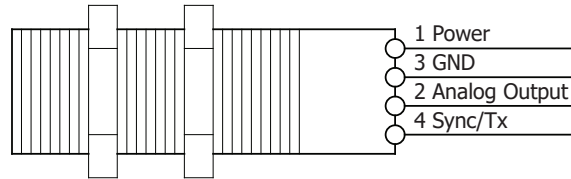


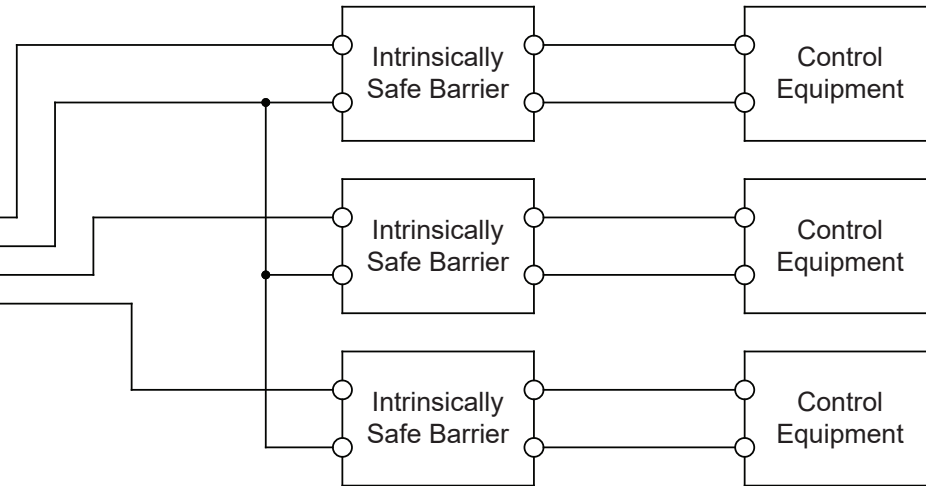
## Hazardous Location

UL/cUL: Class I, Groups A, B, C, and D;  
 Class II, Groups E, F, and G; Class III  
 ATEX/IECEX: Zones 0, 1, and 2, Groups I, IIA, IIB, and IIC;  
 Zones 20, 21, and 22, Groups IIIA, IIIB, and IIIC



RPS-409A-IS2  
 Exia  
 INTRINSICALLY SAFE/SÉCURITÉ INTRINSÈQUE  
 Ultrasonic Sensor

## Non-Hazardous Location



## Notes

NOTE 1: RPS-409A-IS2 Exia INTRINSICALLY SAFE/SÉCURITÉ INTRINSÈQUE Apparatus Entity Parameters

RPS-409A-IS2 Entity Parameters					
Terminal Numbers	$V_{max}$ or $U_i$	$I_{max}$ or $I_i$	$P_{max}$ or $P_i$	$C_i$	$L_i$
1 & 3 (Power)	30 V	100 mA	0.750 W	*	*
2 & 3 (Analog Output)	16 V	16 mA	0.064 W	*	*
4 & 3 (Sync/Tx)	16 V	16 mA	0.064 W	*	*
* = Negligible					

Table 1

NOTE 2: RPS-409A-abcd-IS2-efgh Model Number Information

abc = Maximum range of the ultrasonic sensor in inches.

d = Enclosure/Housing

Blank: PPS enclosure version with static dissipative properties, see Note 17 and certificate(s) for Specific Conditions of Use.

P: PVC enclosure version without static dissipative properties, see Note 18 and certificate(s) for Specific Conditions of Use.

efgh = May include additional character(s) for non-safety related options.

NOTE 3: WARNING: TO PREVENT IGNITION OF EXPLOSIVE ATMOSPHERES, DISCONNECT POWER BEFORE SERVICING.

AVERTISSEMENT: POUR ÉVITER L'INFLAMMATION D'ATMOSPHÈRES EXPLOSIVES, COUPER LE COURANT AVANT L'ENTRETIEN.

NOTE 4: WARNING: SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY.

AVERTISSEMENT: LA SUBSTITUTION DE COMPOSANTS PEUT COMPROMETTRE LA SÉCURITÉ INTRINSÈQUE.

NOTE 5: The Sync/Tx line is not required for operation of the sensor. If not used the Sync/Tx line may be left open, or tied to ground.

NOTE 6: To maintain the IP67 rating of the sensor, the cable assembly used to connect to the sensor must have an IP rating of IP67 or greater. Also the coupling nut on the cable assembly must be secured to the sensor with a minimum engagement of three threads.

Drawn By/Date JVW / 02-08-2012	<b>Migatron Corp.</b> 935 Dieckman Street Woodstock, IL 60098 USA	
	Title: RPS-409A-IS2 Control Drawing	
Size: A	Drawing No.: Ex05021114	Rev.: 3
Scale: N/A	Date: July 22, 2021	Page: 1 of 2

NOTE 7: The RPS-409A-IS2 must be installed in accordance with this Control Drawing, Article 504 of the National Electrical Code (ANSI/NFPA 70) for installation in the United States, Section 18 of the Canadian Electrical Code for installations in Canada, or other local codes, as applicable. Also refer to the RPS-409A-IS2 User Manual for additional instructions.

NOTE 8: Intrinsically safe circuits must be wired and separated in accordance with Article 504.20 of the National Electrical Code (ANSI/NFPA 70), or other local codes, as applicable.

NOTE 9: Associated apparatus/equipment 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.

NOTE 10: Associated apparatus/equipment may be in a Division 2 or Zone 2 location if so approved.

NOTE 11: Selected associated apparatus/equipment must be third party listed as providing intrinsically safe circuits for the application, and have  $V_{OC}$  or  $V_t$  not exceeding  $V_{max}$  (or  $U_o$  not exceeding  $U_i$ ),  $I_{SC}$  or  $I_t$  not exceeding  $I_{max}$  (or  $I_o$  not exceeding  $I_i$ ), and the  $P_o$  of the associated apparatus/equipment must be less than or equal to the  $P_{max}$  or  $P_i$  of the intrinsically safe apparatus, as shown in Table 2. If  $P_o$  of the associated apparatus/equipment is not known, it may be calculated using the formula  $P_o = [(V_{OC})(I_{SC})]/4 = [(U_o)(I_o)]/4$ .

NOTE 12 : Capacitance and inductance of the field wiring from the intrinsically safe apparatus to the associated apparatus/equipment shall be calculated and must be included in the system calculations as shown in Table 2. Cable capacitance,  $C_{cable}$ , plus intrinsically safe apparatus capacitance,  $C_i$ , must be less than the marked capacitance,  $C_a$  (or  $C_o$ ), shown on any associated apparatus/equipment used. The same applies for inductance ( $L_{cable}$ ,  $L_i$  and  $L_a$  or  $L_o$ , respectively). Where the cable capacitance and inductance per foot are not known, the following values shall be used:  $C_{cable} = 60$  pF/ft.,  $L_{cable} = 0.2$   $\mu$ H/ft.

I.S. Apparatus	Associated Apparatus
$V_{max}$ or $U_i$	$\geq V_{OC}$ or $V_t$ or $U_o$
$I_{max}$ or $I_i$	$\geq I_{SC}$ or $I_t$ or $I_o$
$P_{max}$ or $P_i$	$\geq P_o$
$C_i + C_{cable}$	$\leq C_a$ or $C_o$
$L_i + L_{cable}$	$\leq L_a$ or $L_o$

Table 2

NOTE 13: Associated apparatus/equipment must be installed in accordance with its manufacturer's Control Drawing and Article 504 of the National Electrical Code (ANSI/NFPA 70) for installation in the United States, Section 18 of the Canadian Electrical Code for installations in Canada, or other local codes, as applicable.

NOTE 14: When required by the manufacturer's Control Drawing, the associated apparatus/equipment must be connected to a suitable ground electrode per the National Electrical Code (ANSI/NFPA 70), the Canadian Electrical Code, or other local installation codes, as applicable. The resistance of the ground path must be less than 1 ohm.

NOTE 15: Associated apparatus/equipment must not be used in combination unless permitted by the associated apparatus/equipment certification.

NOTE 16: Control equipment must not use or generate more than 250 V rms or dc with respect to earth.

NOTE 17: WARNING: DIELECTRIC STRENGTH OF ENCLOSURE IS NOT SUFFICIENT TO INSULATE THE RPS-409A-IS2 FROM OTHER EQUIPMENT. THE RPS-409A-IS2 MAY BE MOUNTED ONTO A METAL PART IF THE METAL PART IS EARTH GROUNDED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE OR OTHER LOCAL CODES, AS APPLICABLE, OR IT MAY BE MOUNTED ON AN INSULATED PART. IN EITHER CASE, THE ENCLOSURE MUST BE SEGREGATED OR INSULATED FROM LIVE PARTS.

AVERTISSEMENT: LA RÉSISTANCE DIÉLECTRIQUE DU BOITIER N'EST PAS SUFFISANTE POUR ISOLER LE RPS-409A-IS2 DES AUTRES ÉQUIPEMENTS. LE RPS-409A-IS2 PEUT ÊTRE FIXÉ SUR UNE PIÈCE MÉTALLIQUE SI LA PIÈCE MÉTALLIQUE EST MISE À TERRE CONFORMÉMENT AU CODE NATIONAL DE L'ÉLECTRICITÉ OU À D'AUTRES CODES LOCAUX, SELON LE CAS ÉCHÉANT, OU IL PEUT ÊTRE FIXÉ SUR UNE PIÈCE ISOLÉE. DANS LES DEUX CAS, LE BOITIER DOIT ÊTRE SÉPARÉ OU ISOLÉ DES PIÈCES SOUS TENSIONS.

NOTE 18: WARNING: POTENTIAL ELECTROSTATIC CHARGING HAZARD, WIPE WITH A DAMP CLOTH.

AVERTISSEMENT: DANGER POTENTIEL DE CHARGES ÉLECTROSTATIQUES, ESSUYER AVEC UN CHIFFON HUMIDE.

Drawn By/Date JVW / 02-08-2012	<b>Migatron Corp.</b> 935 Dieckman Street Woodstock, IL 60098 USA	
	Title: RPS-409A-IS2 Control Drawing	
Size: A	Drawing No.: Ex05021114	Rev.: 3
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