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TABULATION  
DASH NO.

# CSA INTRINSIC SAFETY APPROVAL CONFIGURATION

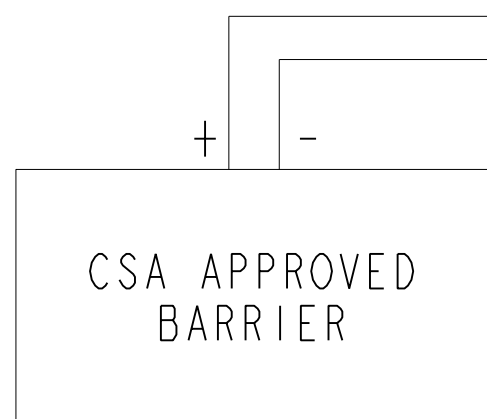
## 644 & 244E CIRCUIT CONNECTION WITH CSA APPROVED BARRIER

Exia  
Intrinsically Safe/Securite Inrinseque

REVISIONS					
ZONE	REV	DESCRIPTION	CHG. NO.	APP'D	DATE
	AC	ADDED US INSTALLATION INFO	RTC1071216	MK	8/21/18

NON-HAZARDOUS AREA

HAZARDOUS AREA



### INTRINSICALLY SAFE OUTPUT PARAMETERS

#### CLASS 1, DIVISION 1

##### GROUPS A,B,C, AND D

T6 (-50° ≤ Ta ≤ 40°C) &

T5 (-50° ≤ Ta ≤ 60°C)

mA

- 30V or less, 340 ohms or more 132
- 28V or less, 300 ohms or more 140
- 25V or less, 240 ohms or more 156
- 22V or less, 190 ohms or more 174

T4 (-50° ≤ Ta ≤ 80°C)

mA

- 30V or less, 330 ohms or more 136
- 28V or less, 250 ohms or more 168
- 25V or less, 200 ohms or more 188
- 22V or less, 130 ohms or more 254

##### GROUPS C AND D

T4 (-50° ≤ Ta ≤ 80°C)

mA

- 30V or less, 230 ohms or more 196
- 28V or less, 200 ohms or more 210
- 25V or less, 160 ohms or more 234

#### NOTES:



(Volts / Ohms) x 1.5, [Represents 1.5 F.O.S. (Current) referenced to Figure 3 of C22.2 No. 157-92.]



Power limited to ≤ 0.67 Watts to limit thermal rise.



Power limited to ≤ 1.00 Watts to ensure 2/3 rating of protection components.



The 644 & 244E must be installed in a suitable enclosure to meet installation codes stipulated in the Canadian Electrical Code (CEC).

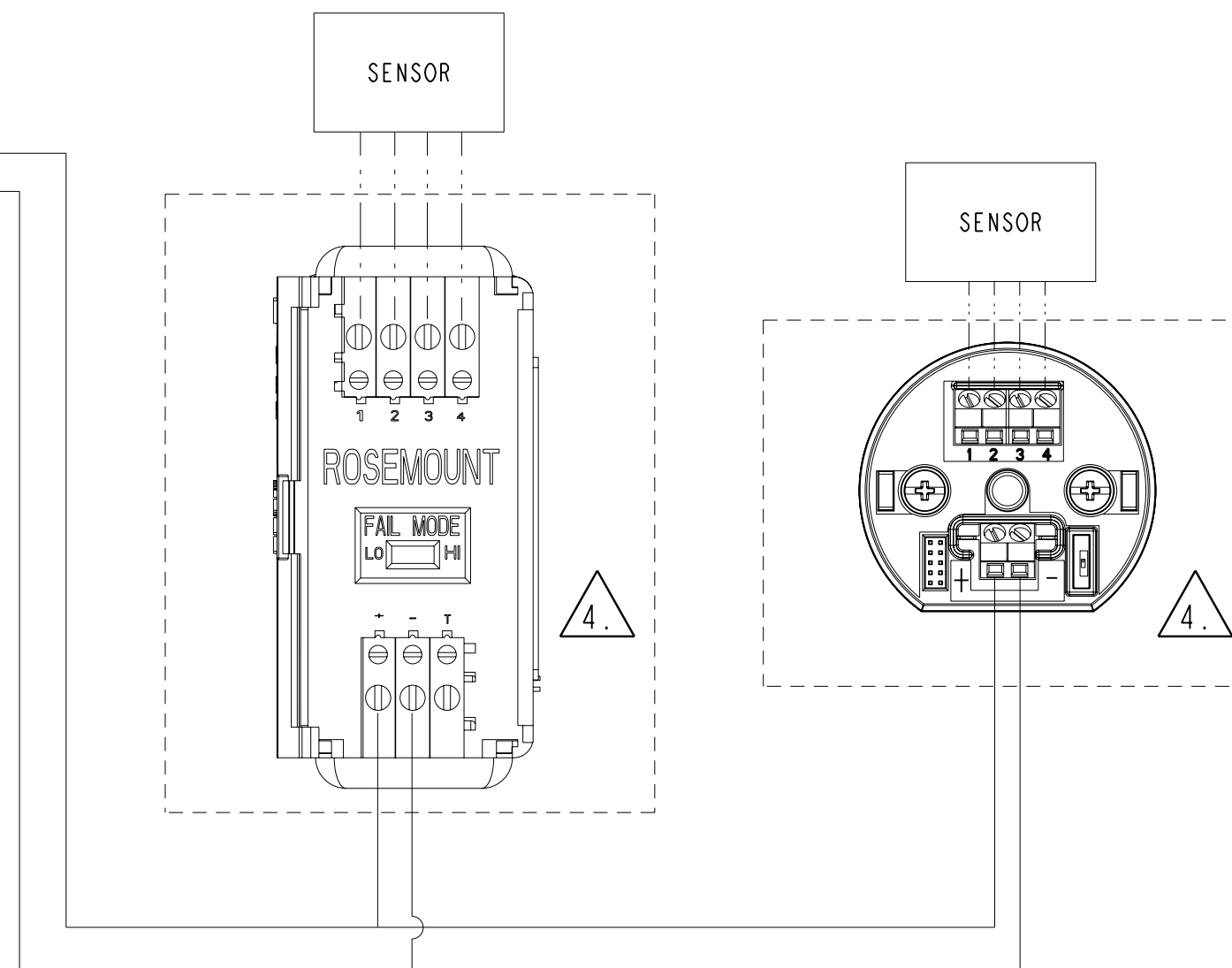
**WARNING: SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY.**  
**AVERTISSEMENT: La Substitution de composants peut compromettre la securite intrinseque.**

Universal Head Enclosure Options:

- J5
- J6

Transmitter Model Numbers:

- 644H
- 244EH



CAD Maintained, (Pro/E)

CONFIDENTIAL AND PROPRIETARY INFORMATION IS CONTAINED HEREIN AND MUST BE HANDLED ACCORDINGLY.	UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES [mm]. REMOVE ALL BURRS AND SHARP EDGES. MACHINE SURFACE FINISH 125		CONTRACT NO.		<b>ROSEMOUNT®</b> 8200 Market Boulevard • Chanhassen, MN 55317 USA	
	-TOLERANCES-		DR. PAUL BEDNEY	25-MAY-00		TITLE
	.X ± .1 [2,5] .XX ± .02 [0,5] .XXX ± .010 [0,25]		CHK'D			INSTALLATION DRAWING: 644 & 244E CSA INTRINSIC SAFETY
	FRACTIONS ± 1/32 ANGLES ± 2		APP'D David Strei	6/19/00		
	DO NOT SCALE PRINT		APP'D GOVT.			
SIZE C	FSCM NO.	DRAWING NO.	00644-1064			
SCALE 3:4	WT.	SHEET 1 OF 3				

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TABULATION	
DASH NO.	DESCRIPTION
-0001	AS SHOWN

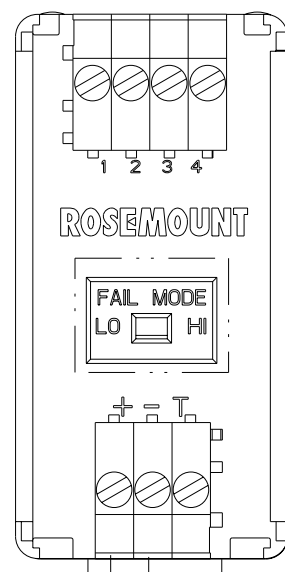
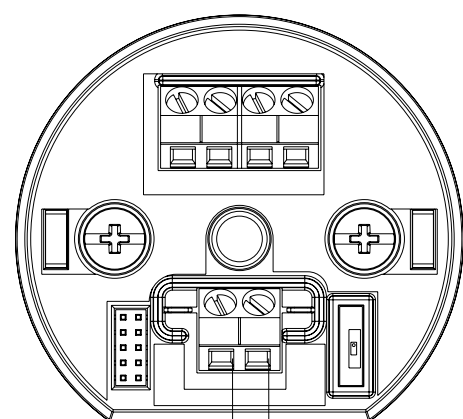
### FOR INSTALLATION IN THE UNITED STATES

REVISIONS					
ZONE	REV	DESCRIPTION	CHG. NO.	APP'D	DATE
	AC	ADDED US INSTALLATION INFO	RTC1071216	MK	8/21/18

ROSEMOUNT 644 TRANSMITTER IS CSA APPROVED AS INTRINSICALLY SAFE WHEN USED IN CIRCUIT WITH AN APPROVED ASSOCIATED APPARATUS WHICH MEETS THE ENTITY PARAMETERS LISTED IN CLASS I, II, III; DIVISION 1 AND 2; AND GROUPS A, B, C, D, E, F, AND G.

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

HAZARDOUS AREA



#### SENSOR TERMINAL OUTPUT PARAMETER LIMITS

$U_o = 13.6 \text{ Vdc}$   
 $I_o = 18 \text{ mA}$   
 $P_o = 61 \text{ mW}$   
 $C_a = 0.074 \mu\text{F}$   
 $L_a = 100 \text{ mH}$

#### LOOP TERMINAL INPUT PARAMETER LIMITS

$U_i = 30 \text{ Vdc}$   
 $I_i = 240 \text{ mA}$   
 $P_i = 1.0 \text{ W}$   
 OR  
 $P_i = 0.67 \text{ W}$   
 $C_i = 0.051 \mu\text{F}$   
 $L_i = 0.0 \mu\text{H}$

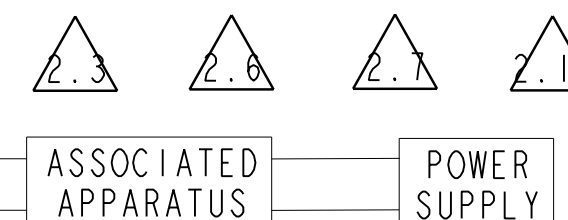
#### AMBIENT TEMPERATURE LIMITS

$T_4 (-50 \leq T_a \leq 80^\circ\text{C})$   
 $T_5 (-50 \leq T_a \leq 40^\circ\text{C})$   
 OR  
 $T_5 (-50 \leq T_a \leq 50^\circ\text{C})$   
 $T_6 (-50 \leq T_a \leq 40^\circ\text{C})$

NON-HAZARDOUS AREA

#### ASSOCIATED APPARATUS OUTPUT PARAMETER LIMITS

$U_o \leq 30 \text{ Vdc}$   
 $I_o \leq 240 \text{ mA}$   
 $P_o \leq 1.0 \text{ W}$   
 OR  
 $P_o \leq 0.67 \text{ W}$   
 $C_a > C_{\text{cable}} + C_i$   
 $L_a > L_{\text{cable}} + L_i$



#### NOTES:

- 2.1 ONLY EQUIPMENT CLASSIFIED AS SIMPLE APPARATUS, SUCH AS THERMOCOUPLES AND RTD'S MAY BE CONNECTED TO SENSOR TERMINALS.
- 2.2 NO REVISION TO DRAWING WITHOUT PRIOR FACTORY MUTUAL APPROVAL.
- 2.3 ASSOCIATED APPARATUS MANUFACTURER'S INSTALLATION DRAWING MUST BE FOLLOWED WHEN INSTALLING THIS EQUIPMENT.
- 2.4 THE ENTITY CONCEPT ALLOWS INTERCONNECTION OF INTRINSICALLY SAFE APPARATUS WITH ASSOCIATED APPARATUS WHEN THE FOLLOW IS TRUE:  
 $V_{\text{max}} \text{ or } U_i \geq V_{\text{oc}}, V_f \text{ or } U_o;$   
 $I_{\text{max}} \text{ or } I_i \geq I_{\text{sc}}, I_f \text{ or } I_o;$   
 $P_{\text{max}} \text{ or } P_i \geq P_o;$   
 $C_A \geq C_i + C_{\text{cable}};$   
 $L_a \geq L_i - L_{\text{cable}}.$
- 2.5 DUST-TIGHT CONDUIT SEAL MUST BE USED WHEN INSTALLED IN CLASS II AND CLASS III ENVIRONMENTS.
- 2.6 CONTROL EQUIPMENT CONNECTED TO BARRIER MUST NOT USE OR GENERATE MORE THAN 250 Vrms or Vdc.

2.7 RESISTANCE BETWEEN INTRINSICALLY SAFE GROUND AND EARTH GROUND MUST BE LESS THAN 1 Ohm.

2.8 INSTALLATION SHOULD BE IN ACCORDANCE WITH ANSI/ISA-RP 12.06.01 "INSTALLATION OF INTRINSICALLY SAFE SYSTEM FOR HAZARDOUS (CLASSIFIED) LOCATIONS" AND THE NATIONAL ELECTRICAL CODE (ANSI/NFPA70)

2.9 MUST BE INSTALLED IN AN ENCLOSURE MEETING THE REQUIRMENTS OF THE NATIONAL ELECTRIC CODE (ANSI/NFPA70) AND ANSI/ISA S82.01 AND S82.03.

2.10 THE ASSOCIATED APPARATUS MUST BE CSA APPROVED.

2.11 APPROVED ENCLOSURES: D1, D2, J1, J2, J3, J4, J5, J6, J7, J8, R1, R2, R3, AND R4.

2.12 RAIL MOUNT MODEL NUMBERS 644R, AND 244ER.

CAD Maintained, (Pro/E)

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	-TOLERANCES-		DR.	S. ANCEL 8/21/18		TITLE
	$.x \pm .1 (2.5)$ $.xx \pm .02 (0.5)$ $.xxx \pm .010 (0.25)$		CHK'D	M. KNUTE 8/21/18		INSTALLATION DRAWING: 644 & 244E CSA INTRINSIC SAFETY
	FRACTIONS $\pm 1/32$ ANGLES $\pm 2$ DO NOT SCALE PRINT		APP'D			SIZE C FSCM NO. DRAWING NO. 00644-1064
		APP'D GOVT.		SCALE 1:1 WT.	SHEET 2 OF 3	

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2

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TABULATION	
DASH NO.	DESCRIPTION
-0001	AS SHOWN

THE 644 IS CSA APPROVED AS SUITABLE FOR CLASS 1, DIVISION 2, GROUPS A, B, C, AND D HAZARDOUS (CLASSIFIED) LOCATIONS.

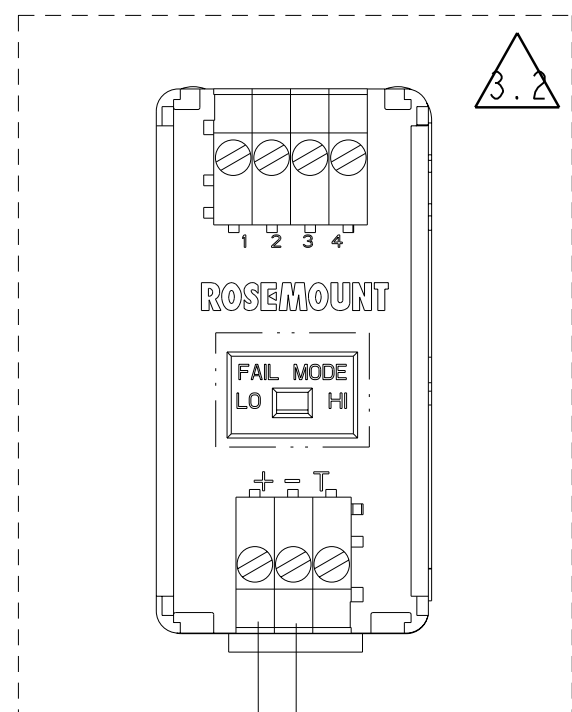
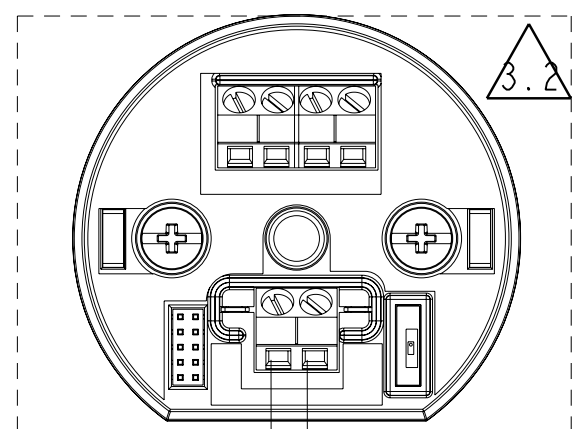
MAY BE INSTALLED IN DIVISION 2 LOCATION USING DIVISION 2 WIRING METHODS OR NON-INCENDIVE FIELD WIRING AS IDENTIFIED BELOW.

TO ASSURE A SYSTEM SUITABLE FOR CLASS 1, DIVISION 2, THE TRANSMITTER AND ASSOCIATED APPARATUS MUST BE WIRED IN ACCORDANCE WITH THE ASSOCIATED APPARATUS MANUFACTURER'S FIELD WIRING INSTRUCTIONS AND THE CIRCUIT DIAGRAM SHOWN BELOW.

REVISIONS					
ZONE	REV	DESCRIPTION	CHG. NO.	APP'D	DATE
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HAZARDOUS AREA

NON-HAZARDOUS AREA



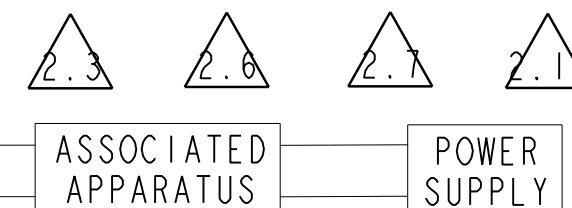
SENSOR TERMINAL OUTPUT PARAMETER LIMITS	
$V_t$	$= 13.6 \text{ Vdc}$
$I_t$	$= 18 \text{ mA}$
$P_t$	$= 61 \text{ mW}$
$C_a$	$= 0.074 \mu\text{F}$
$L_a$	$= 100 \text{ mH}$

LOOP TERMINAL INPUT PARAMETER LIMITS	
$U_i$	$= 30 \text{ Vdc}$
$P_i$	$= 1.0 \text{ W}$
OR	
$P_i$	$= 0.67 \text{ W}$
$C_i$	$= 0.051 \mu\text{F}$
$L_i$	$= 0.0 \mu\text{H}$

AMBIENT TEMPERATURE LIMITS	
$T_5$	$(-50 \leq T_a \leq 85^\circ\text{C})$

ASSOCIATED APPARATUS OUTPUT PARAMETER LIMITS	
$U_o$	$\leq 30 \text{ Vdc}$
$P_o$	$\leq 1.0 \text{ W}$
OR	
$P_o$	$\leq 0.67 \text{ W}$
$C_a$	$> C_{\text{cable}} + C_i$
$L_a$	$> L_{\text{cable}} + L_i$



NOTES:

- 3.3 WHEN INSTALLING SENSOR WITH FLEXIBLE CABLE, SENSOR MUST BE INSTALLED PER ARTICLE NEC 336.
- TRANSMITTER MUST BE INSTALLED IN A SUITABLE RATED ENCLOSURE.
- 3.1 ONLY EQUIPMENT CLASSIFIED AS SIMPLE APPARATUS, SUCH AS THERMOCOUPLES AND RTD'S, MAY BE CONNECTED TO SENSOR TERMINALS.

CAD Maintained, (Pro/E)

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	-TOLERANCES-		DR.	S. ANCEL 8/21/18		TITLE
	.X ± .1 [2.5] .XX ± .02 [0.5] .XXX ± .010 [0.25]		CHK'D	M. KNUTE 8/21/18		INSTALLATION DRAWING: 644 & 244E CSA INTRINSIC SAFETY
	FRACTIONS ± 1/32      ANGLES ± 2		APP'D			SIZE C      FSCM NO.      DRAWING NO. 00644-1064
DO NOT SCALE PRINT		APP'D GOVT.		SCALE 1:1      WT.      SHEET 3 OF 3		