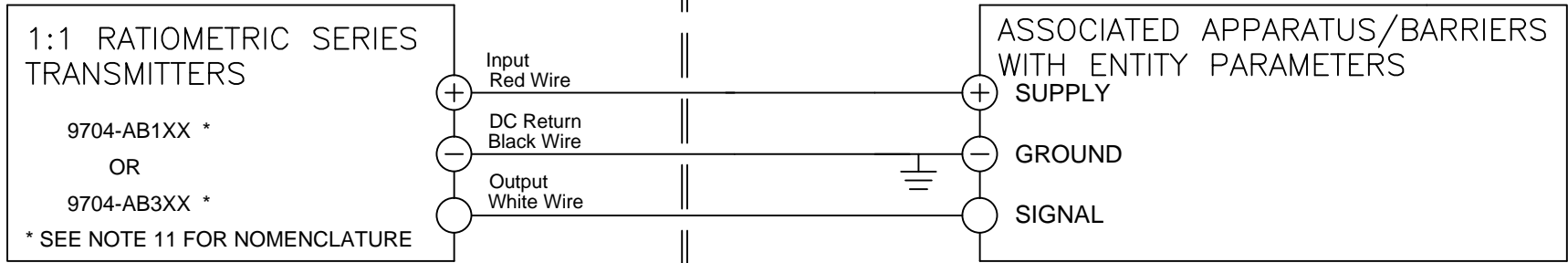


MATERIAL

WEIGHT N/A

Hazardous (Classified) Location
Class I, Division 1, Groups C & D

Nonhazardous Location



NOTES:

- INTRINSICALLY SAFE DEVICE ENTITY PARAMETERS:
INPUT (RED WIRE), DC RETURN (BLACK WIRE), OUTPUT (WHITE WIRE)
 $V_{max} = 14\text{ V}$
 $I_{max} = 200\text{ mA}$
 $C_i = 0.34\text{ uF}$
 $L_i = 18.98\text{ uH}$
- SELECTED ASSOCIATED APPARATUS/BARRIERS MUST BE THIRD PARTY APPROVED AS INTRINSICALLY SAFE FOR THE APPLICATION AND HAVE V_{oc} NOT EXCEEDING V_{max} AND I_{sc} NOT EXCEEDING I_{max} . SEE NOTE 5.
- CABLE CAPACITANCE (C_c) PLUS INTRINSICALLY SAFE EQUIPMENT CAPACITANCE (C_i) MUST BE LESS THAN THE MARKED CAPACITANCE (C_a) AND CABLE INDUCTANCE (L_c) PLUS INTRINSICALLY SAFE EQUIPMENT INDUCTANCE (L_i) MUST BE LESS THAN THE MARKED INDUCTANCE SHOWN ON ANY SAFETY BARRIER. SEE NOTE 5.
- IF THE ELECTRICAL PARAMETERS OF THE CABLE ARE UNKNOWN, THE FOLLOWING VALUES MAY BE USED:
 CAPACITANCE: 60 pF/ft
 INDUCTANCE: 0.20 uH/ft
- I.S. EQUIPMENT BARRIER

V_{max}	\geq	V_{oc}
I_{max}	\geq	I_{sc}
$C_i + C_c$	\leq	C_a
$L_i + L_c$	\leq	L_a
- WHERE MULTIPLE CIRCUITS EXTEND FROM THE SAME PIECE OF INTRINSICALLY SAFE EQUIPMENT TO ASSOCIATED APPARATUS, THEY MUST BE INSTALLED IN SEPERATE CABLES OR IN ONE CABLE WHICH HAS SUITABLE INSULATION. REFER TO INSTRUMENT SOCIETY OF AMERICA RECOMMENDED PRACTICE ISA RP12.6 FOR INSTALLING INTRINSICALLY SAFE LOOPS.
- BARRIERS MUST BE INSTALLED IN ACCORDANCE WITH BARRIER MANUFACTURER'S CONTROL DRAWING AND ARTICLE 504 OF THE NATIONAL ELECTRICAL CODE. (ANSI/NFPA 70 OR OTHER LOCAL INSTALLATION CODES, AS APPLICABLE).
- THE MAXIMUM NONHAZARDOUS LOCATION VOLTAGE MUST BE NO GREATER THAN 250 V RMS.
- OUTPUT CURRENT MUST BE LIMITED BY A RESISTOR SUCH THAT THE OUTPUT VOLTAGE-CURRENT PLOT IS A STRAIGHT LINE DRAWN BETWEEN OPEN CIRCUIT VOLTAGE AND SHORT CIRCUIT CURRENT.
- TEMPERATURE RATING T4.
- PERMITTED INTRINSICALLY SAFE DEVICES THAT ARE 1:1 RATIO-METRIC SERIES TRANSMITTERS.
 MODEL 9704-ABCXX WHERE:
 A = CABLE ORIENTATION: (S) STRAIGHT OR (R) RIGHT ANGLE
 B = DIAL APPLICATION: (M) MAGNETEL OR (D) JR/SR DIALS
 C = HARNESS TYPE:
 (1) 0159-01011, 3 WIRE, 22 AWG, BLACK, FLYING LEADS
 (3) 0159-00871, 3 WIRE, 22 AWG, GRAY, FLYING LEADS
 XX = HARNESS LENGTH IN FEET (25 FT MAX.)
- ASSOCIATED APPARATUS MUST NOT BE USED IN COMBINATION UNLESS PERMITTED BY THE ASSOCIATED APPARATUS CERTIFICATION.

REV	DESCRIPTION	E.R.#	DATE
D	38.5 uH WAS 18.98 uH ON PG 2 ONLY	33471D	11/16 18

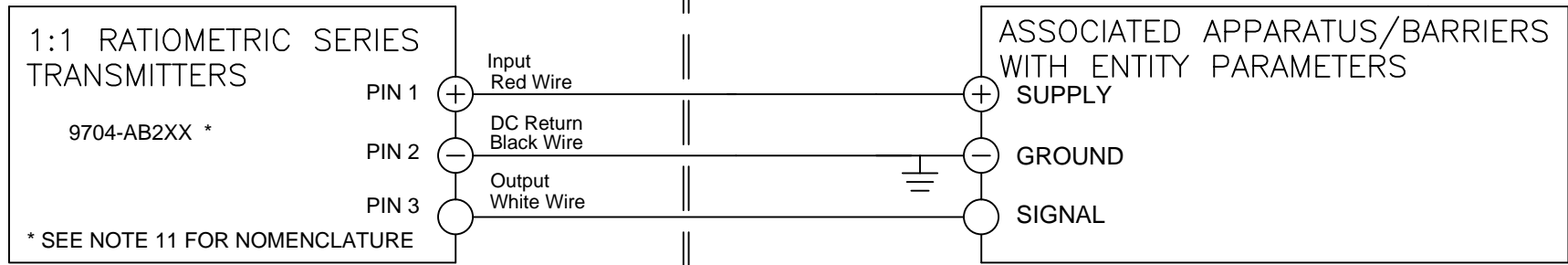
REV	DESCRIPTION	E.R.#	DATE	REV	DESCRIPTION	E.R.#	DATE	REV	DESCRIPTION	E.R.#	DATE
A	UPDATED NOTE 7 ; ADDED NOTE 12 ; WHT & BLK PIN LOC. REVERSED & PG 1 & 2	33471A	11/12 18	B	.34 uF WAS .37 uF 2 PLCS; T4 WAS T3C 2 PLCS	33471B	11/14 18	C	ADD "SEE NOTE 11 FOR NOMENCLATURE"; ADD WIRE COLOR CALLOUTS TO NOTE 1	33471C	11/16 18

PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF ROCHESTER GAUGES, LLC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT WRITTEN PERMISSION OF ROCHESTER GAUGES IS PROHIBITED.				TOLERANCES NOT SHOWN	2 PLC ±.010" 3 PLC ±.005" FRAC. ±1/64" ANGLES ±1°	SUPERSEDES NEW	E.R.# 33471	DRAWN BY JJ	DATE 10/1/18	USED ON
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	ROCHESTER GAUGES, LLC	SCALE NONE	TITLE INTRINSIC SAFETY CONTROL DRAWING FOR 1:1 RATIO-METRIC SERIES LOW VOLTAGE MODULE TYPE HALL EFFECT TRANSMITTERS			PART NUMBER WD-580	REV D	SHEET 1 OF 2

Hazardous (Classified) Location
 Class I, Division 1, Groups C & D

Nonhazardous Location



NOTES:

1. INTRINSICALLY SAFE DEVICE ENTITY PARAMETERS:

INPUT (PIN 1), DC RETURN (PIN 2), OUTPUT (PIN 3)

$V_{max} = 14\text{ V}$
 $I_{max} = 200\text{ mA}$
 $C_i = 0.34\text{ }\mu\text{F}$
 $L_i = 38.5\text{ }\mu\text{H}$

2. SELECTED ASSOCIATED APPARATUS/BARRIERS MUST BE THIRD PARTY APPROVED AS INTRINSICALLY SAFE FOR THE APPLICATION AND HAVE V_{oc} NOT EXCEEDING V_{max} AND I_{sc} NOT EXCEEDING I_{max} . SEE NOTE 5.

3. CABLE CAPACITANCE (C_c) PLUS INTRINSICALLY SAFE EQUIPMENT CAPACITANCE (C_i) MUST BE LESS THAN THE MARKED CAPACITANCE (C_a) AND CABLE INDUCTANCE (L_c) PLUS INTRINSICALLY SAFE EQUIPMENT INDUCTANCE (L_i) MUST BE LESS THAN THE MARKED INDUCTANCE SHOWN ON ANY SAFETY BARRIER. SEE NOTE 5.

4. IF THE ELECTRICAL PARAMETERS OF THE CABLE ARE UNKNOWN, THE FOLLOWING VALUES MAY BE USED:

CAPACITANCE: 60 pF/ft
 INDUCTANCE: 0.20 $\mu\text{H/ft}$

5. I.S. EQUIPMENT BARRIER

V_{max}	\geq	V_{oc}
I_{max}	\geq	I_{sc}
$C_i + C_c$	\leq	C_a
$L_i + L_c$	\leq	L_a

6. WHERE MULTIPLE CIRCUITS EXTEND FROM THE SAME PIECE OF INTRINSICALLY SAFE EQUIPMENT TO ASSOCIATED APPARATUS, THEY MUST BE INSTALLED IN SEPERATE CABLES OR IN ONE CABLE WHICH HAS SUITABLE INSULATION. REFER TO INSTRUMENT SOCIETY OF AMERICA RECOMMENDED PRACTICE ISA RP12.6 FOR INSTALLING INTRINSICALLY SAFE LOOPS.

7. BARRIERS MUST BE INSTALLED IN ACCORDANCE WITH BARRIER MANUFACTURER'S CONTROL DRAWING AND ARTICLE 504 OF THE NATIONAL ELECTRICAL CODE. (ANSI/NFPA 70 OR OTHER LOCAL INSTALLATION CODES, AS APPLICABLE).

8. THE MAXIMUM NONHAZARDOUS LOCATION VOLTAGE MUST BE NO GREATER THAN 250 V RMS.

9. OUTPUT CURRENT MUST BE LIMITED BY A RESISTOR SUCH THAT THE OUTPUT VOLTAGE-CURRENT PLOT IS A STRAIGHT LINE DRAWN BETWEEN OPEN CIRCUIT VOLTAGE AND SHORT CIRCUIT CURRENT.

10. TEMPERATURE RATING T4.

11. PERMITTED INTRINSICALLY SAFE DEVICES THAT ARE 1:1 RATIO METRIC SERIES TRANSMITTERS.

MODEL 9704-ABCXX WHERE:

A = CABLE ORIENTATION: (S) STRAIGHT OR (R) RIGHT ANGLE

B = DIAL APPLICATION: (M) MAGNETEL OR (D) JR/SR DIALS

C = HARNESS TYPE:

(2) 0159-01018, 3 WIRE, 24 AWG, GRAY WITH 0154-00284 CONNECTOR

XX = HARNESS LENGTH IN FEET (25 FT MAX.)

12. ASSOCIATED APPARATUS MUST NOT BE USED IN COMBINATION UNLESS PERMITTED BY THE ASSOCIATED APPARATUS CERTIFICATION.