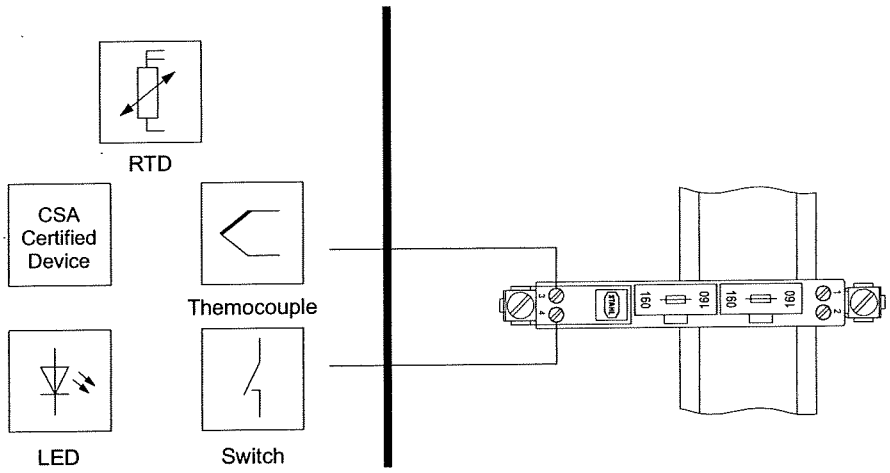
For Safety barriers 9004/0.-...-...-..1 and 9004/5.-...-...-..1 (see Table 1)	Class I, Zone 1; Group IIC/IIB Hazardous Locations	Non-hazardous or Zone 2 Hazardous Locations
For Safety barriers 9004/61-...-...-..1 (see Table 2)	Class I, II, III; Div. 1; Group A-G or Class I; Zone 1; Group IIC/IIB Hazardous Locations	Non-hazardous, Division 2 or Zone 2 Hazardous Locations

Intrinsic Safe Apparatus or Simple Apparatus



Notes:

1. Intrinsically safe apparatus may be switches, thermocouples, LEDs, RTDs or a CSA Certified System or Entity device connected in accordance with the manufacturer´s installation instructions.

2. For Entity concept use the appropriate parameters to ensure the following:
   - for Divisions: $V_{OC} \leq V_{max}$ $C_a \geq C_i + C_{leads}$
   $I_{SC} \leq I_{max}$ $L_a \geq L_i + L_{leads}$

   - for Zones: $U_O \leq U_i$ $C_O \geq C_i + C_{leads}$
   $I_O \leq I_i$ $L_O \geq L_i + L_{leads}$

3. Electrical apparatus connected to an intrinsically safe system should not use or generate voltages > 250 V (U_{max}).

4. Installation should be in accordance with the Canadian Electrical Code, Part I.

5. The system shall be installed in a suitable enclosure per the Authority Having Jurisdiction..

6. Maximum barrier operating temperature is 60 °C.

WARNING – DO NOT DISCONNECT NON-INTRINSICALLY SAFE WIRING OR REPLACE FUSES UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NON-HAZARDOUS.

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Index	Date	Drawn
01	03.11.03	T. Stahl

Certification drawing

	Date	Name
2003		
Drawn	21.07.	T. Walter
Appr.		Kaiser

STAHL

Title: INTRINSPAK Series 9004/..-...-...-..1 Intrinsic Safety Barriers

Drawing No.: 90 046 11 31 2

Replaces: | Replaced by:

Scale: none

Sheet: 1 of 2

Agency: CSA

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Safety Barriers Types 9004/0.-...-...-..1 and 9004/5.-...-...-..1

The Intrinsic Safety Barriers Types 9004/0. and 9004/5. are associated apparatus located in a non-hazardous or Zone 2 locations and provide intrinsically safe connections for device(s) located in Class I, Zone 1, Group IIC/IIB Hazardous (Classified) Locations.

Table 1 - Barrier Types and Parameters suitable for Zone 1 Installations:

Type	U_O [V]	I_O [mA]	P_O [mW]	Group IIC		Group IIB	
				L_O [mH]	C_O [µF]	L_O [mH]	C_O [µF]
9004/0a-086-030-001	8.6	30	258	2.0	0.86	2.5	5.0
9004/0a-086-050-001	8.6	50	430	2.0	0.69	2.5	4.5
9004/0a-086-100-001	8.6	100	860	1.0	0.63	2.5	3.4
9004/0a-086-150-001	8.6	150	1290	0.97	0.38	2.5	2.3
9004/0a-168-030-001	16.8	30	504	2.0	0.22	2.5	1.3
9004/0a-168-050-001	16.8	50	840	0.86	0.16	2.5	1.2
9004/0a-168-100-001	16.8	100	1680	-	-	1.6	1.1
9004/0a-172-140-001	17.2	140	2408	-	-	0.17	1.2
9004/0a-200-030-001	20	30	600	2.0	0.082	2.5	0.80
9004/0a-200-050-001	20	50	1000	-	-	2.5	0.68
9004/0a-200-095-001	20	95	1900	-	-	0.2	0.88
9004/0a-263-025-001	26.3	25	657.5	0.17	0.097	2.5	0.33
9004/0a-263-030-001	26.3	30	789	-	-	2.5	0.31
9004/0a-263-050-001	26.3	50	1315	-	-	1.3	0.33
9004/0a-280-025-001	28	25	700	-	-	2.5	0.28
9004/0a-280-045-001	28	45	1260	-	-	1.5	0.28
9004/0a-315-022-001	31.5	22	693	-	-	2.5	0.24
9004/0a-315-025-001	31.5	25	787.5	-	-	2.5	0.23
9004/5a-206-030-001	20.6	30	618	2.0	0.072	2.5	0.72
9004/5a-206-050-001	20.6	50	1030	-	-	2.5	0.58
9004/5a-206-085-001	20.6	85	1751	-	-	0.37	0.68
9004/5a-220-030-001	22	30	660	1.3	0.073	2.5	0.55

a = Polarity: 0 (negative) or 1 (positive)

Safety Barriers Types 9004/61-...-...-..1

The Intrinsic Safety Barriers Types 9004/61 are associated apparatus located in a non-hazardous or Div. 2 or Zone 2 locations and provide intrinsically safe connections for device(s) located in Class I, Div. 1, Group A, B, C, D; Class II, Div. 1, Group E, F, G; Class III, Div. 1; or Class I, Zone 1, Group IIC/IIB Hazardous (Classified) Locations.

Table 2 - Barrier Types and Parameters suitable for Division 1 and Zone 1 Installations

Type	V_{OC} (U_O) [V]	I_{SC} (I_O) [mA]	P_O [mW]	Group A, B, E Group IIC		Group C, D, F, G Group IIB	
				L_O / L_a [mH]	C_O / C_a [µF]	L_O / L_a [mH]	C_O / C_a [µF]
9004/61-220-035-001	22	35	770	0.05	0.165	2.5	0.52
9004/61-232-028-041	23.2	28	649.6	1.0	0.075	2.5	0.46

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Appr.		Kaiser

STAHL

Title: INTRINSPAK Series 9004/..-...-...-..1 Intrinsic Safety Barriers

Scale: none

Sheet: 2 of 2

Drawing No.: 90 046 11 31 2

Agency: CSA

Replaces: | Replaced by: | A4

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