



| CONFIDENTIAL AND PROPRIETARY INFORMATION IS CONTAINED HEREIN AND MUST BE HANDLED ACCORDINGLY | REVISIONS |  |            |        |          |
|--|-----------|--|------------|--------|----------|
|  | REV       | DESCRIPTION  | CHG. NO.   | APP'D  | DATE     |
|  | AB        | ADD NOTE 8; UPDATE COMMUNICATOR; UPDATE CABLE PARAMATERS PG. 3; UPDATE OUTPUT CODE TABLE PG.4; UPDATE CABLE PARAMATERS PG. 4 | RTC1057766 | T.J.L. | 9/6/13   |
|  | AC        | UPDATE CAPACITANCE AND INDUCTANCE CABLE PARAMATERS, PGS 3 & 4  | RTC1058148 | J.B.   | 10/22/13 |

**APPROVALS FOR**

OUTPUT CODE A I.S. ENTITY PARAMETERS SHEETS 2  
 OUTPUT CODE A (4-20 mA HART) I.S. SEE SHEETS 3  
 REMOTE METER (4-20 mA HART) I.S. SEE SHEET 4

TO ASSURE AN INTRINSICALLY SAFE SYSTEM, THE TRANSMITTER AND BARRIER MUST BE WIRED IN ACCORDANCE WITH THE BARRIER MANUFACTURER'S FIELD WIRING INSTRUCTIONS AND THE APPLICABLE CIRCUIT DIAGRAM.

WARNING - EXPLOSION HAZARD - SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION I.

AVERTISSEMENT - RISQUE D'EXPLOSION - LA SUBSTITUTION DE COMPOSANTS PEUT RENDRE CE MATERIEL INACCEPTABLE POUR LES EMBLEMES DE CLASSE I, DIVISION I.

CAD MAINTAINED (MicroStation)

|  |                             |         |  |         |                        |
|--|-----------------------------|---------|--|---------|------------------------|
| UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES [mm]. REMOVE ALL BURRS AND SHARP EDGES. MACHINE SURFACE FINISH 125<br><br>-TOLERANCE-<br>.X ± .1 [2,5]<br>.XX ± .02 [0,5]<br>.XXX ± .010 [0,25]<br><br>FRACTIONS      ANGLES<br>± 1/32            ± 2°<br><br>DO NOT SCALE PRINT | CONTRACT NO.                |         |  <b>ROSEMOUNT</b><br>8200 Market Boulevard • Chanhassen, MN 55317 USA |         |                        |
|  | DR. <b>Myles Lee Miller</b> | 11/2/10 |  |         |                        |
|  | CHK'D                       |         | SIZE   | FSCM NO | DWG NO.                |
|  | APP'D. <b>A.J.W.</b>        |         | <b>A</b>   |         | <b>03151-1316</b>      |
|  | APP'D. GOVT.                |         | SCALE  | N/A     | WT. _____ SHEET 1 OF 6 |

Form Rev AC



| REVISIONS |             |          |       |      |
|-----------|-------------|----------|-------|------|
| REV       | DESCRIPTION | CHG. NO. | APP'D | DATE |
| AC        |             |          |       |      |

**ENTITY CONCEPT APPROVALS**

THE ENTITY CONCEPT ALLOWS INTERCONNECTION OF INTRINSICALLY SAFE APPARATUS TO ASSOCIATED APPARATUS NOT SPECIFICALLY EXAMINED IN COMBINATION AS A SYSTEM. THE APPROVED VALUES OF MAX. OPEN CIRCUIT VOLTAGE ( $V_{oc}$ ) AND MAX. SHORT CIRCUIT CURRENT ( $I_{sc}$ ) AND MAX. POWER ( $V_{oc} \times I_{sc}/4$ ), FOR THE ASSOCIATED APPARATUS MUST BE LESS THAN OR EQUAL TO THE MAXIMUM SAFE INPUT VOLTAGE ( $V_{max}$ ), MAXIMUM SAFE INPUT CURRENT ( $I_{max}$ ), AND MAXIMUM SAFE INPUT POWER ( $P_{max}$ ) OF THE INTRINSICALLY SAFE APPARATUS. IN ADDITION, THE APPROVED MAX. ALLOWABLE CONNECTED CAPACITANCE ( $C_a$ ) OF THE ASSOCIATED APPARATUS MUST BE GREATER THAN THE SUM OF THE INTERCONNECTING CABLE CAPACITANCE AND THE UNPROTECTED INTERNAL CAPACITANCE ( $C_i$ ) OF THE INTRINSICALLY SAFE APPARATUS, AND THE APPROVED MAX. ALLOWABLE CONNECTED INDUCTANCE ( $L_a$ ) OF THE ASSOCIATED APPARATUS MUST BE GREATER THAN THE SUM OF THE INTERCONNECTING CABLE INDUCTANCE AND THE UNPROTECTED INTERNAL INDUCTANCE ( $L_i$ ) OF THE INTRINSICALLY SAFE APPARATUS.

FOR OUTPUT CODE A MODEL 3051S  
CLASS I, DIV. 1, GROUPS A, B, C AND D

|                   |   |
|-------------------|---|
| $V_{MAX} = 30V$   | $V_{OC}$ IS LESS THAN OR EQUAL TO 30V       |
| $I_{MAX} = 300mA$ | $I_{SC}$ IS LESS THAN OR EQUAL TO 300mA     |
| $C_i = 12nF$      | $C_A$ IS GREATER THAN $12nF + C_{cable}$    |
| $L_i = 33\mu H$   | $L_A$ IS GREATER THAN $33\mu H + L_{cable}$ |

NOTE: ENTITY PARAMETERS LISTED APPLY ONLY TO ASSOCIATED APPARATUS WITH LINEAR OUTPUT.

|   |                  |                               |                            |  |
|---|------------------|-------------------------------|----------------------------|--|
| Rosemount Inc.<br>8200 Market Boulevard<br>Chanhassen, MN 55317 USA |                  | CAD MAINTAINED (MicroStation) |                            |  |
| DR.<br><b>Myles Lee Miller</b>                                      | SIZE<br><b>A</b> | FSCM NO.                      | DWG NO. <b>03151-1316</b>  |  |
| ISSUED  | SCALE <b>N/A</b> | WT. _____                     | SHEET <b>2</b> OF <b>6</b> |  |

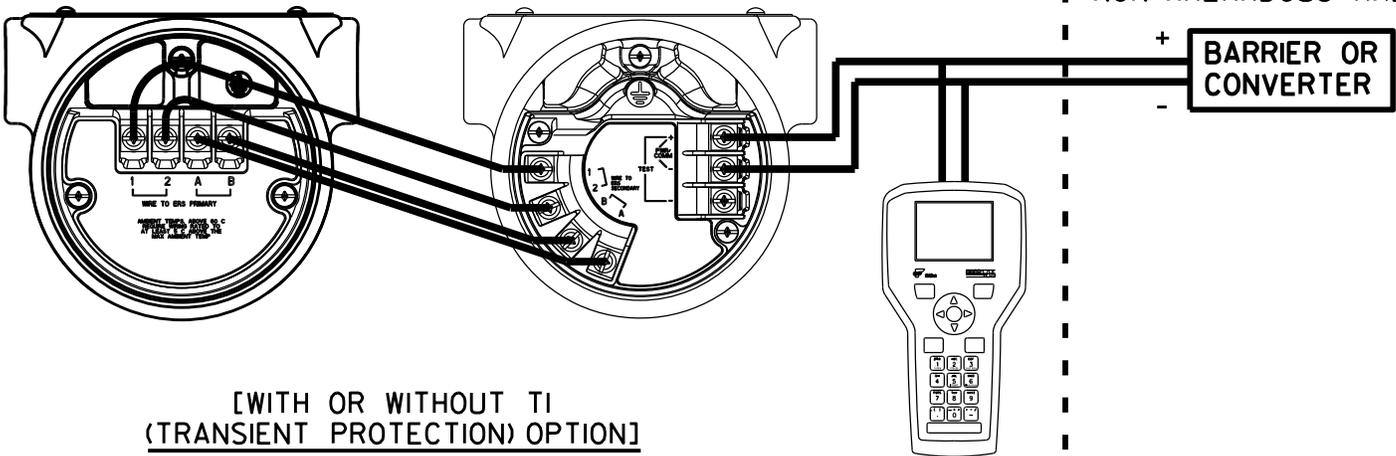
| REVISIONS |             |          |       |      |
|-----------|-------------|----------|-------|------|
| REV       | DESCRIPTION | CHG. NO. | APP'D | DATE |
| AC        |             |          |       |      |

CSA INTRINSIC SAFETY APPROVALS  
CIRCUIT CONNECTION WITH BARRIER OR CONVERTER

Ex ia  
INTRINSICALLY SAFE/SECURITE INTRINSEQUE  
4-20 mA, ('A' OUTPUT CODE)

HAZARDOUS AREA

NON-HAZARDOUS AREA



[WITH OR WITHOUT T1  
(TRANSIENT PROTECTION) OPTION]

ROSEMOUNT  
MODEL 475 SMART  
FAMILY INTERFACE

|  |
|--|
| MAXIMUM CABLE<br>PARAMETERS                  |
| CAPACITANCE - 25.35 nF                       |
| INDUCTANCE - 30 μH                           |
| LENGTH - 150 Ft                              |
| RECOMMENDED CABLE:<br>MADISON AWM STYLE 254G |

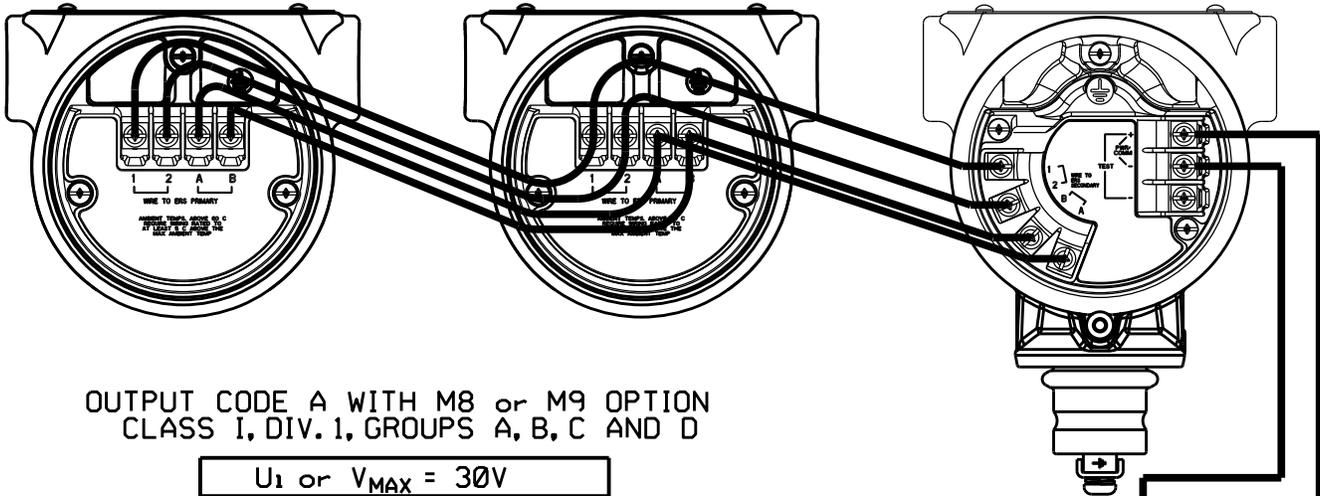
|  |         |
|--|---------|
| Rosemount Inc.<br>8200 Market Boulevard<br>Chanhasen, MN 55317 USA |         |
| DR. <b>Myles Lee Miller</b>  | 11/2/10 |
| ISSUED   |         |

|                               |         |         |              |
|-------------------------------|---------|---------|--------------|
| CAD MAINTAINED (MicroStation) |         |         |              |
| SIZE                          | FSCM NO | DWG NO. | 03151-1316   |
| A                             |         |         |              |
| SCALE                         | N/A     | WT.     | SHEET 3 OF 6 |

| REVISIONS |             |          |       |      |
|-----------|-------------|----------|-------|------|
| REV       | DESCRIPTION | CHG. NO. | APP'D | DATE |
| AC        |             |          |       |      |

CSA INTRINSIC SAFETY APPROVALS  
CIRCUIT CONNECTION WITH BARRIER OR CONVERTER

Ex ia  
INTRINSICALLY SAFE/SECURITE INTRINSEQUE  
4-20 mA, ("A" OUTPUT CODE)



OUTPUT CODE A WITH M8 or M9 OPTION  
CLASS I, DIV. 1, GROUPS A, B, C AND D

|                            |
|----------------------------|
| $U_1$ or $V_{MAX} = 30V$   |
| $I_1$ or $I_{MAX} = 300mA$ |
| $C_1 = 12nF$               |
| $L_1 = 33\mu H$            |

|  |
|--|
| MAXIMUM CABLE<br>PARAMETERS                  |
| CAPACITANCE - 25.35 nF                       |
| INDUCTANCE - 30 $\mu$ H                      |
| LENGTH - 150 Ft                              |
| RECOMMENDED CABLE:<br>MADISON AWM STYLE 254G |

HAZARDOUS AREA

NON-HAZARDOUS AREA

REMOTE MOUNT METER

Rosemount Inc.  
8200 Market Boulevard  
Chanhasen, MN 55317 USA

CAD MAINTAINED (MicroStation)

DR. **Myles Lee Miller**

SIZE **A** FSCM NO

DWG NO. **03151-1316**

ISSUED

SCALE **N/A** WT. \_\_\_\_\_

SHEET **4** OF **6**



| REVISIONS |             |          |       |      |
|-----------|-------------|----------|-------|------|
| REV       | DESCRIPTION | CHG. NO. | APP'D | DATE |
| AC        |             |          |       |      |

### 4-20 mA, ("A" OUTPUT CODE)

| DEVICE  | PARAMETERS   | APPROVED FOR CLASS I, DIV.I |
|---|--|-----------------------------|
| CSA APPROVED SAFETY BARRIER   | 30 V OR LESS<br>* 330 OHMS OR MORE<br>* 28 V OR LESS<br>* 300 OHMS OR MORE<br>25 V OR LESS<br>200 OHMS OR MORE<br>* 22 V OR LESS<br>180 OHMS OR MORE | GROUPS A, B, C, D           |
| FOXBORO CONVERTER<br>2AI-I2V-CGB, 2AI-I3V-CGB,<br>2AS-I3I-CGB, 3A2-I2D-CGB,<br>3A2-I3D-CGB, 3AD-I3I-CGB,<br>3A4-I2D-CGB, 2AS-I2I-CGB,<br>3F4-I2DA |  | GROUPS B, C, D              |
| CSA APPROVED SAFETY BARRIER   | 30 V OR LESS<br>150 OHMS OR MORE   | GROUPS C, D                 |

Rosemount Inc.  
 8200 Market Boulevard  
 Chanhassen, MN 55317 USA

CAD MAINTAINED (MicroStation)

|                             |                  |           |                            |
|-----------------------------|------------------|-----------|----------------------------|
| DR. <b>Myles Lee Miller</b> | SIZE <b>A</b>    | FSCM NO   | DWG NO. <b>03151-1316</b>  |
| ISSUED                      | SCALE <b>N/A</b> | WT. _____ | SHEET <b>5</b> OF <b>6</b> |

Form Rev. AC



| REVISIONS |             |          |       |      |
|-----------|-------------|----------|-------|------|
| REV       | DESCRIPTION | CHG. NO. | APP'D | DATE |
| AC        |             |          |       |      |

**NOTES:**

1. APPROVED ASSOCIATED APPARATUS MUST BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
2. CSA APPROVED ASSOCIATED APPARATUS MUST MEET THE FOLLOWING PARAMETERS:  
Voc LESS THAN OR EQUAL TO (Vmax AND Isc LESS THAN OR EQUAL TO (Imax).
3. THE MAXIMUM NON-HAZARDOUS AREA VOLTAGE MUST NOT EXCEED 250V.
4. THE INSTALLATION MUST BE IN ACCORDANCE WITH CANADIAN ELECTRICAL CODE.
5. CAUTION: USE ONLY SUPPLY WIRES SUITABLE FOR 5°C ABOVE SURROUNDING TEMPERATURE.
6. WARNING: SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY.
7. THIS PRODUCT MEETS THE DUAL SEAL REQUIREMENTS OF ANSI/ISA 12.27.01. NO ADDITIONAL PROCESS SEALING IS REQUIRED. THE DUAL SEAL PROCESS TEMPERATURE RANGE IS -50°C TO 315°C. FOR THE IN-SERVICE LIMITS APPLICABLE TO A SPECIFIC MODEL, SEE "PROCESS TEMPERATURE LIMITS" IN APPENDIX "A" OF THE PRODUCT MANUAL.
8. TEMPERATURE CODE T3C AT 70°C MAXIMUM OPERATING TEMPERATURE.

|   |                         |
|---|-------------------------|
| Rosemount Inc.<br>8200 Market Boulevard<br>Chanhassen, MN 55317 USA |                         |
| DR.   | <b>Myles Lee Miller</b> |
| ISSUED  |                         |

|                               |            |         |                   |
|-------------------------------|------------|---------|-------------------|
| CAD MAINTAINED (MicroStation) |            |         |                   |
| SIZE                          | FSCM NO    | DWG NO. | <b>03151-1316</b> |
| <b>A</b>                      |            |         |                   |
| SCALE                         | <b>N/A</b> | WT.     | _____             |
|                               |            | SHEET   | <b>6 OF 6</b>     |

Form Rev AC