Certificate of Compliance

Certificate: 70181228 **Master Contract:** 152450 (044092_0_000)

Project: 70181228 **Date Issued:** 2018-05-01

Issued to: **Micro Motion Incorporated**
7070 Winchester Cir
Boulder, Colorado 80301
USA

Attention: Carnation Ortega

The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only.

Issued by: Sorin Tat
Sorin Tat

PRODUCTS

CLASS - C225804 - PROCESS CONTROL EQUIPMENT-Intrinsically Safe, Entity - For Hazardous Locations-
CLASS - C225884 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe, Entity-- For Hazardous Locations - Certified to US Standards

Class I, Div. 1 and Div. 2 Group ABCD

Ex ia IIC T5-T2 Ga
Class I, Zone 0, AEx ia IIC T5-T2 Ga

Model TA010T*, TA025T*, TA050T*, TA075T*, TA100T*, TA200T* and TA300T* Series Coriolis mass flowmeter sensors with the following entity parameters:

-For Exciter circuit type EC1R (terminals 8-9):
Ui = 30V,
Ii = 90mA,
Pi = 0.4W,
Ci = 0,
Li ≤ 4.38mH (*)

-For Exciter circuit type EC2R (terminals 8-9) (using an intrinsically safe barrier circuit inside of a Junction box):
Ui = 30V,
Ii= 90mA,
Pi = 1W,
4.38mH ≤ Li ≤ 220mH (*),
Ci = 0

-For Pick up coils (terminals 1-2 and 3-4):
Ui = 30V,
Ii = 50mA,
Pi = 0.3W
Ci = 0,
Li < 14mH (*)

-For Temperature sensor circuit (terminals 5-8 or terminals 5-7 with EC1R and EC2R circuits):
Ui = 30V,
Ii = 100mA,
Pi = 0.333W,
Ci = 0,
Li = 0

(*) the exciter coils inductance within that range.

Intrinsically safe when connected in accordance with Installation/Control Drawing No EB-20049977 AA(CSA-D-IS).

The applicable ambient temperature is dependent on the type of atmosphere, sensor configuration, process temperature and the applicable temperature class.

The maximum process temperature is dependent on the sensor configuration and used materials.

Neck extensions are used when use at high process temperatures is intended, to reduce the temperature on the components (Junction box or HAN-R23 connector) mounted on the top of the neck.

Further information can be found in the following tables.

-Remotely mounted (with Junction box)

Neck extension length (Between the TA* sensor neck, and the J-Box) Sensors have a standard neck > 60mm	Process temperature (˚C)	Ambient Temperature Range(˚C)	Temperature Class
Without	60	-40 up to +60	T5
Without	100	-40 up to +80	T4
100 mm	115	-40 up to +80	T4

100 mm	175	-40 up to +80	T3
100 mm	180	-40 up to +80	T2

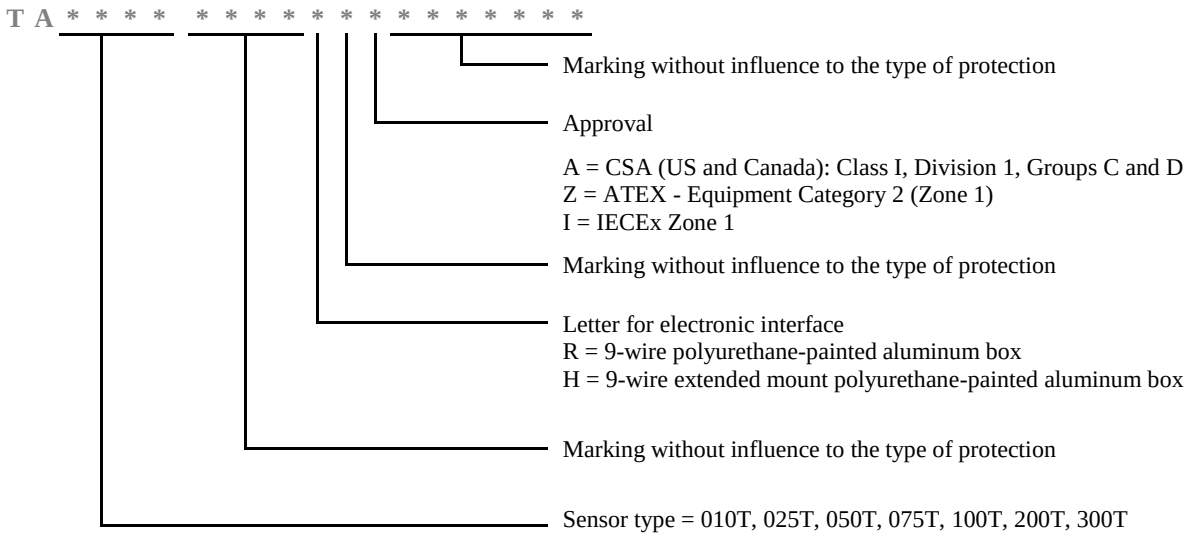
Process pressure range: 1 – 50bar (Depending on the sensor)

Special Conditions of Safe Use:

- If the sensor is mounted separately, an equipotential bonding between the transmitter and the sensor is essential and must be established.
- For the application of the sensor in an ambient temperature of less than -20˚C and higher than +60˚C, the cables and cable entries shall be suitably rated.
- Some measuring tubes built of corrosion-resistant steel have a thickness of < 1mm. When installed with Ex ib Gb transmitters the risk of mechanical damage should be excluded.
- For models with junction box enclosure made from Aluminum alloy, ignition sources due to impact and friction sparks could occur. This shall be considered during installation.
-Field wiring using multi-conductor cable shall either have each conductor pair enclosed in a grounded metal shield, or each conductor shall have a minimum of 0.25mm (0.01") insulation thickness.
-For ordinary locations installations to be supplied by a Limited Energy Source in accordance with CSA 61010-1-12/UL 61010-1.
- Combination of the external barriers from the transmitter has not been assessed so each input wiring circuit to the sensors should be kept segregated from the others inputs as per requirements of the standards.
- For exciter coil type EC2R the supply signal from the transmitter shall be pulsed with low duty cycle or non-repetitive.

For Models TA* the following Model Code structure applies:

TA Model Code Structure:



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APPLICABLE REQUIREMENTS

CAN/CSA Std C22.2 No. 0-10	General Requirements – Canadian Electrical Code, Part II
CAN/CSA C22.2 No. 60079-0-15	Explosive Atmospheres--Part 0: Equipment - General Requirements
CAN/CSA C22.2 No. 60079-11-14	Explosive Atmospheres - Part 11: Equipment protection by Intrinsic Safety "i"
UL 60079-0:2013	Explosive Atmospheres - Part 0: Equipment - General Requirements
UL 60079-11:2014	Explosive Atmospheres - Part 1: Equipment protection by Intrinsic Safety "i"
CAN/CSA C22.2 No. 61010-1-12	Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use--Part 1: General Requirements
UL 61010-1 – 3rd Edition	Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use - Part 1: General Requirements

Supplement to Certificate of Compliance

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The products listed, including the latest revision described below, are eligible to be marked in accordance with the referenced Certificate.

Product Certification History

Project	Date	Description
70181228	2018-05-01	The original certification of model TA* sensors for Class I Div.1 and Zone 0 intrinsically safe protected.