow meter itself and will not be separate components. The last verification is to check that the equipment and calibration range as shown on the documentation match your purchase order specifications. *If you discover a discrepancy or have any questions about what you have received, contact EPI immediately.*

### **Power Requirements**

Power requirements for Valumass™ flow meters with the “-DC24” option is user-supplied 18 to 24 Volts DC @ 250 mA.

Power requirements for Valumass™ flow meters with the “-AC115” option is 100 - 120 VAC 50/60 Hz standard.

Power requirements for Valumass™ flow meters with the “-AC230” option is 210 - 240 VAC 50/60 Hz Standard.

Our recommendation on wire size is 18 Ga. stranded for all AC wiring. If conduit is used to enclose the power input line, it should be suitable for the application, electrically conductive, and connected within the enclosure to the earth ground. If the flow meter includes a remote electronics assembly, then the flow transmitter power is provided by the connection to the remote assembly. Ten feet of five-wire connection cable is provided with the standard remote assembly. If more cable is required, please inform your EPI sales representative at the time of order. The transmitter is independent of cable length and will not suffer any signal degradation with length changes. The 4–20mA analog output wire should be sized for no more than 5 Ohms resistance across the loop and not less than 22 AWG.



**Title: MP SERIES INSTALLATION, WIRING, AND DIMENSIONS**

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**Signal Interface**

All MP Series Master-Touch™ flow meters provide both 0–5 Volts DC and 4–20 mA flow output signals and Modbus RTU communications. Additional communications protocols such as HART, BACnet, and Profibus DP are available as options. Voltage signals should not be sent over long distances due to small currents causing voltage drops across the wire pair. If the voltage is to be sent over a distance (i.e., 50 feet), the wire AWG should be sized to reduce the voltage drop to acceptable levels. Knowing your load impedance is the only way this calculation may be achieved. Our 4–20 mA signal is provided to prevent this sort of signal loss. Current loops are normally not susceptible to noise and are not affected by voltage drops around the loop. However, it is important when using a current loop not to exceed the level of load resistance that the current loop may drive.

Note: Resistance loop - is the wire loop (resistance) out to and back from customer control panel, plus the series resistance (typically 250 Ohm) at customer control panel. A 250-ohm series resistor can be placed across the signal input terminals, at the customer control panel, to produce a 1-5 VDC signal input, from the 4-20 mA DC current loop signal. The maximum resistance less this 250 Ohms is available for the wire loop resistance and wire gage (AWG) sizing. We recommend using an AWG size to allow a minimum margin of 10% less than the loop maximum resistance.

| Examples:   | DC Voltage Input |   | Coefficient |   | Resistance Loop Ohms Max. |
|---|------------------|---|-------------|---|---------------------------|
| *24 VDC Powered EPI Flowmeter Power Input Supply:     | 24               | x | 32.708      | = | 785                       |
| 115/230 VAC Powered EPI Flowmeter Power Input Supply: | 20               | x | 32.708      | = | 654                       |
| Isolated - Customer Powered 4-20 mA Current Loop:     | 24               | x | 34.167      | = | 820                       |
| *Isolated - Customer Powered 4-20 mA Current Loop:    | 20               | x | 34.167      | = | 683                       |

\*Same formula applies for less than 24 VDC input, substitute lesser value in equation.

*In our standard configuration, our flow meters are not loop-powered devices.  
However, this option is available upon request. If a flow meter must be  
changed from the standard configuration to loop-powered in the field, contact  
the factory for assistance.*



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**Title: MP SERIES INSTALLATION, WIRING, AND DIMENSIONS**

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## General Installation and Guidelines

The Master-Touch™ thermal dispersion sensor must be exposed to the flowing gas within the process pipe at a location that provides a uniform and consistent flow profile across the pipe diameter. Anomalies in the actual flow profile or installations in non-circular ducts may require adjustments for the best accuracy. Although changes to the process gas composition, gas temperature, line pressure, etc. can affect the overall accuracy of the flow readings, these effects are often minimal when compared to their effect on other flow measurement technologies.

The temperature parameters for the transmitter are listed in the specification section of this manual. Acceptable limits for the gas temperature and the environmental temperature limits to which the transmitter electronics may be subjected are also provided.

We recommend installing the flow meter at a location where the gas is dry or above the dew point temperature. Installations which allow large droplets of water to condense and contact the sensing element must be avoided. Applications with large quantities of gas-borne particulates should also be avoided as the sensor may become dirty which could affect the heat loss to the flowing gas and therefore have a negative impact on the overall accuracy of the flow readings. Gas purge options are available, if necessary. Consult the factory for options.

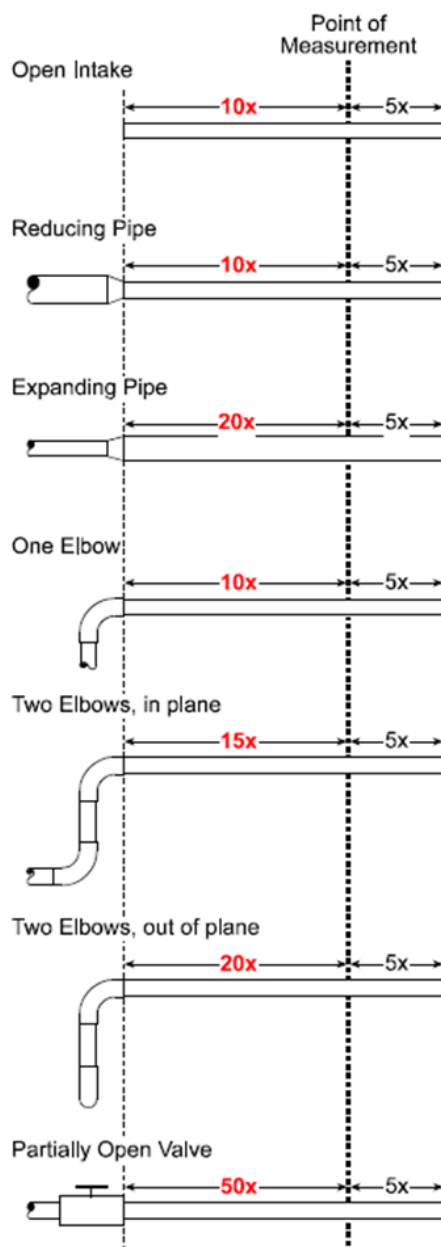
Optimum installation requires sufficient straight run to allow a uniform, non-swirling, fully developed flow profile within the flow conduit. ***The illustration on the next page is provided as a general guideline for minimum straight run requirements.*** Depending upon the specific location details, straight run requirements to produce a satisfactory flow profile may vary. It is best to avoid installations which are immediately downstream of bends, abrupt cross-sectional area increases or decreases, fans, louvers, or other equipment installed in the line. These situations can cause non-uniform flow profiles and swirl which can result in signal errors. Problematic flow profiles require flow conditioning to improve meter performance.

Our inline style flow meters are calibrated with the sensors in a fixed position within the provided flow section. Our insertion flow meters are calibrated near the ANSI Point-of-Average-Flow (.243r) positioning in the process line with a fully developed flow profile. You may need to make minor adjustments in the sensor position for best results in your process line. With either style of flow meter, you may also need to utilize the Master-Touch™ software in situ flow signal adjustments for the most accurate flow readings due to a non-uniform flow profile in your process line.

***Please see the EPITerm or EPICom Live User Manual for complete description of Master-Touch software menus and their functions or consult the factory for additional information.***

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***Straight Run Requirements****General Guideline for Minimum Straight Run Requirements***Note:**

10x within the illustration represents 10 ID lengths and 15x represents 15 ID lengths and so forth.

Some of EPI inline flow meters come with flow conditioning plates that can assist with shorter upstream conditions. Consult the factory for additional information concerning options to reduce the required straight run.



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***Installation of Inline Flow Meters***

The inline style flow meter assembly includes the flow sensing element, temperature sensing element, digital SIM/Base board, digital controller board, transmitter enclosure, and flow section. Depending on the flow section size and/or other requirements, the flow section may include a nozzle or flow conditioning plates. The flow section is typically specified to match the user's flow conduit and is plumbed directly in the flow line. Inline mounting styles are available through EPI for line sizes 1/4" pipe and larger. Consult our factory for flow section end mounting options.

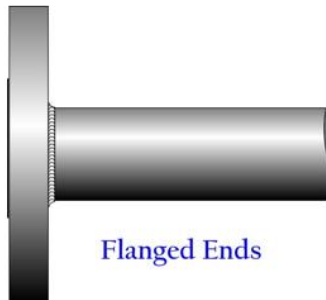
Inline flow meters are calibrated with the flow sensing element mounted in place within the flow section. The sensor should not be removed as the accuracy of the flow signal will be affected. Should ever it become necessary to remove the sensing element for any reason, the element should be replaced in the same alignment as it was originally positioned. Please consult the factory before disassembling.

Inline flow meters will have the flow direction marked on their flow section for a visual reference during installation.

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***Available end connection styles***

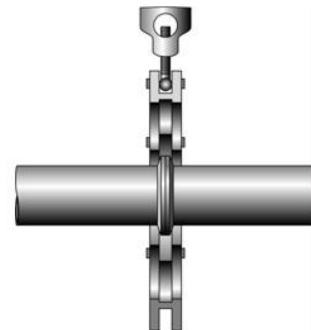
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**Flanged Ends**



**MNPT Ends**



**Tri-Clamps**



**VCR Fittings**

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### ***Installation of Insertion Flow Meters***

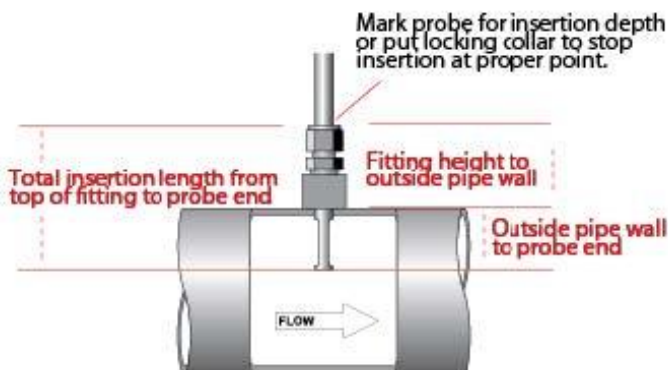
The insertion style flow meters include the flow sensing element, temperature sensing element, digital SIM/Base board, digital controller board, transmitter enclosure, and the probe assembly which supports the sensing elements. This design requires the probe assembly to be inserted into the process gas flow conduit.

Insertion models are available with 1/2", 3/4" or 1" OD probes. Insertion style flow meters may be installed with properly sized bored-through tube fittings to mount them in place. Tube fittings, with or without mounting flange, are available from the factory as an option. Installing the tube fitting consists of preparing the flow conduit to accept the fitting by first drilling a clearance hole for the transmitter probe assembly, welding it in place, or threading it into the proper size half coupling which has been welded to the flow conduit. The tube length will be determined by EPI based upon the installation specifications.

Optional ball valve assemblies are available through EPI which allow the removal of the insertion style averaging tubes for service, calibration, cleaning, etc. The valve provides a means to seal off leaks of the process gas at the point of insertion after the probe assembly has been removed. The ball valve assembly installation requires fitting the flow section to which the insertion probe assembly will be inserted with a threaded half coupling of the proper size to accommodate the ball valve retractor. In some instances, this requires direct threading together (or with a reducing bushing) of the retractor assembly. In other cases, it requires welding the half coupling in place and drilling a clearance hole through for the probe assembly. If the flow section is under pressure, a hot tap drill rig (not available through EPI) may be required.

The maximum pressure for insertion style flow meters is stated in the General Specifications section of this manual. To reduce the possibility of personal injury when servicing the flow meter, each size is rated such that the maximum force applied to the transmitter is approximately 25 pounds. ***Caution should be exercised if applying higher pressure and a holding device may be required to prevent the transmitter from being projected out of the process line when removing or replacing the transmitter assembly.***

*Visual representation of installation at the recommended insertion depth*



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**Insertion Depth Guidelines**

**\*The information below assumes a well-developed flow profile in the process line**

| Sch 40<br>Nominal<br>Pipe Size | Inside<br>Diameter<br>(I.D.)<br>(inches) | Wall<br>Thickness<br>(inches) | X-modifier<br>(Inches) | Cross-<br>sectional<br>Area (ft <sup>2</sup> ) | Pipe OD to<br>Probe End<br>(inches)<br>Depth |
|--------------------------------|--|-------------------------------|------------------------|--|--|
| 2"                             | 2.067                                    | 0.154                         | 1.19                   | 0.0233   | 1.6  |
| 2.5"                           | 2.469                                    | 0.203                         | 1.11                   | 0.0332   | 1.6  |
| 3"                             | 3.068                                    | 0.216                         | 1.02                   | 0.0513   | 1.6  |
| 4"                             | 4.026                                    | 0.237                         | 0.97                   | 0.0884   | 1.7  |
| 6"                             | 6.065                                    | 0.28                          | 0.8                    | 0.2006   | 1.8  |
| 8"                             | 7.981                                    | 0.322                         | 0.8                    | 0.3474   | 2.1  |
| 10"                            | 10.02                                    | 0.365                         | 0.8                    | 0.5476   | 2.4  |
| 12"                            | 12                                       | 0.375                         | 0.8                    | 0.7854   | 2.6  |
| 14"                            | 13.25                                    | 0.375                         | 0.8                    | 0.9575   | 2.8  |
| 16"                            | 15.25                                    | 0.375                         | 0.8                    | 1.2684   | 3  |
| 18"                            | 17.25                                    | 0.375                         | 0.8                    | 1.623  | 3.3  |
| 20"                            | 19.25                                    | 0.375                         | 0.8                    | 2.0211   | 3.5  |
| 24"                            | 23.25                                    | 0.375                         | 0.8                    | 2.9483   | 4  |

(Table Above does not apply to Flow Averaging Tubes™)

**For other pipe sizes, please use the equation below. Round value to nearest tenth.**

*(Comparing your ID to the table above, Pick an X value that is closely related to your ID)*

1.  $(\text{New Pipe ID} / 2) * 0.243 + \text{"new pipe wall thickness"} + \text{X-modifier} = \text{Depth (Pipe OD to probe end)}$
2.  $\text{Depth} + \text{Fitting Height} = \text{Total depth from top of fitting to probe end.}$

**Example with 3-1/2" Sch10 Pipe using a 1.8" compression fitting**

ID = 3.76", Wall thickness = 0.12", X-modifier = 1 (Estimated value near closely related ID)

1.  $(3.76/2) * 0.243 + 0.12 + 1 = 1.57$ ; round to 1.6
2.  $1.6" (\text{depth}) + 1.8" (\text{fitting height}) = 3.4" (\text{total depth from top of fitting to probe end})$

**Title: MP SERIES INSTALLATION, WIRING, AND DIMENSIONS**

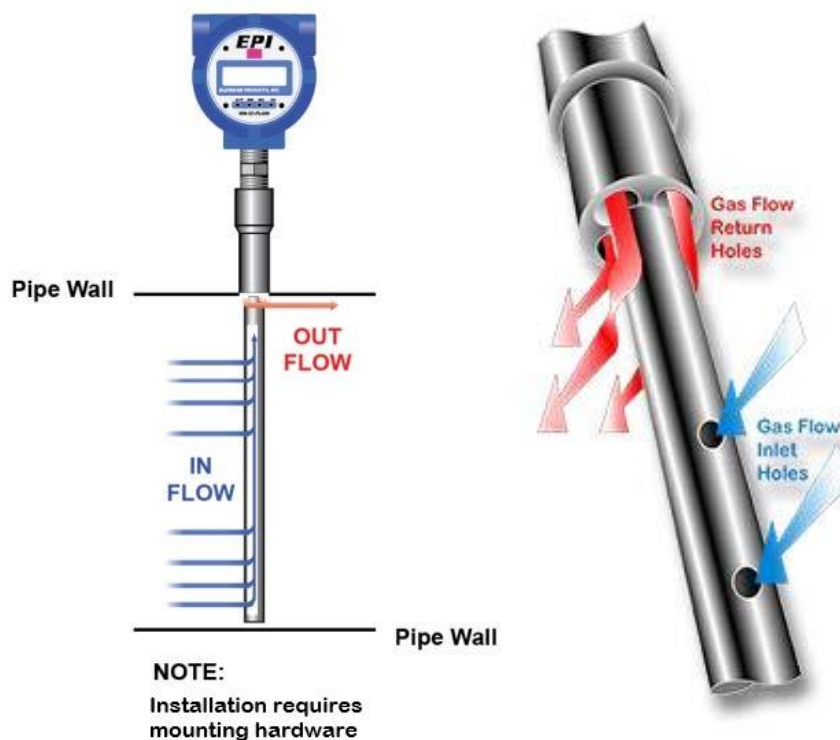
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***Installation of Insertion Style Flow Averaging Tube™ (FAT™)***

The insertion style Flow Averaging Tube™ flow meter includes the flow sensing element, temperature sensing element, digital SIM/Base board, digital controller board, transmitter enclosure, Flow Averaging Tube™, return port which houses the sensing elements, and a coupling connecting the FAT™ to the transmitter enclosure.

This design requires the probe assembly to be inserted into the process gas flow conduit with the flow access ports aligned upstream to allow the process gas to flow across the sensor assembly. The access opening in the process pipe must allow an unobstructed flow of the gas out of the return ports and back into the general flow stream. The insertion style flow averaging tube probe assembly may be inserted into any suitable flow section, pipe, or duct. Insertion styles are available with 1/2", 3/4" or 1" OD probes. Please note that the return ports for each size are 1/2" larger than the averaging tube itself.

The maximum pressure for insertion style flow meters is stated in the General Specifications section of this manual. To reduce the possibility of personal injury when servicing the flow meter, each size is rated such that the maximum force applied to the transmitter is approximately 25 pounds. ***Caution should be exercised if applying higher pressure and a holding device may be required to prevent the transmitter from being projected out of the process line when removing or replacing the transmitter assembly.***

***Visual representation of Insertion FAT installed***

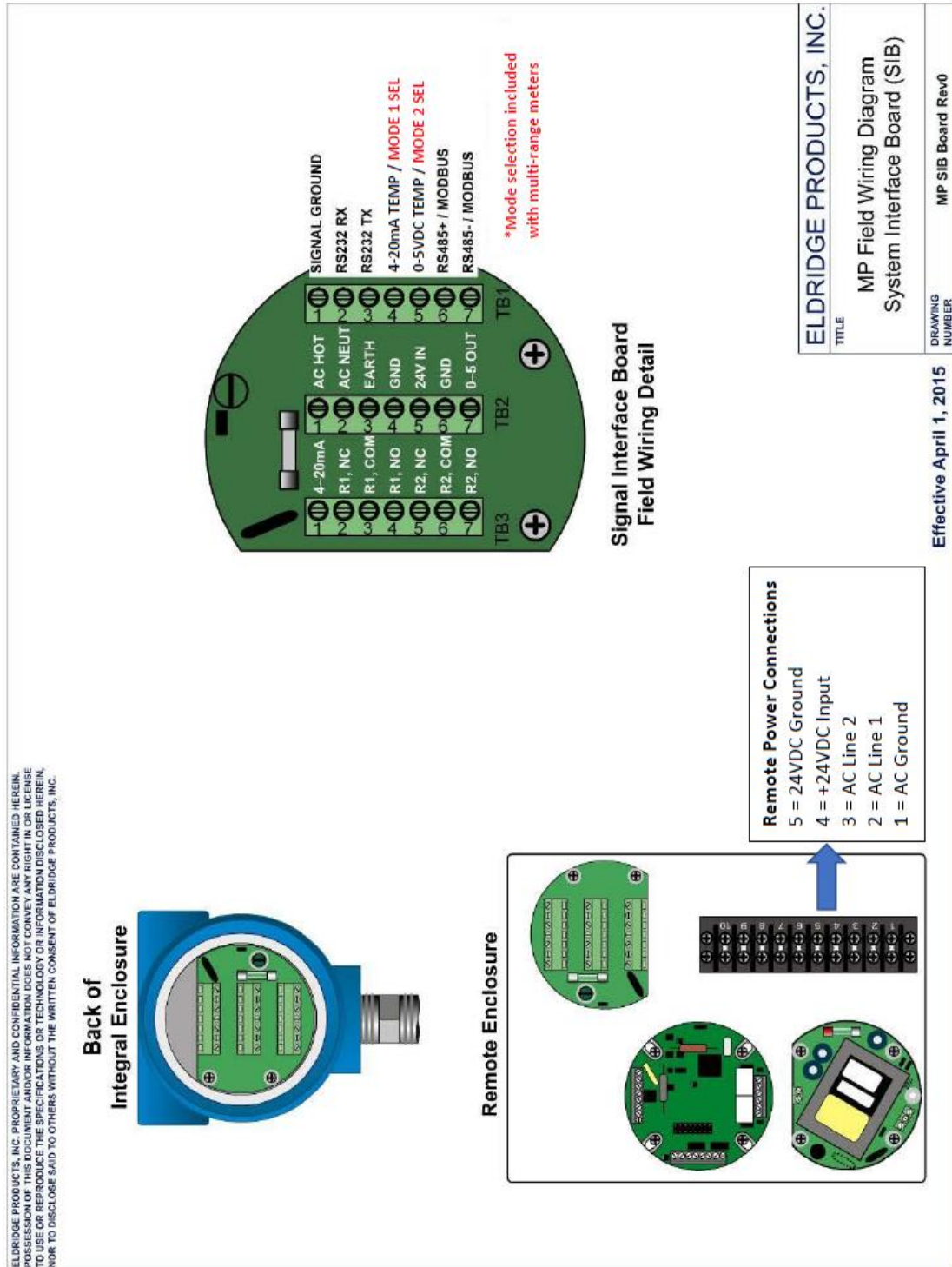


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**Wiring Diagrams**

**MP Series**





Title: **MP SERIES INSTALLATION, WIRING, AND DIMENSIONS**

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**AC Transformer**

**Specifications**

Power — 115 VAC 50/60 Hz (230 VAC Optional)  
 Output — Variable VSC based on load  
 115 VAC — JP1 & JP2  
 230 VAC — JP3

Power input levels shall be specified by Eldridge Products and shall not be exceeded.

T1 — 6 VA (Volt Amp)  
 F1 — 115 VAC = 100mA; 230 VAC = 50mA  
 C1 — 470 $\mu$ F, 25V  
 C2 — 0.1 $\mu$ , 50V  
 C3 — 470 $\mu$ F, 25V  
 D1 — Bridge Rectifier 100V  
 JP1 — 0 ohm resistor  
 JP2 — 0 ohm resistor  
 JP3 — 0 ohm resistor  
 PCB — 70100501  
 Z1 — Transorb (115 VAC)  
 Z2 — Transorb (230 VAC)

Acceptable T1  
 Prem SPW 1305, 6VA 115/230

Acceptable F1  
 Littelfuse 218 Series or equal  
 Wickmann Series 195 or equal

**ELDRIDGE PRODUCTS, INC.**

TITLE  
 Component Layout & Parts List  
 115VAC or 230VA  
 Input Power Supply

DRAWING  
 NUMBER  
 MP AC Transformer Rev0

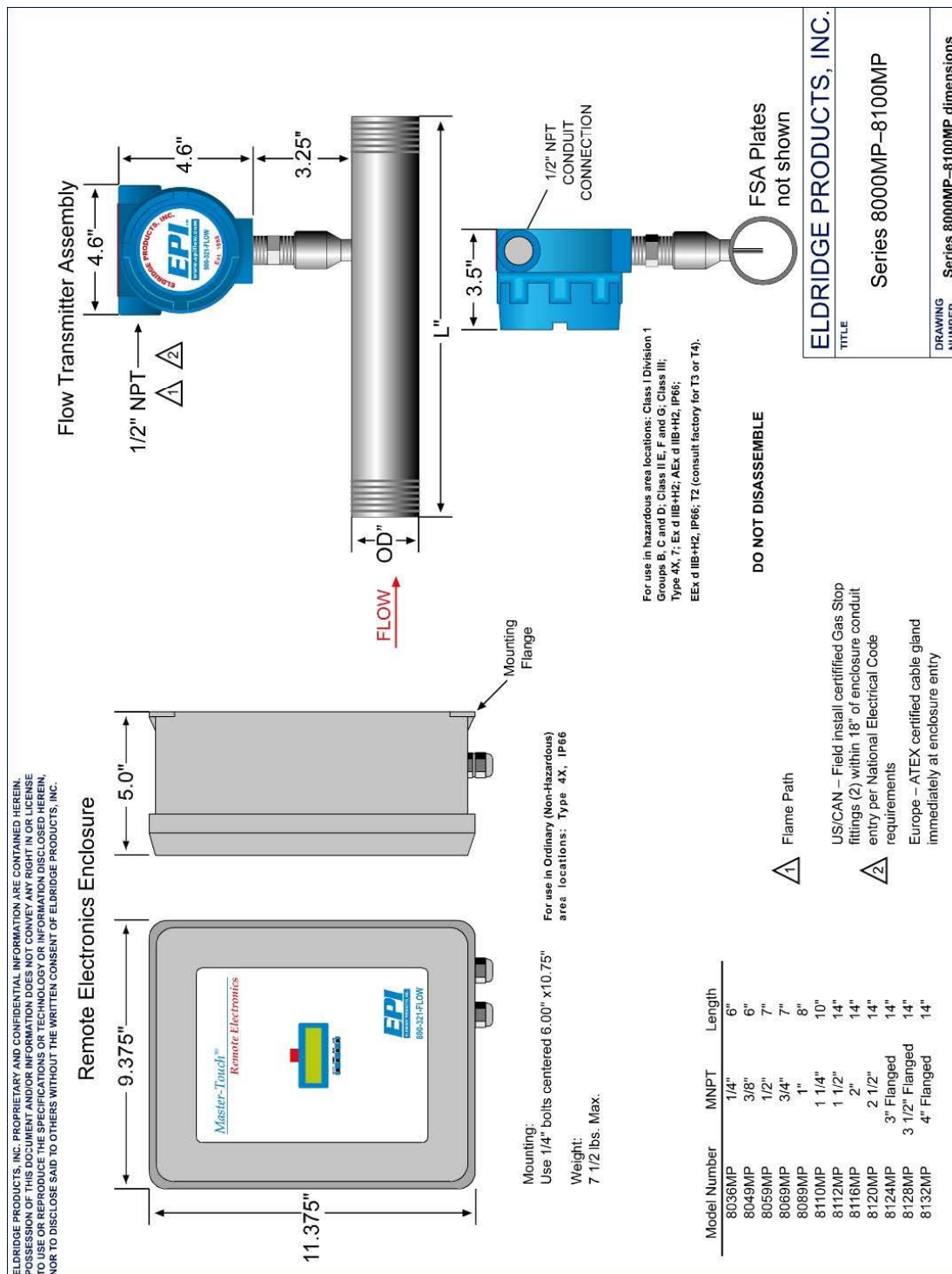
**MP Series**

Title: **MP SERIES INSTALLATION, WIRING, AND DIMENSIONS**

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**Dimensional Diagrams**

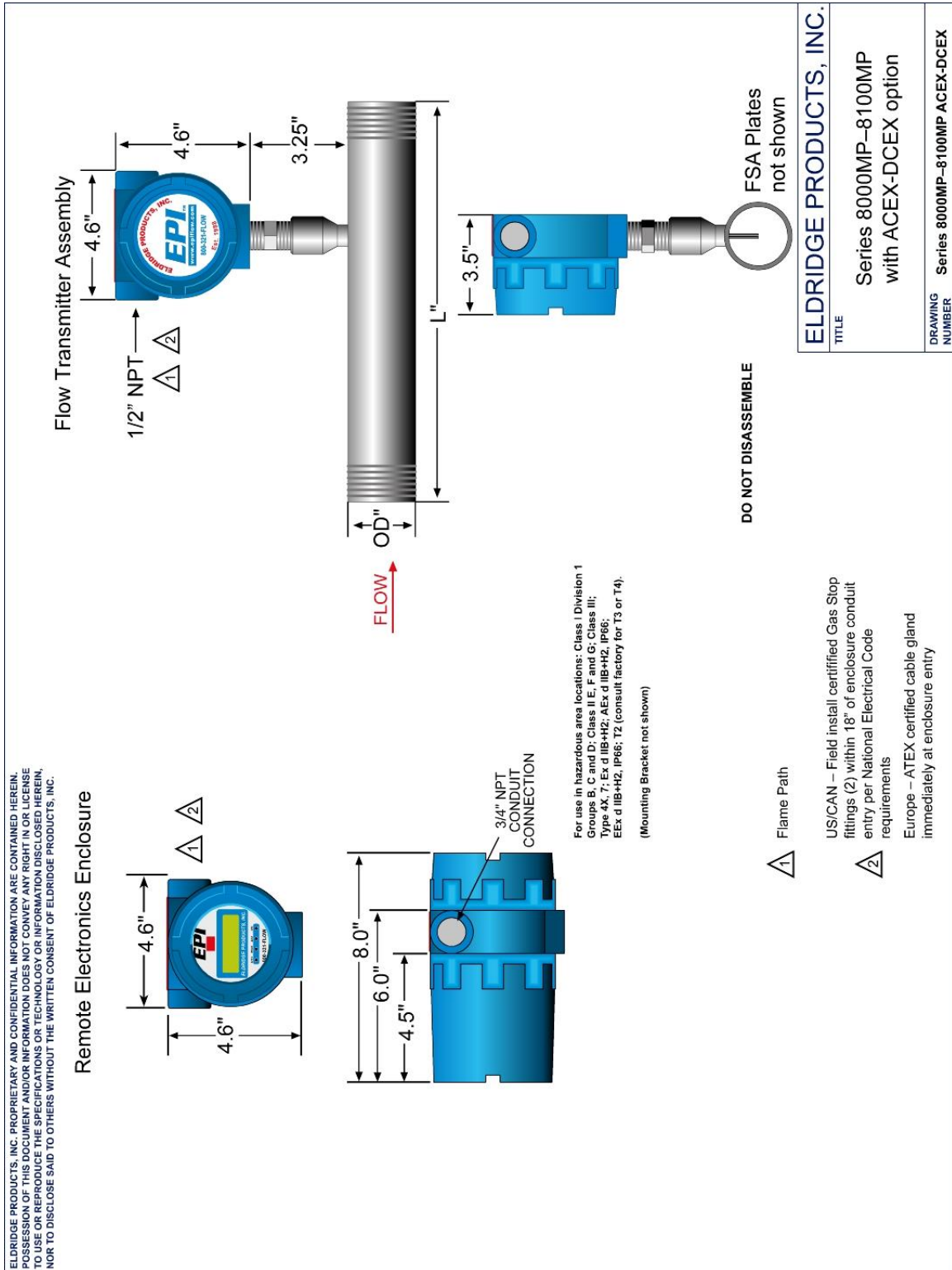
**Series 8000MP-8100MP**



Title: **MP SERIES INSTALLATION, WIRING, AND DIMENSIONS**

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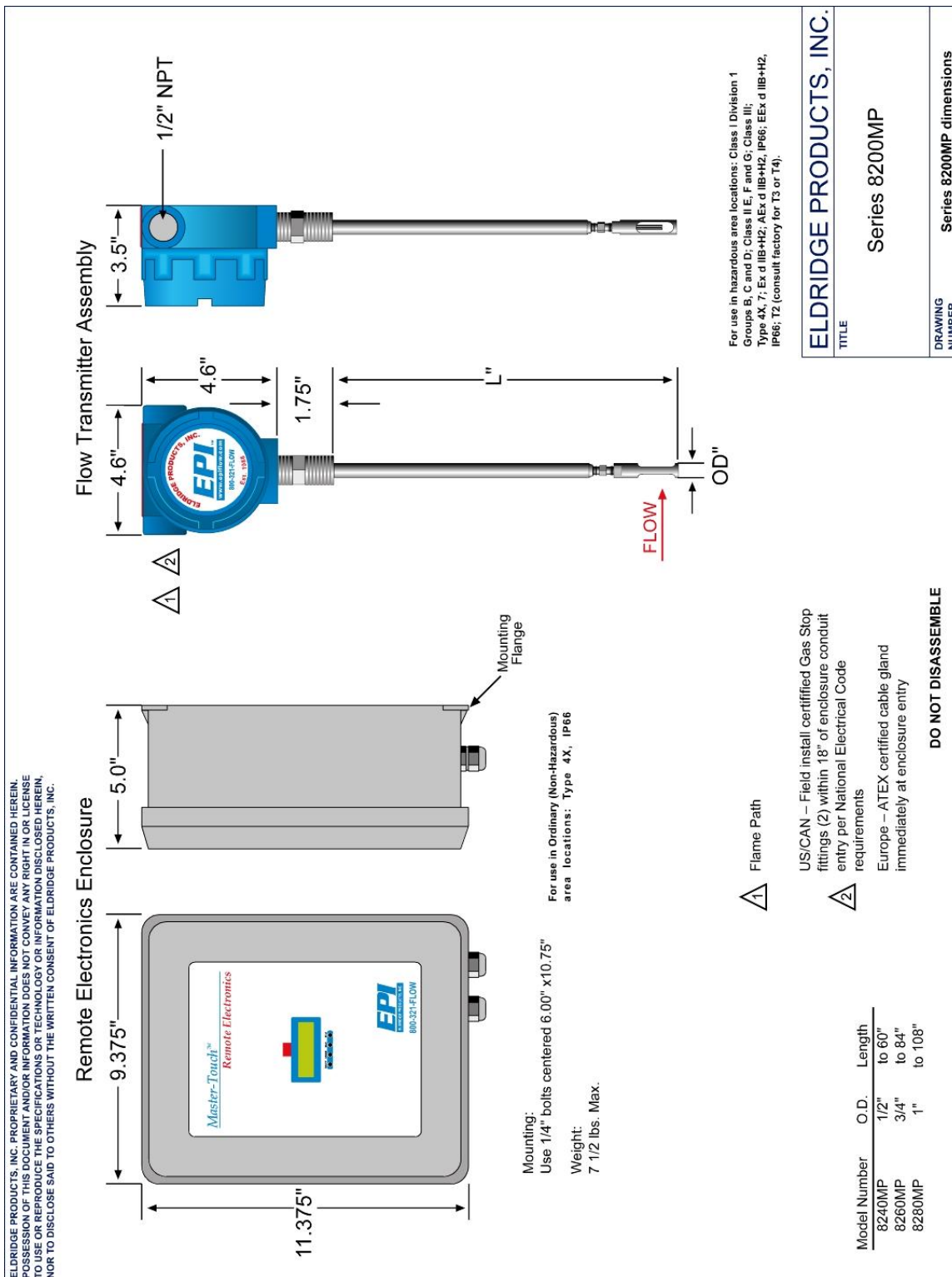
**Series 8000MP-8100MP with ACEX-DCEX Option**



Title: **MP SERIES INSTALLATION, WIRING, AND DIMENSIONS**

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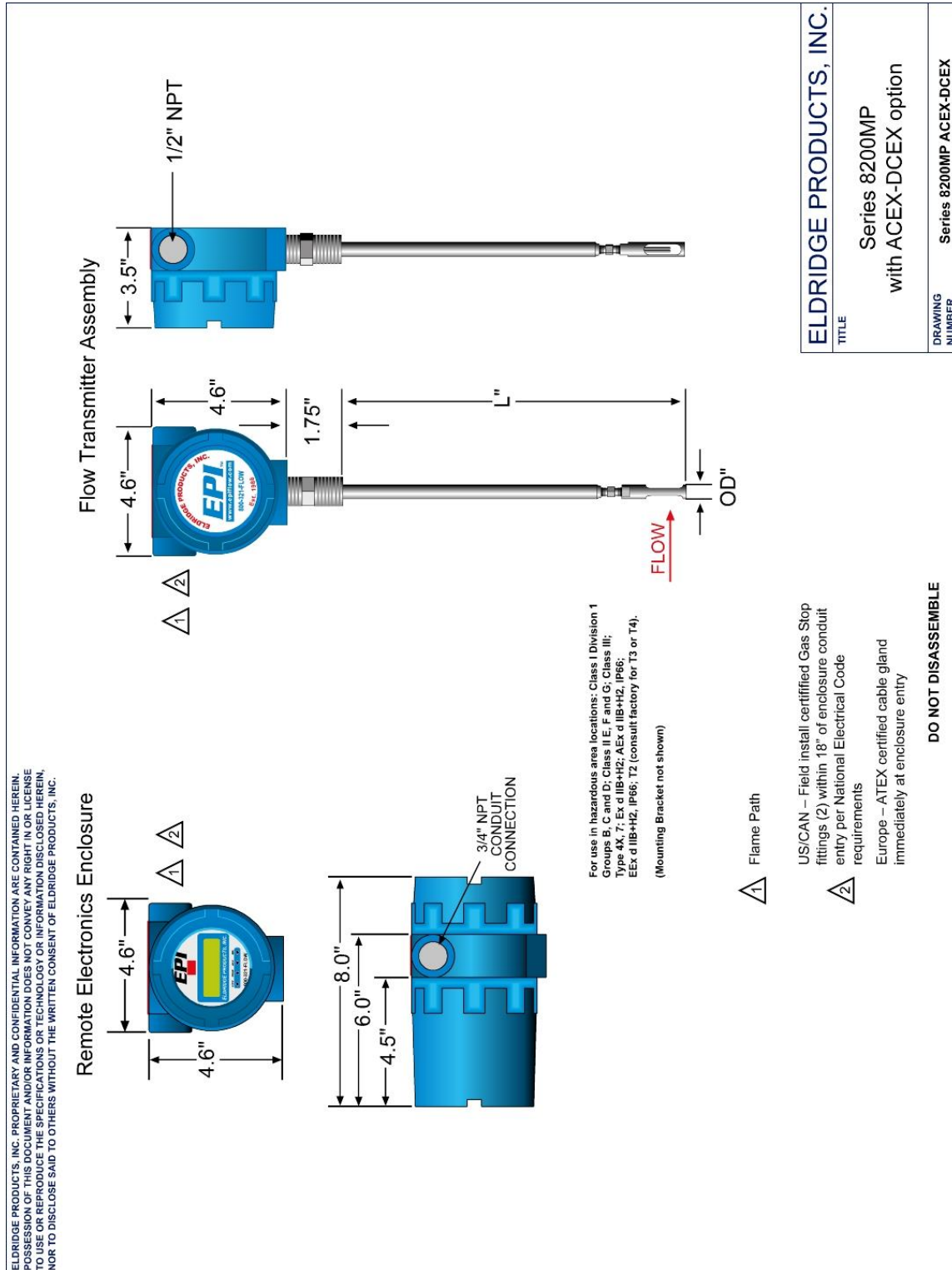
**Series 8200MP**



Title: **MP SERIES INSTALLATION, WIRING, AND DIMENSIONS**

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**Series 8200MP with ACEX-DCEX Option**





Title: **MP SERIES INSTALLATION, WIRING, AND DIMENSIONS**

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**Series 8600MP-8700MP**

4.6"

3.25"

8.0"

3/4" NPT

Flame Path

FLOW

OD"

L"

For use in hazardous area locations: Class I Division 1 Groups B, C and D; Class II E, F and G; Class III; Type 4X, 7; Ex d IIB+H2, AEx d IIB+H2, IP66; EEx d IIB+H2, IP66; T2 (consult factory for T3 or T4).

DO NOT DISASSEMBLE

ELDRIDGE PRODUCTS, INC.

Series 8600MP-8700MP

Series 8600MP-8700MP dimensions

| Model Number | O.D.           | Length |
|--------------|----------------|--------|
| 8636MP       | 1/4"           | 6"     |
| 8649MP       | 3/8"           | 6"     |
| 8659MP       | 1/2"           | 7"     |
| 8669MP       | 3/4"           | 7"     |
| 8689MP       | 1"             | 8"     |
| 8710MP       | 1 1/4"         | 10"    |
| 8712MP       | 1 1/2"         | 14"    |
| 8716MP       | 2"             | 14"    |
| 8720MP       | 2 1/2"         | 14"    |
| 8724MP       | 3" Flanged     | 14"    |
| 8728MP       | 3 1/2" Flanged | 14"    |
| 8732MP       | 4" Flanged     | 14"    |

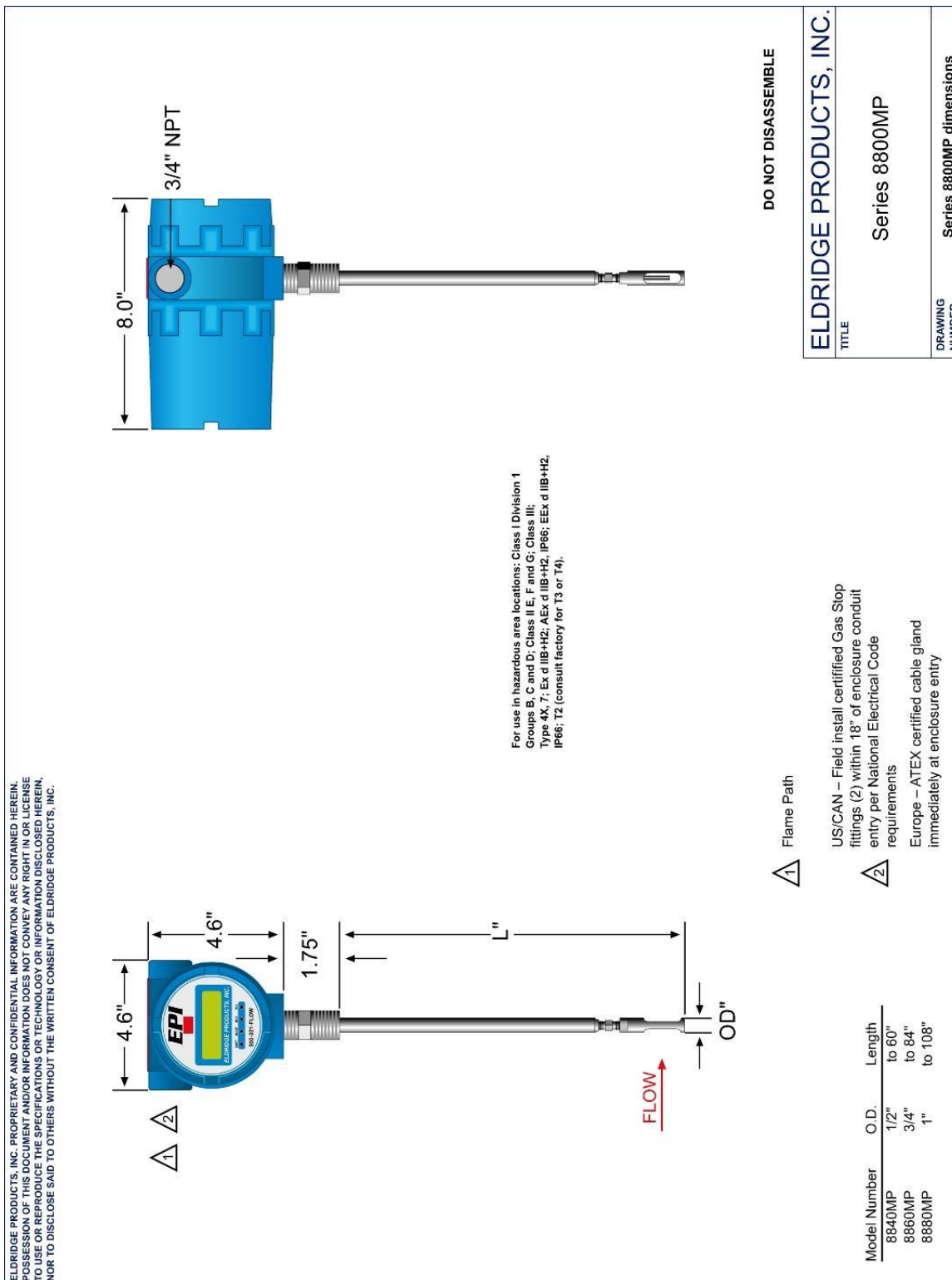
US/CAN – Field install certified Gas Stop fittings (2) within 18" of enclosure conduit entry per National Electrical Code requirements

Europe – ATEX certified cable gland immediately at enclosure entry

Title: **MP SERIES INSTALLATION, WIRING, AND DIMENSIONS**

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**Series 8800MP**





Title: **MP SERIES INSTALLATION, WIRING, AND DIMENSIONS**

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**Series 9100MP**

**Flow Transmitter Assembly**

1/2" NPT

4.6"

4.6"

4.5"

150# Class Flanges sized for Flow Section

OD"

14"

FLOW

**Remote Electronics Enclosure**

9.375"

11.375"

5.0"

Mounting Flange

**Mounting:**  
Use 1/4" bolts centered 6.00" x 10.75"

**Weight:**  
7.5 lbs. max.

**For use in Ordinary (Non-Hazardous) area locations: Type 4X, IP66**

**Model Number**    **Pipe**    **Length\***

|        |        |     |
|--------|--------|-----|
| 9116MP | 2"     | 14" |
| 9120MP | 2 1/2" | 14" |
| 9124MP | 3"     | 14" |
| 9132MP | 4"     | 14" |
| 9148MP | 6"     | 14" |

\* Consult factory for special lengths

**DO NOT DISASSEMBLE**

**ELDRIDGE PRODUCTS, INC.**

**TITLE**

**Series 9100MP**

**DRAWING NUMBER**    **Series 9100MP dimensions**

**Flame Path**

1 US/CAN – Field install certified Gas Stop fittings (2) within 18" of enclosure conduit entry per National Electrical Code requirements

2 Europe – ATEX certified cable gland immediately at enclosure entry

**Not available for Oxygen service.**

**FSA Plates not shown**

3.5"

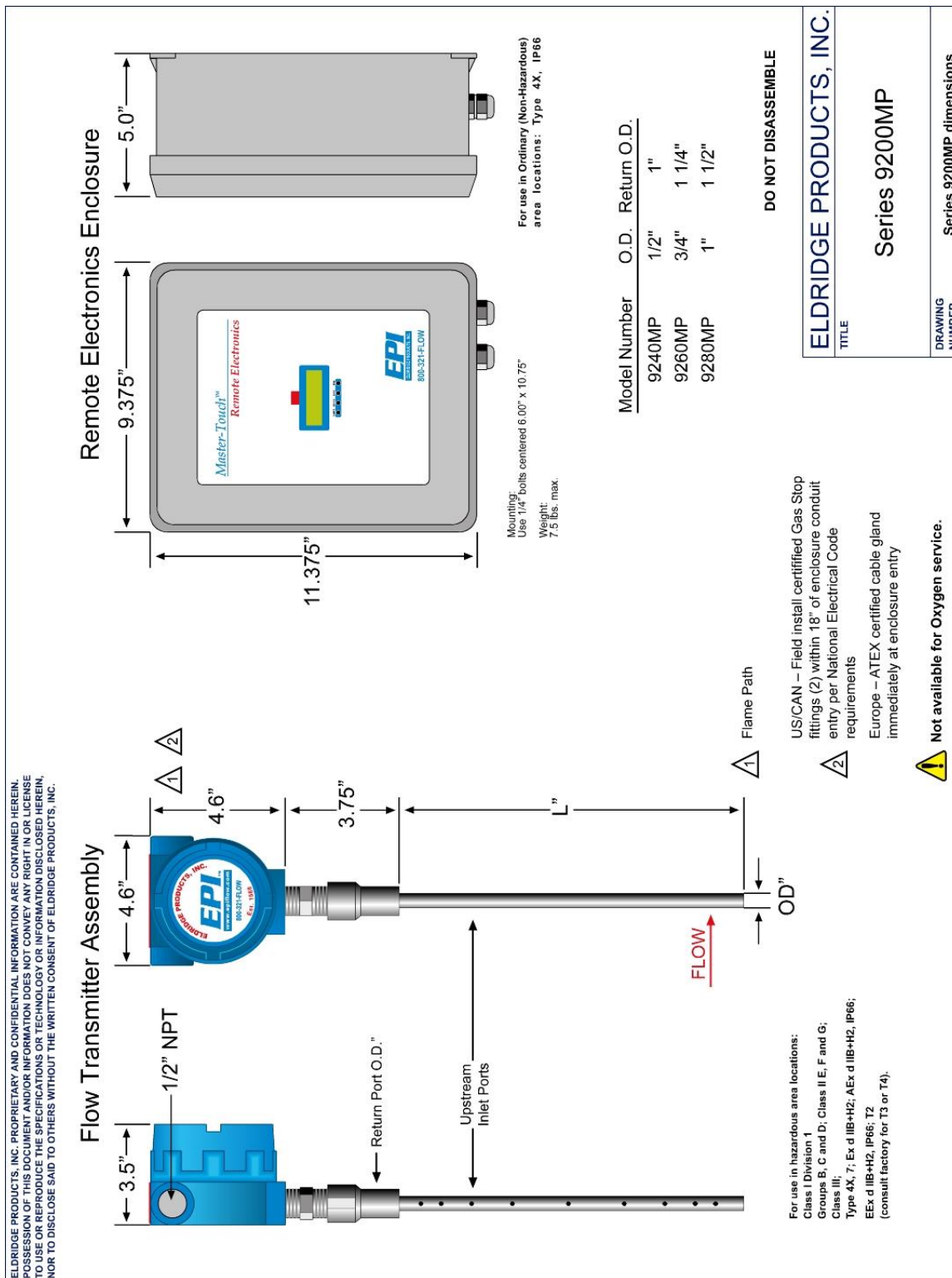
1/2" NPT

**For use in hazardous area locations: Class I Division 1 Groups B, C and D; Class II E, F and G; Class III; Type 4X, T; Ex d IIB+H2; AEx d IIB+H2, IP66; EEx d IIB+H2, IP66; T2 (consult factory for T3 or T4).**

Title: **MP SERIES INSTALLATION, WIRING, AND DIMENSIONS**

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**Series 9200MP**



Title: **MP SERIES INSTALLATION, WIRING, AND DIMENSIONS**

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**Series 9700MP**

8.0"

3/4" NPT

FSA Plates not shown

150# Class Flanges sized for Flow Section

4.6"

4.5"

14"

OD"

FLOW

| Model Number | Pipe   | Length* |
|--------------|--------|---------|
| 9716MP       | 2"     | 14"     |
| 9720MP       | 2 1/2" | 14"     |
| 9724MP       | 3"     | 14"     |
| 9732MP       | 4"     | 14"     |
| 9748MP       | 6"     | 14"     |

\* Consult factory for special lengths

**DO NOT DISASSEMBLE**

**ELDRIDGE PRODUCTS, INC.**

TITLE

Series 9700MP

DRAWING NUMBER

Series 9700MP dimensions

**Flame Path**

US/CAN – Field install certified Gas Stop fittings (2) within 18" of enclosure conduit entry per National Electrical Code requirements

Europe – ATEX certified cable gland immediately at enclosure entry

**Not available for Oxygen service.**

For use in hazardous area locations:

Class I Division 1

Groups B, C and D; Class II E, F and G;

Class III;

Type 4X, T; Ex d IIB+H2; AEx d IIB+H2, IP66;

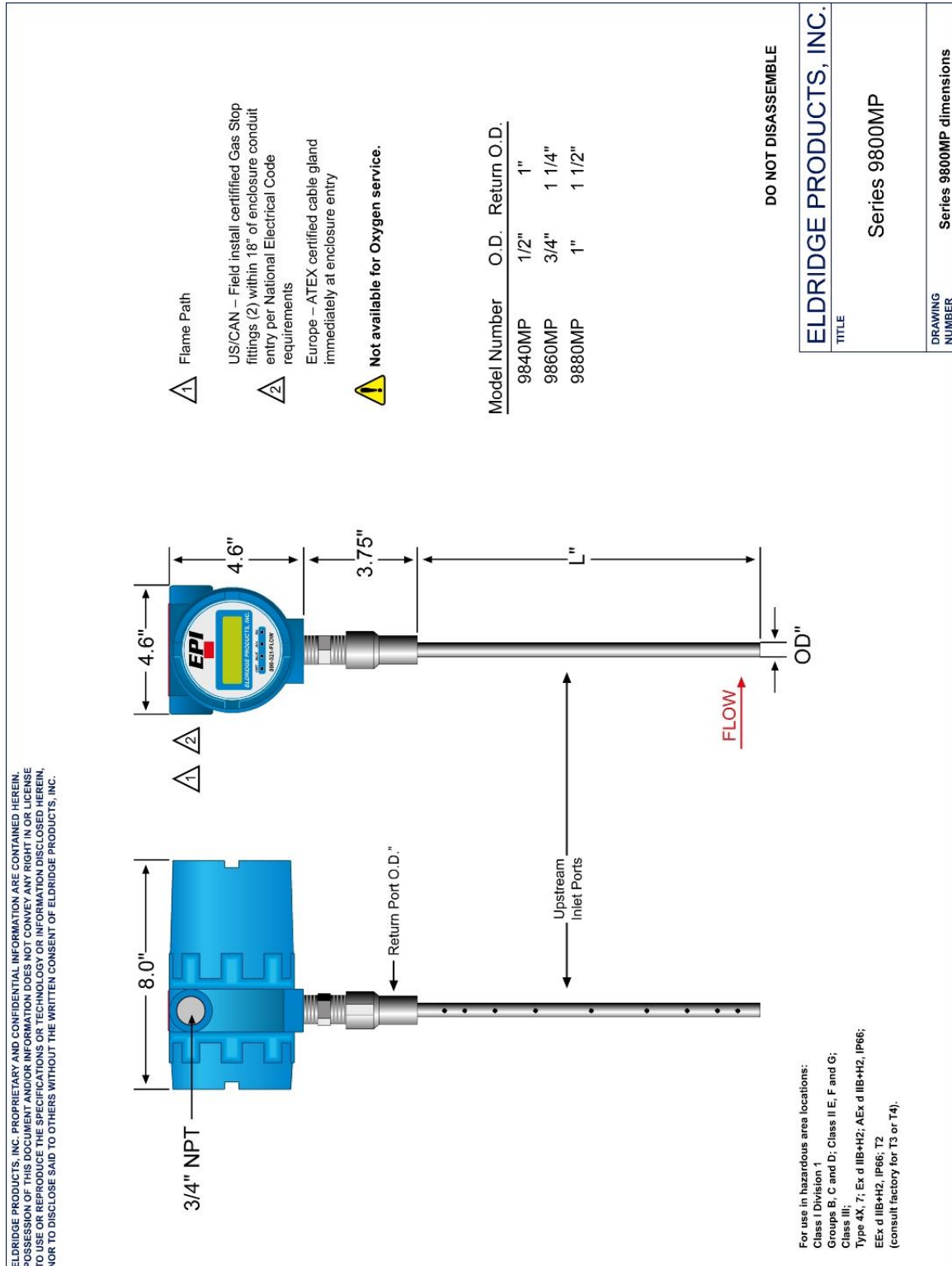
EEx d IIB+H2, IP66; T2

(consult factory for T3 or T4).

Title: **MP SERIES INSTALLATION, WIRING, AND DIMENSIONS**

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## Series 9800MP



**Title: MP SERIES INSTALLATION, WIRING, AND DIMENSIONS**

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## Factory Calibration

The factory calibration of an Eldridge Products Inc. thermal gas mass flow meter is a complex process. Our first step is to perform a temperature compensation of each flow sensor to eliminate temperature effects on the flow readings within a specified gas temperature range. Once this calibration process has been performed, it need not be done again, unless the sensor or sensor interface module be replaced.

Next, we perform a flow calibration of every flow meter. Although all flow curves are similar, they are different enough to require individual calibrations to be run for each flow meter to yield the best accuracy.

Lastly, we program the flow meter's microprocessor with the linearizing coefficients, specific flow range values, etc. as required to meet the requirements for each flow meter.

Flow calibration is a process of comparing or verifying the meter under strict test conditions against a meter of better accuracy used as a calibration standard. EPI flow calibrations are traceable to NIST through traceability of the instrumentation and equipment used.

Flow readings are checked against a calibration standard at many flow points and the data is graphed. From this graph the non-linearity of the raw flow signal is determined and aligned through our signal processor to yield a linear flow output signal.

Although thermal gas mass flow meters have good, long-term stability, EPI recommends a factory calibration and certification be performed as necessary to conform to most quality assurance programs. Where quality assurance programs do not require recertification, it shall be left at the users' discretion when to recertify.

---

*Every calibrated flow meter is shipped with both product quality certificate of conformance and calibration accuracy forms.*

---

### THE PRODUCT QUALITY CERTIFICATE OF CONFORMANCE CONTAINS:

- ✓ PRODUCT INSPECTION & QUALITY STATEMENT
- ✓ CONFORMANCE STATEMENT
- ✓ CUSTOMER AND ORDER INFORMATION
- ✓ FLOW METER INFORMATION AND CALIBRATION PARAMETERS
- ✓ CUSTOMER STATED PROCESS CONDITIONS
- ✓ APPROVALS (IF APPLICABLE)

### THE CALIBRATION ACCURACY FORM CONTAINS:

- ✓ ACCURACY SPECIFICATION
- ✓ PASS OR FAILURE OF CALIBRATION VALUES
- ✓ CUSTOMER STATED PROCESS CONDITIONS
- ✓ CONFORMANCE STATEMENT

**Title: MP SERIES INSTALLATION, WIRING, AND DIMENSIONS**

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## General Specifications and Information

### MP Series

|   |  |
|---|--|
| <b>Linear Signal Output</b>                         | 0-5 VDC & 4-20mA flow and temperature outputs  |
| <b>Mechanical Event Relays</b>                      | Two 1-Amp @ 30 VDC, user-selectable alarm functions (See EPITerm or EPICom Manual for list of functions)                                       |
| <b>Communication Protocols</b>                      | RS232 & RS485 Modbus RTU; Optional HART, BACnet, or Profibus DP  |
| <b>Display LCD 2-line 16-character</b>              | Rate, Total, milliwatts, Temperature, Event  |
| <b>Accuracy including linearity*</b>                | +/- (1% of reading + 0.5% of full scale + GTC)   |
| <b>Repeatability</b>                                | +/- 0.2% of full scale   |
| <b>Sensor response time</b>                         | 1 second to 63% of final value   |
| <b>Turn down ratio</b>                              | 100:1 @ 1500 SFPM / 7.6 NMPS minimum full scale  |
| <b>Withstands ambient temperature (electronics)</b> | -40° to 130° F (-40° to 55° C)   |
| <b>Suitable process gas temperature range**</b>     | 0°F to 392° F (0°C to 200° C)<br>Up to 525°C with High Temperature model   |
| <b>Gas temperature coefficient (GTC)</b>            | 0.02 % full scale/°C   |
| <b>Gas pressure effect</b>                          | Negligible over +/- 20% of absolute calibration pressure   |
| <b>Pressure rating maximum</b>                      | Inline: 500 PSI Std.<br>Insertion (Stainless steel ferrule): 500 PSIG<br>Insertion (Teflon ferrule): 25 PSIG                                   |
| <b>Input power requirement</b>                      | 6 Watts<br>24 Vdc @ 250mA (Standard)<br>120 Vac 50/60 Hz (Optional)<br>240 Vac 50/60 Hz (Optional)   |
| <b>Flow Meter power requirements</b>                | 5 watts maximum  |
| <b>Date/Time RAM Back-up</b>                        | Lithium Battery, 2.5-3.5v, 10-year life  |
| <b>Wetted materials</b>                             | 316L Stainless Steel unless specified (Optional Hastelloy C276)  |
| <b>Standard temperature &amp; pressure (STP)</b>    | 70°F & 29.92" Hg (Air 0.075 lb./cubic foot)<br>Optional 0°C & 1.0132 BarA (Air 0.081 lb./cubic foot)<br>Or user specified STP at time of order |
| <b>NIST traceable calibration</b>                   | Standard   |

\*EPI is not responsible for measurement errors due to flow profile irregularities caused by installation, piping configurations, surface corrosion or scale, valve placement, etc.

\*\* Specify overage process operating temperature, with high & low limits.



**Title: MP SERIES INSTALLATION, WIRING, AND DIMENSIONS**

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***Specification Notice***

Specifications contained herein are subject to change without notice, EPI cannot guarantee the applicability or suitability of our products in all situations since it is impossible to anticipate or control every condition under which our products and specifications may be used.

***Terms and Conditions***

Eldridge Products Inc. Terms & Conditions are available on [www.epiflow.com](http://www.epiflow.com)

***Approvals***

CSA/CUS – FOR USE IN HAZARDOUS AREA LOCATIONS; CLASS I DIVISION 1, GROUP B,C,D; CLASS II GROUP E,F,G; CLASS III; ENCL TYPE 4X; CLASS I ZONE I; AEx d IIB+H2 IP66; Ex d IIB+H2 IP66; T2 OR T3 OR T4 AS MARKED; Ta = 0°C TO 50°C



ATEX – Ta = 0°C TO 50°C; IP66; Ex d IIB+H2 T4 Gb/EX t IIIC T135°C Db or; Ex d IIB+H2 T3 Gb/EX t IIIC T200°C Db or; Ex d IIB+H2 T2 Gb/EX t IIIC T300°C Db; SIRA 12ATEX1302



IECEX – FOR USE IN HAZARDOUS AREA LOCATIONS; T2 OR T3 OR T4 AS MARKED; Ta = 0°C TO 50°C;; Ex d IIB+H2 T2...T4 Gb IP66; Ex tD A21 IP66 T135°C...T300°C; IECEX CSA 11.0014



KOSHA – FOR USE IN HAZARDOUS AREA LOCATIONS; T2 OR T3 OR T4 AS MARKED; Ta = 0°C TO 50°C; Ex d IIB+H2 T2...T4 Gb IP66; Ex tD A21 IP66 T135°C...T300°C



Title: **MP SERIES INSTALLATION, WIRING, AND DIMENSIONS**

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*Approved Flow Meter Labels*

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ELDRIDGE PRODUCTS INC. MONTEREY CALIFORNIA USA. CAUTION - DISCONNECT FROM SUPPLY BEFORE OPENING. KEEP COVERS TIGHT WHILE CIRCUITS ARE ALIVE. CERTIFIED CONDUIT SEAL/STOPPING BOXES WITH FILLING COMPOUND MUST BE INSTALLED WITHIN 18" OF THE ENCLOSURE PER LOCAL INSTALLATION REQUIREMENTS. WARNING - DO NOT OPEN IN AN EXPLOSIVE ATMOSPHERE. ATTENTION - NE PAS OUVRIR LE CIRCUIT AVANT D'ISOLER LE COUVERCLE. GARDER LE COUVERCLE BIEN FERMÉ TANT QUE LES CIRCUITS SONT SOUS TENSION. UN SCELLEMENT DOIT ÊTRE INSTALLÉ À MOINS DE 450mm DU BOITIER.

MODEL: \_\_\_\_\_ ID: YYMMDD# \_\_\_\_\_

APPROVED INSTRUMENT -  
FOR USE IN HAZARDOUS AREA LOCATIONS  
CLASS I GROUP I, C, D, CLASS II GROUP E, F, D, CLASS II  
ENCL. TYPE: 4X, CLASS I (ZONE I), AEx d IIBbH<sub>2</sub> IP66  
Ex d IIBbH<sub>2</sub> IP66, T2 OR T3 OR T4 AS MARKED  
Ta = 0°C TO 50°C

|   |   |   |
|---|---|---|
| 24VDC<br>DC<br>1/4 AMP<br>CODE T2<br>T300°C | 120VAC<br>50/60HZ<br>1/8 AMP<br>CODE T3<br>T300°C | 240VAC<br>50/60HZ<br>1/8 AMP<br>CODE T4<br>T350°C |
|---|---|---|

MAXIMUM WORKING PSIG

Label for CSA/CUS approved flowmeters

ELDRIDGE PRODUCTS INC. MONTEREY CALIFORNIA USA. CAUTION - DISCONNECT FROM SUPPLY BEFORE OPENING. KEEP COVERS TIGHT WHILE CIRCUITS ARE ALIVE. CERTIFIED CONDUIT SEAL/STOPPING BOXES WITH FILLING COMPOUND MUST BE INSTALLED WITHIN 18" OF THE ENCLOSURE PER LOCAL INSTALLATION REQUIREMENTS. WARNING - DO NOT OPEN IN AN EXPLOSIVE ATMOSPHERE. ATTENTION - NE PAS OUVRIR LE CIRCUIT AVANT D'ISOLER LE COUVERCLE. GARDER LE COUVERCLE BIEN FERMÉ TANT QUE LES CIRCUITS SONT SOUS TENSION. UN SCELLEMENT DOIT ÊTRE INSTALLÉ À MOINS DE 450mm DU BOITIER.

MODEL: \_\_\_\_\_ ID: YYMMDD# \_\_\_\_\_

APPROVED INSTRUMENT -  
FOR USE IN HAZARDOUS AREA LOCATIONS  
CLASS I GROUP I, C, D, CLASS II GROUP E, F, D, CLASS II  
ENCL. TYPE: 4X, CLASS I (ZONE I), AEx d IIBbH<sub>2</sub> IP66  
Ex d IIBbH<sub>2</sub> IP66, T2 OR T3 OR T4 AS MARKED  
Ta = 0°C TO 50°C

|   |   |   |
|---|---|---|
| 24VDC<br>DC<br>1/4 AMP<br>CODE T2<br>T300°C | 120VAC<br>50/60HZ<br>1/8 AMP<br>CODE T3<br>T300°C | 240VAC<br>50/60HZ<br>1/8 AMP<br>CODE T4<br>T350°C |
|---|---|---|

MAXIMUM WORKING PSIG

Label for ATEX approved flowmeters

ELDRIDGE PRODUCTS INC. MONTEREY CALIFORNIA USA. CAUTION - DISCONNECT FROM SUPPLY BEFORE OPENING. KEEP COVERS TIGHT WHILE CIRCUITS ARE ALIVE. CERTIFIED CONDUIT SEAL/STOPPING BOXES WITH FILLING COMPOUND MUST BE INSTALLED WITHIN 18" OF THE ENCLOSURE PER LOCAL INSTALLATION REQUIREMENTS. WARNING - DO NOT OPEN IN AN EXPLOSIVE ATMOSPHERE. ATTENTION - NE PAS OUVRIR LE CIRCUIT AVANT D'ISOLER LE COUVERCLE. GARDER LE COUVERCLE BIEN FERMÉ TANT QUE LES CIRCUITS SONT SOUS TENSION. UN SCELLEMENT DOIT ÊTRE INSTALLÉ À MOINS DE 450mm DU BOITIER.

MODEL: \_\_\_\_\_ ID: YYMMDD# \_\_\_\_\_

APPROVED INSTRUMENT -  
FOR USE IN HAZARDOUS AREA LOCATIONS  
CLASS I GROUP I, C, D, CLASS II GROUP E, F, D, CLASS II  
ENCL. TYPE: 4X, CLASS I (ZONE I), AEx d IIBbH<sub>2</sub> IP66  
Ex d IIBbH<sub>2</sub> IP66, T2 OR T3 OR T4 AS MARKED  
Ta = 0°C TO 50°C

|   |   |   |
|---|---|---|
| 24VDC<br>DC<br>1/4 AMP<br>CODE T2<br>T300°C | 120VAC<br>50/60HZ<br>1/8 AMP<br>CODE T3<br>T300°C | 240VAC<br>50/60HZ<br>1/8 AMP<br>CODE T4<br>T350°C |
|---|---|---|

MAXIMUM WORKING PSIG

Label for IECEx approved flowmeters

ELDRIDGE PRODUCTS INC. MONTEREY CALIFORNIA USA. CAUTION - DISCONNECT FROM SUPPLY BEFORE OPENING. KEEP COVERS TIGHT WHILE CIRCUITS ARE ALIVE. CERTIFIED CONDUIT SEAL/STOPPING BOXES WITH FILLING COMPOUND MUST BE INSTALLED WITHIN 18" OF THE ENCLOSURE PER LOCAL INSTALLATION REQUIREMENTS. WARNING - DO NOT OPEN IN AN EXPLOSIVE ATMOSPHERE. ATTENTION - NE PAS OUVRIR LE CIRCUIT AVANT D'ISOLER LE COUVERCLE. GARDER LE COUVERCLE BIEN FERMÉ TANT QUE LES CIRCUITS SONT SOUS TENSION. UN SCELLEMENT DOIT ÊTRE INSTALLÉ À MOINS DE 450mm DU BOITIER.

MODEL: \_\_\_\_\_ ID: YYMMDD# \_\_\_\_\_

APPROVED INSTRUMENT -  
FOR USE IN HAZARDOUS AREA LOCATIONS  
CLASS I GROUP I, C, D, CLASS II GROUP E, F, D, CLASS II  
ENCL. TYPE: 4X, CLASS I (ZONE I), AEx d IIBbH<sub>2</sub> IP66  
Ex d IIBbH<sub>2</sub> IP66, T2 OR T3 OR T4 AS MARKED  
Ta = 0°C TO 50°C

|   |   |   |
|---|---|---|
| 24VDC<br>DC<br>1/4 AMP<br>CODE T2<br>T300°C | 120VAC<br>50/60HZ<br>1/8 AMP<br>CODE T3<br>T300°C | 240VAC<br>50/60HZ<br>1/8 AMP<br>CODE T4<br>T350°C |
|---|---|---|

MAXIMUM WORKING PSIG

Label for KOSHA approved flowmeters

The required information for each approved flowmeter is added prior to shipment.

**ELDRIDGE PRODUCTS, INC.**

TITLE  
MP ENCLOSURE LABEL,  
PRODUCT LISTINGS  
CSA/CUS, ATEX, IECEx & KOSHA

DRAWING NUMBER  
Approval Labels — Rev. 0

**Title: MP SERIES INSTALLATION, WIRING, AND DIMENSIONS**

This document is the property of Eldridge Products Inc. and shall not be copied or used without written authorization.

***Limited Warranty***

Eldridge Products, Inc. (EPI) warrants its products to be free from defects in materials and workmanship for one year from the date of factory shipment. If there is a defect, the purchaser must notify EPI of the defect within the warranty period. Upon receipt of the defective product, EPI will either repair or replace the defective product at its sole option. EPI MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, AS TO THE PRODUCTS. EPI MAKES NO WARRANTY THAT THE GOODS SOLD TO ANY PURCHASER ARE FIT FOR ANY PARTICULAR PURPOSE. FURTHERMORE, EPI MAKES NO WARRANTY OF MERCHANTABILITY WITH RESPECT TO ANY PRODUCTS SOLD TO ANY PURCHASERS. There are no other warranties that extend beyond the description on any brochure or price quote.

***Limited Acceptance***

Acceptance of any offer is limited to its terms. Acceptances or confirmations that state additional or differing terms from this price quote shall be operative as acceptances, but all additional or differing terms shall be deemed material alterations within the meaning of Commercial Code Section 2207(2)(b), and notice of objection to them pursuant to Commercial Code Section 2207(2)(c) is hereby given. The laws of the State of California govern this contract and venue is Monterey County. Risk of loss passes F.O.B. EPI factory. Payment due in full in US Dollars within credit terms granted from factory shipment. Additional fees shall include interest on unpaid balances that are outstanding for more than granted credit terms, plus all collection costs and attorneys' fees incurred in collecting any outstanding balance. All additional or differing terms do not become part of the contract between EPI and any purchaser.

The terms of any offer are expressly limited to the terms detailed in any product brochure or price quote. Any modification to any of the terms of this offer must be in writing and must be signed by an officer of EPI.

***Service Work***

If repair work or calibration is desired; Please contact [service@epiflow.com](mailto:service@epiflow.com) or call the factory and a return materials authorization (RMA) number will be issued for each job.

All units sent in for service work shall include the entirety of the flow meter(s) with a completed RMA form. Please make sure the sensor and/or probe are protected, and all flow meters are packaged with foam or bubble wrap to avoid damage.

All meters should be shipped to:

**Eldridge Products, Inc.  
465 Reservation Rd.  
Marina, CA. 93933  
Attn: Service Department [RMA Number]**

Each flow meter returned is subject to evaluation. THERE IS MINIMUM METER EVALUATION CHARGE OF \$250. THIS CHARGE INCLUDES ANALYSIS OF FUNCTIONALITY, HARDWARE, FIRMWARE, VISUAL INSPECTION, AND PAYABLE WITH OR WITHOUT SUBSEQUENT ADDITIONAL REPAIR/SERVICE WORK.

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**Storage**

EPI recommends equipment and instrumentation be stored in an environmentally controlled storage shelter or warehouse when not in use. All openings should be sealed off to prevent foreign materials from entering the instrumentation.

**EU Declaration of Conformity**

This is to declare, in accordance with **Directives 2014/34/EU, 97/23/EC, 2004/108/EC, 93/68/EEC, 92/31/EEC, 89/336/EEC**, that the following products are designed and manufactured in accordance with the requirements of the directives. The product has been constructed with sound engineering practice and safety principles. Routine verification and testing have been performed.

**Manufacturer:**

Eldridge Products, Inc.  
465 Reservation Road, Marina, California 93933, USA

**Product Description:**

Inline style Mass Flowmeters Integral and Remote, Series 8000MP, 8100MP, 8600MP, 8700MP, 9100MP & 9700MP

Insertion style Mass Flowmeters Integral and Remote, Series 8200MP, 8800MP, 9200MP & 9800MP

**Note: For remote Flowmeters, flow transmitter is rated for explosive atmospheres, while the remote enclosure is rated for IP66 (Type 4X) ordinary locations.**

**Certifying Agency:**

ATEX Notified Body SIRA 0518:

CSA Group

Unit 6 Hawarden Industrial Park

Hawarden, Deeside

CH5 3US

United Kingdom

Directive: 2014/34/EU

EC-Type Examination Certificate: SIRA 12ATEX1302

EN 60079-0:2012 EN 60079-1:2007 EN 60079-31:2009 (Gap analysis performed on EN 60079-31: 2014 and product remains compliant)

**Product Certifications:**

CE 0518



II 2 G D

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Ex d IIB+H2 T4/T3/T2 Gb (refer to the description for temperature class and surface temperature)

Ex t IIIC T135°C/T200°C/T300° Db

Ta = 0°C to +50°C

**Note: Refer to the product temperature code and “T” rating number as stamped on product label.**

Pressure Equipment Directive 97/23/EC – As per 3.6 and indent 6 the following products do not exceed Category I as listed below and are covered by Directive 94/9/EC. Directive 97/23/EC tables 6 & 7 have been applied;

Insertion probe flowmeters Series 8200MP, 8800MP, 9200MP, 9800MP are volume-less and are exempt;

In-line Series 8000MP, 8100MP, 8600MP, 8700MP, 9100MP, 9700MP have the following ANSI inch pipe sizes (DN equivalent size) at maximum pressure limits in PSI (Bars).

**Example: 1-1/2” @ 361 is a one and one half inch In-line pipe flowmeter with a maximum allowable pressure of 361 PSIG.**

Group 1 fluids (Gas: explosive, flammable, toxic, oxidizing): Excluded from Directive 97/23/EC, standard engineering practice applied 1/4” thru 1” (DN10 thru DN25) @ 500(34.5)

Group 1 fluids (Gas: explosive, flammable, toxic, oxidizing): Category I, 1-1/4” (DN32) @ 452(31.2); 1-1/2” (DN40) @ 361(24.9); 2” (DN50) @ 289(19.9); 2-1/2” (DN65) @ 222(15.3); 3” (DN80) @ 180(12.4); 4” (DN100) @ 145(10);

**Note: 1) Larger line sizes require insertion probe flowmeters. 2) Higher than listed pressures require insertion probe flowmeters.**

Group 2 fluids (Gas: all other non Group 1 nonflammable gases ): Excluded from Directive 97/23/EC, standard engineering practice applied 1/4” thru 1-1/4” (DN10 thru DN32) @ 500(34.5)

Group 2 fluids (Gas: all other non Group 1 nonflammable gases ): Category I, 1-1/4” (DN32) @ 500(34.5); 1-1/2” (DN40) @ 500(34.5); 2” (DN50) @ 500(34.5); 2-1/2” (DN65) @ 500(34.5); 3” (DN80) @ 500(34.5); 4” (DN100) @ 500(34.5);

**Note: 1) Larger line sizes require insertion probe flowmeters. 2) Higher than listed pressures require insertion probe flowmeters.**

For and on behalf of Eldridge Products, Inc.



Mark F. Eldridge, President

June 22, 2017

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**Title: MP SERIES INSTALLATION, WIRING, AND DIMENSIONS**

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## **Additional References**

### ***EPITerm Software***

[Please follow link for EPITerm Software](#)

### ***EPITerm Interface User Manual***

[Please follow link for EPITerm Interface User Manual](#)

### ***EPICom Live User Manual***

[Please follow link for EPICom Live User Manual](#)

### ***EPI Live Modbus User Manual***

[Please follow link for EPI LIVE Modbus User Manual](#)

### ***EPIVal Quick Start Guide***

[Please follow link for EPIVal Quick Start Guide](#)

### ***BACnet Quick Start Guide***

[Please follow link for BACnet Quick Start Guide](#)

## ***Customer Satisfaction Survey***

Thank you for your recent business with Eldridge Products Inc. and hope you will participate in our customer satisfaction survey. It takes 5-10 minutes

[Take the EPI Customer Satisfaction Survey now](#)

**About this survey:** Your information and responses will remain anonymous, while its contents will be used for improving our company offerings.

**\*Once completed:** save a copy, and email it to [Service@epiflow.com](mailto:Service@epiflow.com)



**Hitma Instrumentatie**

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+31 (0)297 - 514 833

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